DOCUMENT RECEIVED IN ELECTRONIC FORMAT FOLLOWS:

Permit data form
History sheet
Copy of check
See page 1 with date stamp
Operation Plan Page 1 missing from disk

PERMIT DATA FORM CHECK IF NEW: _____

MOD__ NEW__ (RENEWAL) ✓ SITE WAFR # AIR # 48-0165969

SITE/WAFER/FACILITY NAME: Vista landfill

PROJECT NAME: _____

DESC: _____

TYPE CODE: SO SUBCODE: T3 CHECK IF GP __ EXEMPT __ NPDES __

CORRECT FEE: $ 4000-

PROCESSOR: JL

AMOUNT RCV'D: 4000-

AMOUNT REFUND: _____

WACS # 87081

MONIES DUE: _____

RED ___ YELLOW___ GREEN___ NO PERMIT REQ ___

HISTORY SHEET

SITE/WAFR/AIR#: 48-0165965-018 **TYPE:** 00 **SUBTYPE:** T3

SITE/WAFR/AIR NAME: Vista Landfill

PROJECT NAME:

DATE	TIME BEGIN	TIME END	TOTAL TIME	COMMENTS	POSITION TITLE
ENTERED			30		OAS

FILE COPY

WASTE MANAGEMENT

VISTA LANDFILL, INC.
242 W. Keene Road
Apopka, FL 32703
(407) 886-2920
(407) 889-8043 Fax

February 17, 2011

Mr. Thomas Lubozynski, P.E.
Waste Program Administration
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

RECEIVED
FEB 18 2011
DEP Central Dist.

Subject: Permit Renewal Application
Vista Landfill, Class III Facility, WACS #87081
242 W. Keene Road, Apopka, Orange County, Florida
FDEP Permit No. SC48-0165969-014/SO48-0165969-015

Dear Mr. Lubozynski:

Please find enclosed the Vista Landfill, LLC Construction/Operating Permit Renewal Application for the subject facility prepared by HSAgolden.

If you have any questions during your review, please feel free to contact me at 407-902-1469, sgrant@wm.com or Jim Golden, P.G. of HSAgolden at 407-649-5475, jgolden@hsagolden.com.

Sincerely,

Sheree Grant

Sheree Grant
Waste Management Inc. of Florida Market Area Engineer

C: Jay Davoll, P.E. City of Apopka Engineer
Irv Slike, Vista Landfill, LLC
Paul Bermillo, WMIF Environmental Protection Manager

5150

HSA GOLDEN
100 EAST PINE STREET, SUITE 605
ORLANDO, FL 32801

FLORIDA BANK OF COMMERCE
63-1588-631

2/16/2011

PAY TO THE ORDER OF Florida Dept. of Environmental Protection $ **4,000.00

Four Thousand and 00/100********** DOLLARS

FL Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767

MEMO
Permit Renewal - WM Vista Landfill

MP

Security Features Included. Details on back.

[redacted]

1.0 Introduction

1.1 Purpose and Scope of the Operation Plan

The updated Operation Plan provides a detailed description of the daily operations of the Vista Landfill, Class III facility (Vista Landfill), including contingency operations for emergencies. This Operation Plan complies with the requirements of Chapter 62-701, Florida Administrative Code (F.A.C) and Chapter 66, City of Apopka Code of Ordinances (a.k.a. Solid Waste Management Ordinance – SWMO). This document is based on Operation Plans per Geosyntec Consultants (July 2007 and June 2009), Waste Management (June 2010), and HSA Golden (November 2010).

1.2 Facility Location

Vista Landfill is located in the City of Apopka. The general site location is shown in Figure 1. The site is located within Section 21, Township 21 South, Range 28 East in Orange County, Florida. The main entrance of the facility is located at latitude 28°38'24.5"N, longitude 81°80'41.7"W. The currently permitted footprint of the facility is shown in Figure 2.

2.0 Facilities and Personnel

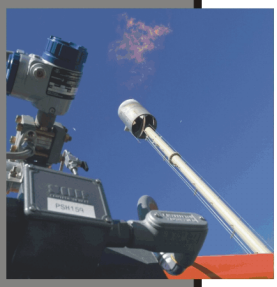
2.1 Designation of Responsible Persons

In accordance with Rule 62-701.500(1), F.A.C, the facility has at least one trained operator at the facility during periods of waste acceptance (operation) and at least one trained spotter at each working face. Note that if the trained operator is at the working face, he/she can also function as a trained spotter.

The District Manager and the Operations Supervisor/Site Manager for Vista Landfill have responsibility of overall management and operation of the Vista Landfill. The District Manager has the authority to obtain the necessary personnel to operate the site and provide for their training and orientation. The District Manager ascertains the facility's need for equipment, has the authority to replace existing equipment or obtain new equipment, and is responsible for administering the provisions of the site operation plan.

The Environmental Protection Manager and Market Area Engineer are responsible for facility compliance, as well as assisting with operational issues, groundwater, leachate, and facility gas sampling, submittal of monitoring reports, surveying of disposal area limits, facility planning, and cell and other capital project construction. The day-to-day operations of the site are directed by the Operations Supervisor/Site Manager who is responsible for site personnel attendance and performance. As such, he/she routinely directs the daily activities of the operations manager, scale-house attendant, facility operators and spotters, and other support personnel.

Vista Landfill is currently staffed approximately as follows:



Permit Renewal Application

Vista Landfill, Class III Facility
242 West Keene Road
Apopka, Orange County, Florida
FDEP Permit No. SC48-0165969-014/
SO48-0165969-015
WACS ID No. 87081

***Prepared for*:**

Florida Department of Environmental Protection
Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

February 2011

hsagolden
engineering environmental solutions

100 East Pine Street, Suite 605
Orlando, FL 32801

WASTE MANAGEMENT

VISTA LANDFILL, INC.
242 W. Keene Road
Apopka, FL 32703
(407) 886-2920
(407) 889-8043 Fax

February 17, 2011

Mr. Thomas Lubozynski, P.E.
Waste Program Administration
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Subject: Permit Renewal Application
Vista Landfill, Class III Facility, WACS #87081
242 W. Keene Road, Apopka, Orange County, Florida
FDEP Permit No. SC48-0165969-014/SO48-0165969-015

Dear Mr. Lubozynski:

Please find enclosed the Vista Landfill, LLC Construction/Operating Permit Renewal Application for the subject facility prepared by HSAgolden.

If you have any questions during your review, please feel free to contact me at 407-902-1469, sgrant@wm.com or Jim Golden, P.G. of HSAgolden at 407-649-5475, jgolden@hsagolden.com.

Sincerely,

Sheree Grant
Waste Management Inc. of Florida Market Area Engineer

C: Jay Davoll, P.E. City of Apopka Engineer
Irv Slike, Vista Landfill, LLC
Paul Bermillo, WMIF Environmental Protection Manager

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hsagolden
engineering environmental solutions

100 East Pine Street
Suite 605
Orlando, FL 32801
Phone: 407.649.5475
Fax: 407.649.6582
hsagolden.com

February 17, 2011

VIA UPS

Mr. F. Thomas Lubozynski, P.E.
Florida Department of Environmental Protection
Solid Waste Section
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

Subject: Permit Renewal Application
Vista Landfill, Class III Facility, WACS #87081
242 W. Keene Road, Apopka, Orange County, Florida
FDEP Permit No. SC48-0165969-014/SO48-0165969-015
HSA Golden Project No. 09-574.020

Dear Mr. Lubozynski:

On behalf of Waste Management Inc. of Florida (WMIF), HSA Golden is submitting for your review the enclosed four (4) copies of this permit renewal application for the Vista Landfill, Class III Facility (Vista Landfill). The application fee in the amount of $4,000.00 required by Rule 62-701.315, F.A.C. is enclosed. The application includes the following sections:

Attachment 1:	Completed FDEP Form 62-701.900(1)
Attachment 2:	Ownership Documentation/Rule 62-701 Prohibitions
Attachment 3:	Engineering Drawings, Current Aerial Photograph, and Topographic Survey
Attachment 4:	Updated Operation Plan
Attachment 5:	Updated Closure Plan
Attachment 6:	Enforcement History
Attachment 7:	Financial Assurance – Closure Cost Estimate Update
Attachment 8:	Environmental Resources Permit
Attachment 9:	Potable Well Survey/Updated Groundwater Monitoring Plan

Those portions of the original permit application submittal by Geosyntec Consultants (July to November 2007) which have not changed (i.e. Engineering Report, Geotechnical Investigation, and Hydrogeological Investigation) are still valid; and therefore, are not included in this permit renewal submittal.

Please contact either of the below individuals at (407) 649-5475, if you or your staff have any questions or require additional information.

Sincerely,

HSA GOLDEN

David L. Leggett
2-17-2011

David L. Leggett, P.E.
Principal Engineer

2/17/11

James E. Golden, P.G.
Vice President/Principal Hydrogeologist

Attachments

cc: Addressee (4)
Ms. Sheree Grant, WMIF
Mr. Paul Bermillo, WMIF
Mr. Jay Davoll, City of Apopka

Attachment 1:

Completed FDEP Form 62-701.900(1)

Reset Form | Print Form

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(1), F.A.C.

Form Title: Application to Construct, Operate, Modify, or Close a Solid Waste Management Facility

Effective Date: January 6, 2010

Incorporated in Rule: 62-701.330(3), F.A.C.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION TO CONSTRUCT, OPERATE, MODIFY, OR CLOSE A SOLID WASTE MANAGEMENT FACILITY

APPLICATION INSTRUCTIONS AND FORMS

Northwest District
160 Governmental Center
Pensacola, FL 32502-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-807-3300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
13051 N. Telecom Pkwy
Temple Terrace, FL 33637
813-632-7600

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
239-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600

INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes,(FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department's District Office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315, FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "not applicable" or "no substantial change". Information provided in support of the application shall be marked "submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

II. Application Parts Required for Construction and Operation Permits

A. Landfills and Ash Monofills - Submit Parts A through S
B. Asbestos Monofills - Submit Parts A,B,C,D,E,F,I,K,M, O through S
C. Industrial Solid Waste Disposal Facilities - Submit Parts A through S

NOTE: Portions of some Parts may not be applicable.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A, B and C type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

III. Application Parts Required for Closure Permits

A. Landfills and Ash Monofills - Submit Parts A,B,L, N through S
B. Asbestos Monofills - Submit Parts A,B,M, O through S
C. Industrial Solid Waste Disposal Facilities - Submit Parts A,B, L through S

NOTE: Portions of some Parts may not be applicable.

IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

VI. LISTING OF APPLICATION PARTS

PART A: GENERAL INFORMATION

PART B: DISPOSAL FACILITY GENERAL INFORMATION

PART C: PROHIBITIONS

PART D: SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL

PART E: LANDFILL PERMIT REQUIREMENTS

PART F: GENERAL CRITERIA FOR LANDFILLS

PART G: LANDFILL CONSTRUCTION REQUIREMENTS

PART H: HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

PART I: GEOTECHNICAL INVESTIGATION REQUIREMENTS

PART J: VERTICAL EXPANSION OF LANDFILLS

PART K: LANDFILL OPERATION REQUIREMENTS

PART L: WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

PART M: SPECIAL WASTE HANDLING REQUIREMENTS

PART N: GAS MANAGEMENT SYSTEM REQUIREMENTS

PART O: LANDFILL CLOSURE REQUIREMENTS

PART P: OTHER CLOSURE PROCEDURES

PART Q: LONG-TERM CARE

PART R: FINANCIAL ASSURANCE

PART S: CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
APPLICATION FOR A PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

PART A. GENERAL INFORMATION

1. Type of disposal facility (check all that apply):

☐ Class I Landfill
☑ Class III Landfill
☐ Industrial Solid Waste
☐ Other Describe:

☐ Ash Monofill
☐ Asbestos Monofill

NOTE: Waste Processing Facilities should apply on Form 62-701.900(4), FAC;
Land Clearing Disposal Facilities should notify on Form 62-701.900(3), FAC;
Compost Facilities should apply on Form 62-701.900(10), FAC; and
C&D Disposal Facilities should apply on Form 62-701.900(6), FAC

2. Type of application:

☐ Construction
☐ Operation
☑ Construction/Operation
☐ Closure
☐ Long-term Care Only

3. Classification of application:

☐ New
☑ Renewal

☐ Substantial Modification
☐ Intermediate Modification
☐ Minor Modification

4. Facility name: Vista Landfill, Class III

5. DEP ID number: 87081 County: Orange

6. Facility location (main entrance):
242 West Keene Road
Apopka, Florida 32703

7. Location coordinates:

Section: 28 Township: 21 Range: 28E

Latitude: 28° 38' 24.5" Longitude: 81° 30' 41.7"

Datum: NAD 83/90 Coordinate Method: State Plane

Collected by: T. Jeffrey Young, PSM, CP Company/Affiliation: Pickett Surv. & Photogram.

8. Applicant name (operating authority): Vista Landfill, LLC

Mailing address: 242 West Keene Road Apopka, Florida 32703
Street or P.O. Box City State Zip

Contact person: David McConnell Telephone: (904) 370-1945

Title: VP, WMIF

dmcconnell@wm.com
E-Mail address (if available)

9. Authorized agent/Consultant: HSA Golden

Mailing address: 100 East Pine Street, Suite 605, Orlando, FL 32801
Street or P.O. Box City State Zip

Contact person: James E. Golden, P.G. Telephone: (407) 649-5475

Title: Vice President, Principal Hydrogeologist

jgolden@hsagolden.com
E-Mail address (if available)

10. Landowner (if different than applicant): Buttrey Development Two, LLC c/o Florida Group Accounting Ctr.

Mailing address: P.O. Box 1450, Chicago, IL 60690-1450
Street or P.O. Box City State Zip

Contact person: Irv Slike Telephone: (407) 886-2920

islike@wm.com
E-Mail address (if available)

11. Cities, towns and areas to be served:
Northwest Orange County and Metro Orlando, Florida

12. Population to be served:
Current: 100,000 Five-Year Projection: 110,500

13. Date site will be ready to be inspected for completion: NA

14. Expected life of the facility: 40.6 years

15. Estimated costs:
Total Construction: $ NA Closing Costs: $ 2,784,709.44

16. Anticipated construction starting and completion dates:
From: NA To: NA

17. Expected volume or weight of waste to be received:
_____ yds^3/day 2,500 tons/day _____ gallons/day

PART B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned under this application:

Vista Landfill, Class III facility is currently a 102-acre lined landfill with leachate collection and storage systems. This permit application has been prepared to renew the existing Operation permit. Permitted operations include Class III solid waste, disposal, material recovery facility, waste tire processing (Small Waste Tire Processing Facility) yard trash recycling, pre-consumer vegetative waste composting, and an active borrow pit contained within permitted landfill footprint.

2. Facility site supervisor: Irv Slike

Title: District Manager Telephone: (407) 886-2920

islike@wm.com
E-Mail address (if available)

3. Disposal area: Total 102 acres; Used 17.5 acres; Available 84.5 acres.

4. Weighing scales used: ☑ Yes ☐ No

5. Security to prevent unauthorized use: ☑ Yes ☐ No

6. Charge for waste received: _____ $/yds^3 _____ $/ton

C&D/Class III - $24.10/ton
$60 minimum per load
Yard Waste - $34.00/ton
$60 minimum per load
Asbestos - $200.00/ton
1 ton minimum per load
Shredded Tires - $100.00/ton
$100 minimum per load

7. Surrounding land use, zoning:

☑ Residential ☐ Industrial
☑ Agricultural ☐ None
☐ Commercial ☑ Other Describe:
Institutional, Parks, and Recreational

8. Types of waste received:

☐ Household ☑ C & D debris
☑ Commercial Class III ☑ Shredded/cut tires
☐ Incinerator/WTE ash ☑ Yard trash
☐ Treated biomedical ☐ Septic tank
☐ Water treatment sludge ☐ Industrial

☐ Air treatment sludge ☐ Industrial sludge
☑ Agricultural ☐ Domestic sludge
☑ Asbestos ☑ Other Describe:
Pre-consumer vegetative wastes.

9. Salvaging permitted: ☐ Yes ☑ No

10. Attendant: ☑ Yes ☐ No Trained operator: ☑ Yes ☐ No

11. Trained spotters: ☑ Yes ☐ No Number of spotters used: _____

12. Site located in: ☐ Floodplain ☐ Wetlands ☑ Other:
Uplands

13. Days of operation: Monday through Saturday

14. Hours of operation: M-F 7:00am to 6:00pm/Sat 7:00am to 12:00pm

15. Days Working Face covered: weekly

16. Elevation of water table: 55 - 90 ft. Datum Used: NGVD 1929

17. Number of monitoring wells: 18

18. Number of surface monitoring points: N/A

19. Gas controls used: ☑ Yes ☐ No Type controls: ☐ Active ☑ Passive

Gas flaring: ☑ Yes ☐ No Gas recovery: ☐ Yes ☑ No

20. Landfill unit liner type:
☐ Natural soils ☐ Double geomembrane
☐ Single clay liner ☐ Geomembrane & composite
☑ Single geomembrane ☐ Double composite
☐ Single composite ☐ None
☐ Slurry wall ☐ Other Describe:

21. Leachate collection method:

- ☑ Collection pipes
- ☑ Geonets
- ☐ Well points
- ☐ Perimeter ditch
- ☐ Other Describe:
- ☐ Sand layer
- ☐ Gravel layer
- ☐ Interceptor trench
- ☐ None

22. Leachate storage method:

- ☑ Tanks Auxiliary
- ☐ Other Describe:
- ☐ Surface impoundments

23. Leachate treatment method:

- ☐ Oxidation
- ☐ Secondary
- ☐ Advanced
- ☐ Other
- ☐ Chemical treatment
- ☐ Settling
- ☑ None

24. Leachate disposal method:

- ☐ Recirculated
- ☐ Transported to WWTP
- ☐ Injection well
- ☐ Evaporation
- ☐ Other
- ☑ Pumped to WWTP
- ☐ Discharged to surface water/wetland
- ☐ Percolation ponds
- ☐ Spray Irrigation

25. For leachate discharged to surface waters:

Name and Class of receiving water:
N/A

26. Storm Water:

Collected: ☑ Yes ☐ No

Type of treatment:
Retention

Name and Class of receiving water:
N/A

27. Environmental Resources Permit (ERP) number or status:

ERP48-0817635-002 EM and 48-0187635-003 EM Modification application filed in January 2011

PART C. PROHIBITIONS (62-701.300, FAC)

S	LOCATION	N/A	N/C	
☑	Section 2	☐	☐	1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC)
☑	Section 2	☐	☐	2. If the facility qualifies for any of the exemptions contained in Rules 62-701.300(12) through (18), FAC, then document this qualification(s).
☑	Section 2	☐	☐	3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC)
☑	Section 2	☐	☐	4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC)
☑	Section 2	☐	☐	5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC)
☑	Section 2	☐	☐	6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC)
☑	Section 2	☐	☐	7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC)
☑	Section 2	☐	☐	8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC)
☑	Section 2	☐	☐	9. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC)
☑	Section 2	☐	☐	10. Provide documentation that the facility will be in compliance with the used oil and oily waste restrictions; (62-701.300(11), FAC)

PART D. SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL (62-701.320, FAC)

S	LOCATION	N/A	N/C	
☑	Section 1	☐	☐	1. Four copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5)(a),FAC)

S	LOCATION	N/A	N/C	PART D CONTINUED
☑	Attached	☐	☐	2. Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the application; (62-701.320(6),FAC)
☑	Attached	☐	☐	3. A letter of transmittal to the Department; (62-701.320(7)(a),FAC)
☑	Section 1	☐	☐	4. A completed application form dated and signed by the applicant; (62-701.320(7)(b),FAC)
☑	Attached	☐	☐	5. Permit fee specified in Rule 62-701.315, FAC in check or money order, payable to the Department; (62-701.320(7)(c),FAC)
☐		☐	☑	6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 1/2 inch by 11 inch consecutively numbered pages, a table of contents or index, the body of the report and all appendices including an operation plan, contingency plan, illustrative charts and graphs, records or logs of tests and investigations, engineering calculations; (62-701.320(7)(d),FAC)
☑	Sections 4 and 5	☐	☐	7.Operation Plan and Closure Plan; (62-701.320(7)(e)1,FAC)
☑	Section 4	☐	☐	8. Contingency Plan; (62-701.320(7)(e)2,FAC)
☑	Section 3	☐	☐	9. Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD 1929) showing; (62-701.320(7)(f),FAC)
☑	Section 3	☐	☐	a. A regional map or plan with the project location in relation to major roadways and population centers;
☑	Section 3	☐	☐	b. A vicinity map or aerial photograph no more than 1 year old showing the facility site and relevant surface features located within 1000 feet of the facility;
☑	Section 3	☐	☐	c. A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor and Mapper; and
☑	Section 3	☐	☐	d. Other necessary details to support the engineering report, including referencing elevations to a consistent, nationally recognized datum and identifying the method used for collecting latitude and longitude data.

S	LOCATION	N/A	N/C	PART D CONTINUED
☑	Section 2	☐	☐	10. Documentation that the applicant either owns the property or has legal authority from the property owner to use the site; (62-701.320(7)(g),FAC)
☐		☑	☐	11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of the waste reduction and recycling goals contained in Section 403.706,FS; (62-701.320(7)(h),FAC)
☑	Section 6	☐	☐	12. Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders or permit conditions relating to the operation of any solid waste management facility in this state; (62-701.320(7)(i),FAC)
☐		☑	☐	13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-702.320(8),FAC)
☐		☐	☑	14. Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable. If exempt, explain how the exemption applies; (62-701.320(13),FAC)
☑	Section 4	☐	☐	15. Explain how the operator and spotter training requirements and special criteria will be satisfied for the facility; (62-701.320(15), FAC)

PART E. LANDFILL PERMIT REQUIREMENTS (62-701.330, FAC)

S	LOCATION	N/A	N/C	
☑	Section 3	☐	☐	1. Regional map or aerial photograph no more than 5 years old showing all airports that are located within five miles of the proposed landfill; (62-701.330(3)(a),FAC)
☑	Section 3	☐	☐	2. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(3)(b),FAC)
☑	Section 3	☐	☐	a. Dimensions;
☑	Section 3	☐	☐	b. Locations of proposed and existing water quality monitoring wells;
☐		☐	☑	c. Locations of soil borings;

S	LOCATION	N/A	N/C	PART E CONTINUED
☑	Section 3	☐	☐	d. Proposed plan of trenching or disposal areas;
☑	Section 3	☐	☐	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
☑	Section 3	☐	☐	f. Any previously filled waste disposal areas;
☑	Section 3	☐	☐	g. Fencing or other measures to restrict access.
☑	Section 3	☐	☐	3. Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(3)(c),FAC):
☑	Section 3	☐	☐	a. Proposed fill areas;
☑	Section 3	☐	☐	b. Borrow areas;
☑	Section 3	☐	☐	c. Access roads;
☑	Section 3	☐	☐	d. Grades required for proper drainage;
☑	Section 3	☐	☐	e. Cross sections of lifts;
☐		☐	☑	f. Special drainage devices if necessary;
☑	Section 3	☐	☐	g. Fencing;
☑	Section 3	☐	☐	h. Equipment facilities.
☐		☐	☑	4. A report on the landfill describing the following; (62-701.330(3)(d),FAC)
☐		☐	☑	a. The current and projected population and area to be served by the proposed site;
☐		☐	☑	b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;
☐		☐	☑	c. Planned active life of the facility, the final design height of the facility and the maximum height of the facility during its operation;

S	LOCATION	N/A	N/C	PART E CONTINUED
☐	_____	☐	☑	d. The source and type of cover material used for the landfill.
☐	_____	☐	☑	5. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Chapter 62-160,FAC; (62-701.330(3)(g),FAC)
☑	Section 7 _____	☐	☐	6. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(3)(h),FAC)

PART F. GENERAL CRITERIA FOR LANDFILLS (62-701.340,FAC)

S	LOCATION	N/A	N/C	
☐	_____	☐	☑	1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result in a washout of solid waste; (62-701.340(3)(b),FAC)
☑	Section 3 _____	☐	☐	2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; (62-701.340(3)(c),FAC)

PART G. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400,FAC)

S	LOCATION	N/A	N/C	
☑	Section 3 _____	☐	☐	1. Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill and shall be designed to achieve a minimum factor of safety of 1.5 using peak strength values to prevent failures of side slopes and deep-seated failures; (62-701.400(2),FAC)
☐	_____	☐	☑	2. Landfill liner requirements; (62-701.400(3),FAC)
☐	_____	☐	☑	a. General construction requirements; (62-701.400(3)(a),FAC):
☐	_____	☐	☑	(1) Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☐	☑	(2) Document foundation is adequate to prevent liner failure;
☐	_____	☐	☑	(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;
☐	_____	☑	☐	(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;
☐	_____	☐	☑	(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate.
☐	_____	☐	☑	b. Composite liners; (62-701.400(3)(b),FAC)
☐	_____	☐	☑	(1) Upper geomembrane thickness and properties;
☐	_____	☐	☑	(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;
☐	_____	☑	☐	(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component.
☐	_____	☑	☐	c. Double liners; (62-701.400(3)(c),FAC)
☐	_____	☑	☐	(1) Upper and lower geomembrane thicknesses and properties;
☐	_____	☑	☐	(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
☐	_____	☑	☐	(3) Lower geomembrane sub-base design;
☐	_____	☑	☐	(4) Leak detection and secondary leachate collection system minimum design criteria ($k \geq 10$ cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer);
☐	_____	☐	☑	d. Standards for geosynthetic components; (62-701.400(3)(d),FAC)

S	LOCATION	N/A	N/C		PART G CONTINUED
☐	_____	☐	☑	(1)	Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;
☐	_____	☐	☑	(2)	Geomembranes to be used shall pass a continuous spark test by the manufacturer;
☐	_____	☐	☑	(3)	Design of 24-inch-thick protective layer above upper geomembrane liner;
☐	_____	☐	☑	(4)	Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer.
☐	_____	☐	☑	(5)	HDPE geomembranes, if used, meet the specifications in GRI GM13 and LLDPE geomembranes, if used, meet the specifications in GRI GM17;
☐	_____	☑	☐	(6)	PVC geomembranes, if used, meet the specifications in PGI 1104;
☐	_____	☐	☑	(7)	Interface shear strength testing results of the actual components which will be used in the liner system;
☐	_____	☐	☑	(8)	Transmissivity testing results of geonets if they are used in the liner system;
☐	_____	☐	☑	(9)	Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;
☐	_____	☐	☑	e. Geosynthetic specification requirements; (62-701.400(3)(e),FAC)	
☐	_____	☐	☑	(1)	Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
☐	_____	☐	☑	(2)	Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☐	☑	(3) Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size and geomembrane repairs;
☐	_____	☐	☑	(4) Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembrane and procedures for lining system acceptance;
☐	_____	☐	☑	(5) Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;
☐	_____	☐	☑	(6) Geonet and geocomposite specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;
☐	_____	☐	☑	(7) Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil material and any overlying materials;
☐	_____	☐	☑	f. Standards for soil liner components (62-710.400(3)(f),FAC):
☐	_____	☐	☑	(1) Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;
☐	_____	☑	☐	(2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method;
☐	_____	☑	☐	(3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☑	☐	(4) Specifications for soil component of liner including at a minimum:
☐	_____	☑	☐	(a) Allowable particle size distribution, Atterberg limits, shrinkage limit;
☐	_____	☑	☐	(b) Placement moisture and dry density criteria;
☐	_____	☑	☐	(c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
☐	_____	☑	☐	(d) Minimum thickness of soil liner;
☐	_____	☑	☐	(e) Lift thickness;
☐	_____	☑	☐	(f) Surface preparation (scarification);
☐	_____	☑	☐	(g) Type and percentage of clay mineral within the soil component;
☐	_____	☑	☐	(5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field.
☐	_____	☐	☑	g. If a Class III landfill is to be constructed with a bottom liner system, provide a description of how the minimum requirements for the liner will be achieved.
☐	_____	☐	☑	3. Leachate collection and removal system (LCRS); (62-701.400(4),FAC)
☐	_____	☐	☑	a. The primary and secondary LCRS requirements; (62-701.400(4)(a),FAC)
☐	_____	☐	☑	(1) Constructed of materials chemically resistant to the waste and leachate;
☐	_____	☐	☑	(2) Have sufficient mechanical properties to prevent collapse under pressure;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☐	☑	(3) Have granular material or synthetic geotextile to prevent clogging;
☐	_____	☐	☑	(4) Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas;
☐	_____	☐	☑	b. Other LCRS requirements; (62-701.400(4)(b) and (c),FAC)
☐	_____	☑	☐	(1) Bottom 12 inches having hydraulic conductivity ≥ 1×10^{-3} cm/sec;
☐	_____	☐	☑	(2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
☐	_____	☐	☑	(3) Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements;
☐	_____	☐	☑	(4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load and protection of geomembrane liner.
☐	_____	☑	☐	4. Leachate recirculation; (62-701.400(5),FAC)
☐	_____	☑	☐	a. Describe general procedures for recirculating leachate;
☐	_____	☑	☐	b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;
☐	_____	☑	☐	c. Describe procedures for preventing perched water conditions and gas buildup;
☐	_____	☑	☐	d. Describe alternate methods for leachate management when it cannot be recirculated due to weather or runoff conditions, surface seeps, wind-blown spray, or elevated levels of leachate head on the liner;
☐	_____	☑	☐	e. Describe methods of gas management in accordance with Rule 62-701.530, FAC;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☑	☐	f. If leachate irrigation is proposed, describe treatment methods and standards for leachate treatment prior to irrigation over final cover and provide documentation that irrigation does not contribute significantly to leachate generation.
☐	_____	☑	☐	5.Leachate storage tanks and leachate surface impoundments; (62-701.400(6),FAC)
☐	_____	☑	☐	a. Surface impoundment requirements; (62-701.400(6)(b),FAC)
☐	_____	☑	☐	(1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
☐	_____	☑	☐	(2) Designed in segments to allow for inspection and repair as needed without interruption of service;
☐	_____	☑	☐	(3) General design requirements;
☐	_____	☑	☐	(a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
☐	_____	☑	☐	(b) Leak detection and collection system with hydraulic conductivity ≥ 1 cm/sec;
☐	_____	☑	☐	(c) Lower geomembrane placed on subbase ≥ 6 inches thick with $k \leq 1 \times 10^{-5}$ cm/sec or on an approved geosynthetic clay liner with $k \leq 1 \times 10^{-7}$ cm/sec;
☐	_____	☑	☐	(d) Design calculation to predict potential leakage through the upper liner;
☐	_____	☑	☐	(e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
☐	_____	☑	☐	(4) Description of procedures to prevent uplift, if applicable;
☐	_____	☑	☐	(5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
☐	_____	☑	☐	(6) Procedures for controlling vectors and off-site odors.

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☑	☐	b. Above-ground leachate storage tanks; (62-701.400(6)(c),FAC)
☐	_____	☑	☐	(1) Describe tank materials of construction and ensure foundation is sufficient to support tank;
☐	_____	☑	☐	(2) Describe procedures for cathodic protection if needed for the tank;
☐	_____	☑	☐	(3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;
☐	_____	☑	☐	(4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;
☐	_____	☑	☐	(5) Describe design to remove and dispose of stormwater from the secondary containment system;
☐	_____	☑	☐	(6) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;
☐	_____	☑	☐	(7) Inspections, corrective action and reporting requirements;
☐	_____	☑	☐	(a) Overfill prevention system weekly;
☐	_____	☑	☐	(b) Exposed tank exteriors weekly;
☐	_____	☑	☐	(c) Tank interiors when tank is drained or at least every three years;
☐	_____	☑	☐	(d) Procedures for immediate corrective action if failures detected;
☐	_____	☑	☐	(e) Inspection reports available for department review.
☐	_____	☑	☐	c. Underground leachate storage tanks; (62-701.400(6)(d),FAC)

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☑	☐	(1) Describe materials of construction;
☐	_____	☑	☐	(2) A double-walled tank design system to be used with the following requirements;
☐	_____	☑	☐	(a) Interstitial space monitoring at least weekly;
☐	_____	☑	☐	(b) Corrosion protection provided for primary tank interior and external surface of outer shell;
☐	_____	☑	☐	(c) Interior tank coatings compatible with stored leachate;
☐	_____	☑	☐	(d) Cathodic protection inspected weekly and repaired as needed;
☐	_____	☑	☐	(3) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections;
☐	_____	☑	☐	(4) Inspection reports available for department review.
☐	_____	☑	☐	d.Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e),FAC)
☐	_____	☐	☑	6.Liner systems construction quality assurance (CQA); (62-701.400(7),FAC)
☐	_____	☐	☑	a. Provide CQA Plan including:
☐	_____	☐	☑	(1) Specifications and construction requirements for liner system;
☐	_____	☐	☑	(2) Detailed description of quality control testing procedures and frequencies;
☐	_____	☐	☑	(3) Identification of supervising professional engineer;
☐	_____	☐	☑	(4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;

S	LOCATION	N/A	N/C	PART G CONTINUED
☐	_____	☐	☑	(5) State qualifications of CQA professional engineer and support personnel;
☐	_____	☐	☑	(6) Description of CQA reporting forms and documents;
☐	_____	☐	☑	b. An independent laboratory experienced in the testing of geosynthetics to perform required testing;
☐	_____	☑	☐	7. Soil Liner CQA (62-701.400(8)FAC)
☐	_____	☑	☐	a. Documentation that an adequate borrow source has been located with test results or description of the field exploration and laboratory testing program to define a suitable borrow source;
☐	_____	☑	☐	b. Description of field test section construction and test methods to be implemented prior to liner installation;
☐	_____	☑	☐	c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.
☐	_____	☐	☐	8. Surface water management systems; (62-701.400(9),FAC)
☐	_____	☐	☑	a. Provide a copy of a Department permit for stormwater control or documentation that no such permit is required;
☐	_____	☐	☑	b. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;
☐	_____	☐	☑	c. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;
☐	_____	☐	☑	9. Gas control systems; (62-701.400(10),FAC)
☐	_____	☐	☑	a. Provide documentation that if the landfill is receiving degradable wastes, it will have a gas control system complying with the requirements of Rule 62-701.530, FAC;
☐	_____	☑	☐	10. For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400(11),FAC)

PART H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410(1), FAC)

S	LOCATION	N/A	N/C	
☐	_____	☐	☑	1. Submit a hydrogeological investigation and site report including at least the following information:
☐	_____	☐	☑	a. Regional and site specific geology and hydrogeology;
☐	_____	☐	☑	b. Direction and rate of ground water and surface water flow including seasonal variations;
☐	_____	☐	☑	c. Background quality of ground water and surface water;
☐	_____	☐	☑	d. Any on-site hydraulic connections between aquifers;
☐	_____	☐	☑	e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill;
☐	_____	☐	☑	f. Description of topography, soil types and surface water drainage systems;
☐	_____	☐	☑	g. Inventory of all public and private water wells within a one-mile radius of the landfill including, where available, well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level;
☐	_____	☐	☑	h. Identify and locate any existing contaminated areas on the site;
☐	_____	☐	☑	i. Include a map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas;
☐	_____	☐	☑	2. Report signed, sealed and dated by PE and/or PG.

PART I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.410(2),FAC)

S	LOCATION	N/A	N/C	
☐	_____	☐	☑	1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
☐	_____	☐	☑	a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
☐	_____	☐	☑	b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
☐	_____	☐	☑	c. Estimates of average and maximum high water table across the site;
☐	_____	☐	☑	d. Foundation analysis including:
☐	_____	☐	☑	(1) Foundation bearing capacity analysis;
☐	_____	☐	☑	(2) Total and differential subgrade settlement analysis;
☐	_____	☐	☑	(3) Slope stability analysis;
☐	_____	☐	☑	e. Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
☐	_____	☐	☑	f. An evaluation of fault areas, seismic impact zones, and unstable areas as described in 40 CFR 258.13, 40 CFR 258.14 and 40 CFR 258.15.
☐	_____	☐	☑	2. Report signed, sealed and dated by PE and/or PG.

PART J. VERTICAL EXPANSION OF LANDFILLS (62-701.430,FAC)

S	LOCATION	N/A	N/C	
☐	_____	☑	☐	1. Describe how the vertical expansion shall not cause or contribute to leachate leakage from the existing landfill, shall not cause objectionable odors, or adversely affect the closure design of the existing landfill;
☐	_____	☑	☐	2. Describe how the vertical expansion over unlined landfills will meet the requirements of Rule 62-701.400, FAC with the exceptions of Rule 62-701.430(1)(c),FAC;
☐	_____	☑	☐	3. Provide foundation and settlement analysis for the vertical expansion;
☐	_____	☑	☐	4. Provide total settlement calculations demonstrating that the final elevations of the lining system, that gravity drainage, and that no other component of the design will be adversely affected;
☐	_____	☑	☐	5. Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
☐	_____	☑	☐	6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
☐	_____	☑	☐	7. Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion.

PART K. LANDFILL OPERATION REQUIREMENTS (62-701.500,FAC)

S	LOCATION	N/A	N/C	
☑	Section 4	☐	☐	1. Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1),FAC)
☑	Section 4	☐	☐	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
☑	Section 4	☐	☐	a. Designating responsible operating and maintenance personnel;
☑	Section 4	☐	☐	b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;
☑	Section 4	☐	☐	c. Controlling types of waste received at the landfill;
☑	Section 4	☐	☐	d. Weighing incoming waste;
☑	Section 4	☐	☐	e. Vehicle traffic control and unloading;
☑	Section 4	☐	☐	f. Method and sequence of filling waste;
☑	Section 4	☐	☐	g. Waste compaction and application of cover;
☑	Section 4	☐	☐	h. Operations of gas, leachate, and stormwater controls;
☑	Section 4	☐	☐	i. Water quality monitoring.
☑	Section 4	☐	☐	j. Maintaining and cleaning the leachate collection system;
☑	Section 4	☐	☐	3. Provide a description of the landfill operation record to be used at the landfill; details as to location of where various operational records will be kept (i.e. FDEP permit, engineering drawings, water quality records, etc.) (62-701.500(3),FAC)
☑	Section 4	☐	☐	4. Describe the waste records that will be compiled monthly and provided to the Department annually; (62-701.500(4),FAC)
☑	Section 4	☐	☐	5. Describe methods of access control; (62-701.500(5),FAC)

S	LOCATION	N/A	N/C	PART K CONTINUED
☑	Section 4	☐	☐	6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6),FAC)
☑	Section 4	☐	☐	7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7),FAC)
☑	Section 4	☐	☐	a. Waste layer thickness and compaction frequencies;
☑	Section 4	☐	☐	b. Special considerations for first layer of waste placed above liner and leachate collection system;
☑	Section 4	☐	☐	c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;
☑	Section 4	☐	☐	d. Maximum width of working face;
☑	Section 4	☐	☐	e. Description of type of initial cover to be used at the facility that controls:
☑	Section 4	☐	☐	(1) Vector breeding/animal attraction
☑	Section 4	☐	☐	(2) Fires
☑	Section 4	☐	☐	(3) Odors
☑	Section 4	☐	☐	(4) Blowing litter
☑	Section 4	☐	☐	(5) Moisture infiltration
☑	Section 4	☐	☐	f. Procedures for applying initial cover including minimum cover frequencies;
☑	Section 4	☐	☐	g. Procedures for applying intermediate cover;
☑	Section 4	☐	☐	h. Time frames for applying final cover;
☑	Section 4	☐	☐	i. Procedures for controlling scavenging and salvaging.

S	LOCATION	N/A	N/C	PART K CONTINUED
☑	Section 4	☐	☐	j. Description of litter policing methods;
☑	Section 4	☐	☐	k. Erosion control procedures.
☐		☐	☑	8. Describe operational procedures for leachate management including; (62-701.500(8),FAC)
☐		☐	☑	a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;
☐		☐	☑	b. Operation and maintenance of leachate collection and removal system, and treatment as required;
☐		☐	☑	c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
☐		☐	☑	d. Identification of treatment or disposal facilities that may be used for off-site discharge and treatment of leachate;
☐		☐	☑	e. Contingency plan for managing leachate during emergencies or equipment problems;
☐		☐	☑	f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;
☐		☐	☑	g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;
☐		☐	☑	h. Procedures for water pressure cleaning or video inspecting leachate collection systems.
☑	Section 4	☐	☐	9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of Rule 62-701.530, FAC; (62-701.500(9),FAC)
☐		☐	☑	10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9); (62-701.500(10),FAC)

S	LOCATION	N/A	N/C	PART K CONTINUED
☑	Section 4	☐	☐	11. Equipment and operation feature requirements; (62-701.500(11),FAC)
☑	Section 4	☐	☐	a. Sufficient equipment for excavating, spreading, compacting and covering waste;
☑	Section 4	☐	☐	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
☑	Section 4	☐	☐	c. Communications equipment;
☑	Section 4	☐	☐	d. Dust control methods;
☑	Section 4	☐	☐	e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
☑	Section 4	☐	☐	f. Litter control devices;
☑	Section 4	☐	☐	g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.
☑	Section 4	☐	☐	12. Provide a description of all-weather access road, inside perimeter road and other roads necessary for access which shall be provided at the landfill; (62-701.500(12),FAC)
☑	Section 4	☐	☐	13. Additional record keeping and reporting requirements; (62-701.500(13),FAC)
☑	Section 4	☐	☐	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
☑	Section 4	☐	☐	b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
☑	Section 4	☐	☐	c. Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department;
☑	Section 4	☐	☐	d. Procedures for archiving and retrieving records which are more than five year old.

PART L. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)

S	LOCATION	N/A	N/C	
☑	Section 9	☐	☐	1. Water quality and leachate monitoring plan shall be submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements;
☐		☐	☑	a. Based on the information obtained in the hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2)(a),FAC)
☑	Section 9	☐	☐	b. All sampling and analysis preformed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b),FAC)
☑	Section 9	☐	☐	c. Ground water monitoring requirements; (62-701.510(3),FAC)
☑	Section 9	☐	☐	(1) Detection wells located downgradient from and within 50 feet of disposal units;
☑	Section 9	☐	☐	(2) Downgradient compliance wells as required;
☑	Section 9	☐	☐	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
☑	Section 9	☐	☐	(4) Location information for each monitoring well;
☑	Section 9	☐	☐	(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings;
☐		☐	☑	(6) Well screen locations properly selected;
☑	Section 9	☐	☐	(7) Monitoring wells constructed to provide representative ground water samples;
☑	Section 9	☐	☐	(8) Procedures for properly abandoning monitoring wells;
☐		☑	☐	(9) Detailed description of detection sensors if proposed.
☐		☑	☐	d. Surface water monitoring requirements; (62-701.510(4),FAC)

S	LOCATION	N/A	N/C	PART L CONTINUED
☐		☑	☐	(1) Location of and justification for all proposed surface water monitoring points;
☐		☐	☑	(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
☐		☐	☑	e. Leachate sampling locations proposed; (62-701.510(5),FAC)
☑	Section 9	☐	☐	f. Initial and routine sampling frequency and requirements; (62-701.510(6),FAC)
☑	Section 9	☐	☐	(1) Initial background ground water and surface water sampling and analysis requirements;
☑	Section 9	☐	☐	(2) Routine leachate sampling and analysis requirements;
☑	Section 9	☐	☐	(3) Routine monitoring well sampling and analysis requirements;
☐		☑	☐	(4) Routine surface water sampling and analysis requirements.
☑	Section 9	☐	☐	g. Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required; (62-701.510(7),FAC)
☑	Section 9	☐	☐	h. Water quality monitoring report requirements;(62-701.510(9),FAC)
☑	Section 9	☐	☐	(1) Semi-annual report requirements (see paragraphs 62 701.510(6)(c),(d)and (e) for sampling frequencies);
☑	Section 9	☐	☐	(2) Documentation that the water quality data shall be provided to the Department in an electronic format consistent with requirements for importing into Department databases, unless an alternate form of submittal is specified in the permit.
☑	Section 9	☐	☐	(3) Two and one-half year report requirements, or every five years if in long-term care, signed, dated and sealed by PG or PE.

PART M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)

S	LOCATION	N/A	N/C	
☑	Section 4	☐	☐	1. Describe procedures for managing motor vehicles; (62-701.520(1),FAC)
☐		☑	☐	2. Describe procedures for landfilling shredded waste; (62-701.520(2),FAC)
☑	Section 4	☐	☐	3. Describe procedures for asbestos waste disposal; (62-701.520(3),FAC)
☐		☑	☐	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
☐		☑	☐	5. Describe procedures for disposal of biological wastes; (62-701.520(5), FAC)

PART N. GAS MANAGEMENT SYSTEM REQUIREMENTS (62-701.530,FAC)

S	LOCATION	N/A	N/C	
☐		☐	☑	1. Provide the design for a gas management system that will (62-701.530(1), FAC):
☐		☐	☑	a. Be designed to prevent concentrations of combustible gases from exceeding 25% the LEL in structures and 100% the LEL at the property boundary;
☐		☐	☑	b. Be designed for site-specific conditions;
☐		☐	☑	c. Be designed to reduce gas pressure in the interior of the landfill;
☐		☐	☑	d. Be designed to not interfere with the liner, leachate control system or final cover.
☐		☐	☑	2. Provide documentation that will describe locations, construction details and procedures for monitoring gas at ambient monitoring points and with soil monitoring probes; (62-701.530(2), FAC):
☑	Section 4	☐	☐	3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC):
☐		☑	☐	4. Landfill gas recovery facilities; (62-701.530(5), FAC):

S	LOCATION	N/A	N/C	PART N CONTINUED
☐	_____	☑	☐	a. Information required in Rules 62-701.320(7) and 62-701.330(3), FAC supplied;
☐	_____	☑	☐	b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
☐	_____	☑	☐	c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
☐	_____	☑	☐	d. Description of procedures for condensate sampling, analyzing and data reporting provided;
☐	_____	☑	☐	e. Closure plan provided describing methods to control gas after recovery facility ceases operation and any other requirements contained in Rule 62-701.400(10), FAC;
☐	_____	☑	☐	f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.

PART O. LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600,FAC)

S	LOCATION	N/A	N/C	
☑	Section 5 _____	☐	☐	1. Closure permit requirements; (62-701.600(2),FAC)
☑	Section 5 _____	☐	☐	a. Application submitted to Department at least 90 days prior to final receipt of wastes;
☑	Section 5 _____	☐	☐	b. Closure plan shall include the following:
☑	Section 5 _____	☐	☐	(1) Closure design plan;
☑	Section 5 _____	☐	☐	(2) Closure operation plan;
☑	Section 5 _____	☐	☐	(3) Plan for long-term care;
☑	Section 5 _____	☐	☐	(4) A demonstration that proof of financial responsibility for long-term care will be provided.

S	LOCATION	N/A	N/C	PART O CONTINUED
☑	Section 5	☐	☐	2. Closure design plan including the following requirements: (62-701.600(3),FAC)
☑	Section 3	☐	☐	a. Plan sheet showing phases of site closing;
☑	Section 3	☐	☐	b. Drawings showing existing topography and proposed final grades;
☑	Section 5	☐	☐	c. Provisions to close units when they reach approved design dimensions;
☑	Section 3	☐	☐	d. Final elevations before settlement;
☑	Sections 3 and 5	☐	☐	e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters and discussion of expected precipitation effects;
☑	Section 5	☐	☐	f. Final cover installation plans including:
☑	Section 5	☐	☐	(1) CQA plan for installing and testing final cover;
☑	Section 5	☐	☐	(2) Schedule for installing final cover after final receipt of waste;
☐		☐	☑	(3) Description of drought-resistant species to be used in the vegetative cover;
☑	Section 5	☐	☐	(4) Top gradient design to maximize runoff and minimize erosion;
☐		☐	☑	(5) Provisions for cover material to be used for final cover maintenance.
☑	Section 5	☐	☐	g. Final cover design requirements:
☑	Section 5	☐	☐	(1) Protective soil layer design;
☑	Section 5	☐	☐	(2) Barrier soil layer design;

S	LOCATION	N/A	N/C	PART O CONTINUED
☑	Section 5	☐	☐	(3) Erosion control vegetation;
☑	Section 5	☐	☐	(4) Geomembrane barrier layer design;
☑	Section 5	☐	☐	(5) Geosynthetic clay liner design if used;
☑	Section 5	☐	☐	(6) Stability analysis of the cover system and the disposed waste.
☑	Section 5	☐	☐	h. Proposed method of stormwater control;
☑	Section 5	☐	☐	i. Proposed method of access control;
☑	Section 4	☐	☐	j. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC.
☑	Section 5	☐	☐	3. Closure operation plan shall include:(62-701.600(4),FAC)
☑	Section 5	☐	☐	a. Detailed description of actions which will be taken to close the landfill;
☑	Section 5	☐	☐	b. Time schedule for completion of closing and long-term care;
☑	Section 5	☐	☐	c. Describe proposed method for demonstrating financial assurance for long-term care;
☑	Section 5	☐	☐	d. Operation of the water quality monitoring plan required in Rule 62-701.510, FAC.
☑	Section 5	☐	☐	e. Development and implementation of gas management system required in Rule 62-701.530, FAC.
☑	Section 5	☐	☐	4. Certification of closure construction completion including: (62-701.600(6),FAC)
☑	Section 5	☐	☐	a. Survey monuments; (62-701.600(6)(a),FAC)
☑	Section 5	☐	☐	b. Final survey report; (62-701.600(6)(b),FAC)

S	LOCATION	N/A	N/C	PART O CONTINUED
☑	Section 5	☐	☐	5. Declaration to the public; (62-701.600(7),FAC)
☑	Section 5	☐	☐	6. Official date of closing; (62-701.600(8),FAC)
☑	Section 5	☐	☐	7. Justification for and detailed description of procedures to be followed for temporary closure of the landfill, if desired; (62-701.600(9),FAC)

PART P. OTHER CLOSURE PROCEDURES (62-701.610,FAC)

S	LOCATION	N/A	N/C	
☑	Section 5	☐	☐	1. Describe how the requirements for use of closed solid waste disposal areas will be achieved;(62-701.610(1),FAC)
☑	Section 5	☐	☐	2. Describe how the requirements for relocation of wastes will be achieved; (62-701.610(2), FAC)

PART Q. LONG-TERM CARE (62-701.620,FAC)

S	LOCATION	N/A	N/C	
☐		☐	☑	1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)
☑	Section 5	☐	☐	2. Stabilization report requirements; (62-701.620(6),FAC)
☑	Section 5	☐	☐	3. Right of access;(62-701.620(7),FAC)
☑	Section 5	☐	☐	4. Requirements for replacement of monitoring devices; (62-701.620(8),FAC)
☑	Section 5	☐	☐	5. Completion of long-term care signed and sealed by professional engineer (62-701.620(9), FAC).

PART R. FINANCIAL ASSURANCE (62-701.630,FAC)

S	LOCATION	N/A	N/C	
☑	Section 7 _____	☐	☐	1. Provide cost estimates for closing, long-term care, and corrective action costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3)&(7), FAC).
☑	Section 5 _____	☐	☐	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closing, long-term care, and corrective action plans; (62-701.630(4)&(8), FAC).
☑	Section 4 _____	☐	☐	3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms; (62-701.630(5),(6),&(9), FAC).
☑	Section 5 _____	☐	☐	4. Provide documentation and the appropriate forms for delaying submitting proof of financial assurance for solid waste disposal units that qualify; (62-701.630(2)(c), FAC).

PART S. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Vista Landfill, LLC

_____ is aware that statements made in this form and attached

information are an application for a Renewal Operation Permit from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Signature of Applicant or Agent

6501 Greenland Road
Mailing Address

David McConnell, VP, WMIF
Name and Title (please type)

Jacksonville, FL 32258
City, State, Zip Code

dmcconnell@wm.com
E-Mail address (if available)

(904) 370-1945
Telephone Number

Date: 2-17-2011

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

David L. Leggett
2-17-2011 Signature

HSA Golden
100 East Pine Street, Suite 605
Mailing Address

David L. Leggett, P.E.
Name and Title (please type)

Orlando, Florida 32801
City, State, Zip Code

dleggett@hsagolden.com
E-Mail address (if available)

70882
Florida Registration Number
(please affix seal)

(407) 649-5475
Telephone Number

Date: 2-17-2011

Attachment 2:

Ownership Documentation/Rule 62-701 Prohibitions

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Prohibitions

Vista Landfill, Class III Facility
WACS No. 87081
Rule 62-701.300 Prohibitions - Compliance

62-701.300 Prohibitions

(1) General prohibition.

(a) No person shall store, process, or dispose of solid waste except as authorized at a permitted solid waste management facility or a facility exempt from permitting under this chapter.

Vista Landfill, Class III Facility (Vista Landfill) has not stored, processed, or disposed of solid waste prior to obtaining appropriate permits.

(b) No person shall store, process, or dispose of solid waste in a manner or location that causes air quality standards to be violated or water quality standards or criteria of receiving waters to be violated.

No solid waste will be stored, processed, or disposed of in a manner or location that will cause air quality, water quality, or receiving water standards to be violated, as described in the application.

(2) Siting. Unless authorized by a Department permit or site certification in effect on May 27, 2001, or unless specifically authorized by another Department rule or a Department license or site certification based upon site-specific geological, design, or operational features, no person shall store or dispose of solid waste:

(a) In an area where geological formations or other subsurface features will not provide support for the solid waste;

The subject facility is not located in an area where geological formations or other subsurface features would prevent the waste processing facility from operating.

(b) Within 500 feet of an existing or approved potable water well unless storage or disposal takes place at a facility for which a complete permit application was filed or which was originally permitted before the potable water well was in existence. This prohibition shall not apply to any renewal of an existing permit that does not involve lateral expansion, nor to any vertical expansion at a permitted facility;

This prohibition does not apply to Vista Landfill, since the application is for renewal of an existing facility permit where no lateral or vertical expansion is proposed.

(c) In a dewatered pit unless the pit is lined and permanent leachate containment and special design techniques are used to ensure the integrity of the liner;

The subject facility is not located in a dewatered pit.

(d) In any natural or artificial body of water including ground water and wetlands within the jurisdiction of the Department. This prohibition does not apply to areas of standing water that exist only after storm events, provided that the storage or disposal does not result in objectionable odors or sanitary nuisances;

The subject facility is not located in any natural or artificial body of water including groundwater and wetlands within the jurisdiction of the Department.

(e) Within 200 feet of any natural or artificial body of water unless storage or disposal takes place at a facility for which a complete permit application was filed or which was originally permitted before the water body was in existence. This prohibition shall not apply to any renewal of an existing permit that does not involve lateral expansion, nor to any vertical expansion at a permitted facility. For purposes of this paragraph, a "body of water" includes wetlands within the jurisdiction of the Department, but does not include impoundments or conveyances which are part of an on-site, permitted stormwater management system, or bodies of water contained completely within the property boundaries of the disposal site which do not discharge from the site to surface waters. A person may store or dispose of solid waste within the 200 foot setback area upon demonstration to the Department that permanent leachate methods will result in compliance with water quality standards and criteria. However, nothing contained herein shall prohibit the Department from imposing conditions necessary to assure that solid waste stored or disposed of within the 200 foot setback area will not cause pollution from the site in contravention of Department rules; and

This prohibition does not apply to Vista Landfill, since the application is for renewal of an existing facility permit where no lateral or vertical expansion is proposed.

(f) On the right of way of any public highway, road, or alley.

The subject facility will not store wastes in any road, highway, or alley right of way.

(3) Burning. Open burning of solid waste is prohibited except in accordance with Chapter 62-256, F.A.C. Controlled burning of solid waste is prohibited except in a permitted incinerator, or in a facility in which the burning of solid waste is authorized by a site certification order issued under Chapter 403, Part II, F.S.

No burning is conducted at the subject facility.

(4) Hazardous waste. No hazardous waste shall be disposed of in a solid waste management facility unless such facility is permitted pursuant to Chapter 62-730, F.A.C.

Hazardous wastes are not accepted at the subject facility.

(5) PCBs. Disposal of liquids containing a polychlorinated biphenyl (PCB), or non-liquid PCBs in the form of contaminated soil, rags, or other debris, may be restricted or prohibited by 40 CFR Part 761. Persons managing PCBs are advised to consult that federal regulation before attempting to dispose of PCBs in any solid waste disposal unit in this state.

PCBs containing materials are not accepted for disposal at the subject facility.

(*6) Biomedical waste.*

(a) No biomedical waste shall be knowingly deposited in any solid waste management facility unless:

Biomedical wastes are not accepted for disposal at the subject facility.

1. The solid waste facility is specifically permitted to receive untreated biomedical waste;

Not Applicable.

2. The biomedical waste has been properly incinerated so that little or no organic material remains in the ash residue, or treated by a process approved by the Department of Health, and the provisions in paragraph 62-701.520(5)(d), F.A.C., are complied with; or

Not Applicable.

3. The biomedical waste is generated by an individual as a result of self care, or care by a family member or other non health care provider. However, in order to reduce the chance of exposure to the public, home generators are advised to segregate and package such waste before disposal according to the guidelines for disposal of home-generated biomedical waste available from each county health department.

Not Applicable.

(b) No solid waste, including treated biomedical waste, shall be commingled with untreated biomedical waste unless the solid waste is being managed in the same manner as the untreated biomedical waste.

Not Applicable.

(c) Treated or untreated biomedical waste shall not be allowed to leak into the environment during transport.

Not Applicable.

(7) Class I surface waters. The Department shall not issue a construction permit for a landfill within 3,000 feet of Class I surface waters.

Class I surface waters are not within 3,000 feet of Vista Landfill.

(8) Special wastes for landfills. No person who knows or who should know of the nature of such solid waste shall dispose of the following wastes:

(a) Lead-acid batteries in any landfill;

Vista Landfill does not accept lead-acid batteries for disposal.

(b) Used oil in any landfill, except as provided in Chapter 62-710, F.A.C.

Vista Landfill does not accept used oil for disposal.

(c) Yard trash in a Class I landfill;

Not Applicable.

(d) White goods in any landfill; and

Vista Landfill does not accept white goods for disposal.

(e) Whole waste tires in any landfill, except as provided in Chapter 62-711, F.A.C.

Whole tires are not accepted for disposal at Vista Landfill.

(9) Special wastes for waste-to-energy facilities. No person who knows or who should know of the nature of such solid waste shall dispose of lead-acid batteries, mercury-containing devices, or spent mercury-containing lamps in any waste-to-energy facility.

Not Applicable.

(10) Liquids restrictions.

(a) Non-containerized liquid waste shall not be placed in solid waste disposal units which accept household waste or construction and demolition debris for disposal unless:

1. The liquid waste is household waste other than septic waste; or

Not Applicable.

2. The liquid waste is leachate or gas condensate derived from the solid waste disposal unit, or byproducts of the treatment of such leachate or gas condensate, and the solid waste disposal unit is lined and has a leachate collection system.

(b) Containers holding liquid waste shall not be placed in a solid waste disposal unit unless:

Not Applicable.

1. The container is a small container similar in size to that normally found in household waste;

Not Applicable.

2. The container is designed to hold liquids for use other than storage; or

Not Applicable.

3. The waste is household waste.

Not Applicable.

(c) Containers or tanks twenty gallons or larger in capacity shall either have one end removed or cut open, or have a series of punctures around the bottom to ensure the container is empty and free of residue. The empty container or tank shall be compacted to its smallest practical volume for disposal.

Not Applicable.

(11) (a) Used oil and oily wastes. Except as provided in paragraph (b) of this subsection, no person may mix or commingle used oil with solid waste that is to be disposed of in landfills or directly dispose of used oil in landfills.

Not Applicable.

(b) Oily wastes, sorbents or other materials used for maintenance or to clean up or contain leaks, spills or accidental releases of used oil, and soils contaminated with used oil as a result of spills or accidental releases are not subject to the prohibition in paragraph (a) of this subsection.

(12) Yard trash. The prohibitions of this section apply to the storage, processing, or disposal of yard trash, except that paragraphs (2)(b) and (e) of this section are modified so that the following setback distances shall apply:

(a) 100 feet from off-site potable water wells, no setback required from on-site water wells; and

The subject facility is not within 100-feet from off-site potable water wells.

(b) 50 feet from water bodies.

A 50-foot setback yard waste area will be maintained.

(13) Tanks. The prohibitions in subsection (2) of this section do not apply to the storage or treatment of solid waste in tanks which meet the criteria of Chapter 62-761 or subsection 62-701.400(6), F.A.C. Instead, no such storage tank shall be installed within 500 feet of any existing community water supply system or any existing non-transient non-community water supply system, nor shall any tank be installed within 100 feet of any other existing potable water supply well.

No storage tanks are installed within 500-feet of any existing community water supply system or any existing non-transient non-community water supply system, nor are any storage tanks installed within 100 feet of any other existing potable water supply well.

(14) CCA treated wood. CCA treated wood shall not be incorporated into compost or made into mulch, decorative landscape chips or any other wood product that is applied as a ground cover, soil or soil amendment. CCA treated wood may be ground and used as initial cover on interior slopes of lined solid waste disposal facilities provided it meets the criteria of subsection 62-701.200(53), F.A.C. CCA treated wood shall not be disposed of through open burning or through combustion in an air curtain incinerator.

Vista Landfill will not process CCA-treated wood into compost or make into mulch, decorative landscape chips, or any other wood product that is applies as ground cover, soil, or soil amendment (see Section 3.2 and Appendix G of the Operation Plan).

(15) Dust. The owner or operator of a solid waste management facility shall not allow the unconfined emissions of particulate matter in violation of paragraph 62-296.320(4)(c), F.A.C.

Vista Landfill will not allow the unconfined emissions of particulate matter in violation of paragraph 62-296.320(4)(c), F.A.C. (see Section 2.11 of the Operation Plan).

(16) Indoor storage. The prohibitions in subsection (2) of this section do not apply to the storage or processing of solid waste indoors, provided that the indoor storage area has an impervious surface and a leachate collection system. For the purposes of this subsection, an impervious surface means either a poured concrete pad having a minimum thickness of four inches, or an asphalt concrete paving with both a minimum thickness of one and one-half inches and with an additional component to restrict leaching to ground water such as a soil cement sub-base, an epoxy seal or a geomembrane.

Not Applicable.

(17) Storage in vehicles or containers. The prohibitions in subsection (2) of this section do not apply to the storage of solid waste in an enclosed or covered vehicle or container, provided that such vehicle or container has either been unloaded or moved over public highways within the previous seven days, and provided also that reasonable efforts have been made to minimize leakage from the vehicle or container.

Vista Landfill does not store solid waste in vehicles.

(18) Existing facilities. Those portions of facilities which were constructed prior to May 27, 2001, remain subject to the prohibitions that were in effect at the time the permit authorizing construction was issued. Lateral expansions of such facilities remain subject to the prohibitions that were in effect at the time the permit authorizing the lateral expansion was issued. For example, portions of facilities constructed prior to May 19, 1994 were subject to the prohibition against storing or disposing of solid waste within 500 feet of an existing or approved shallow water supply well, but are not subject to the prohibitions of paragraph (2)(b) of this section. However, lateral expansions of such facilities which occurred after May 19, 1994 are subject to the prohibitions of paragraph (2)(b) of this section.

Acknowledged.

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Proof of Ownership

Parcel Information - Tax Year 2011

Parcel Information

Parcel Id	**28-21-28-0000-00-009**
Location	242 W KEENE RD
Municipality	APOPKA FLORIDA
Millage Rate	17.2623
Property Use	9900 - NON-AGRICULTURAL ACREAGE

Name/Address Information

Property Name	WM VISTA LANDFILL
Name(s)	BUTTREY DEVELOPMENT TWO LLC
Mailing Address	C/O FLORIDA GROUP ACCOUNTING CTR PO BOX 1450 CHICAGO, IL 60690-1450

Property Description

E1/2 OF NW1/4 OF NE1/4 & NE1/4 OF NE1/4 SEC 28-21-28 SEE 2452/537 & 3062/1719 & 3070/664

Sales Information

Instrument Number	OR Book/Page (Deeds)	Sale Date	Sale Amount	Deed Code	Vac/Imp Code
20020179768	06501/6286	4/10/2002	$113,900	WM	Vacant
19980543812	05649/4804	12/30/1998	$258,200	WM	Vacant

Value Summary

Description	2011 Working Values	2010 Certified Values
Method Of Valuation	Market	Market
Number of Buildings	1	1
Building(s) Value	$43,455	$44,842
Extra Feature Value	$0	$0
Market Land Value	$1,090,802	$1,090,802
Ag Classification Granted	No	No
Ag AND Non-Ag Land Value	$1,090,802	$1,090,802
Total Just Value	$1,134,257	$1,135,644
Portability Amount Applied	No - $0	No - $0
Save Our Homes Savings Applied	No - $0	No - $0
Assessed Value	$1,134,257	$1,135,644
Exemptions Applied	No	No

Working values may not reflect exemptions applied for prior to January 1st

Exemptions

Description	2011 Working	2010 Certified
Original Homestead Exemption Applied to All Millages	$0	$0
Amendment 1 Additional Homestead Exemption Amount	$0	$0
Additional Exemptions Applied to All Millages	$0	$0
Limited Income Senior Exemption Applied	No	No

2011 Taxable Value and Estimate of Proposed Taxes

Taxing Authority	Assessed Value	Exempt Amount	Taxable Value	Millage Rate	Ad Valorem Taxes
PUBLIC SCHOOLS: BY STATE LAW (RLE)	$1,134,257	$0	$1,134,257	5.3960	$6,120.45
PUBLIC SCHOOLS: BY LOCAL BOARD	$1,134,257	$0	$1,134,257	2.4980	$2,833.37
ORANGE COUNTY (GENERAL)	$1,134,257	$0	$1,134,257	4.4347	$5,030.09
CITY OF APOPKA	$1,134,257	$0	$1,134,257	3.5166	$3,988.73
LIBRARY - OPERATING BUDGET	$1,134,257	$0	$1,134,257	0.3748	$425.12
ST JOHNS WATER MANAGEMENT	$1,134,257	$0	$1,134,257	0.4158	$471.62
				16.6359	**$18,869.38**

2011 Non-Ad Valorem Assessments

Levying Authority	Assessment Description	Units	Rate	Assessment
CITY OF APOPKA	APOPKA STORM - DRAINAGE - (407)703-1731	45.00	$1.00	$45.00
				$45.00

2011 Estimated Gross Tax Total: $18,914.38

Building Information

Important Information	Structure

Important Information		Structure			
Model Code:	04 - Commercial	Actual Year Built:	2008	Gross Area:	4945 sqft
Type Code:	1702 - MODULAR OFFICE	Beds:	0	Living Area:	560 sqft
Building Value:	$43,455	Baths:	0.0	Exterior Wall:	PREFABRICATED WOOD PANEL/MASONITE
Estimated New Cost:	$46,229	Floors:	1		
				Interior Wall:	DRYWALL

Actual Year Built does not reflect subsequent building improvements.

Update Pending - all building details are proposed and may change when finalized.

Land Information

Item	Land Use Code	Zoning*	Land Units	Unit Price	Land Value	Class Unit Price	Land Class Value
1	9900 - NON-AGRICULTURAL ACREAGE	A-1(ZIP)	53.51 ACRE(S)	$20,000.00	$1,070,200	$0.00	$1,070,200
2	1702 - MODULAR OFFICE	A-1(ZIP)	1 ACRE(S)	$20,000.00	$20,000	$0.00	$20,000
3	9600 - WASTE LAND	A-1(ZIP)	6.02 ACRE(S)	$100.00	$602	$0.00	$602

**Please contact your local Zoning Agency for the latest zoning information.*

Save Our Homes Benefit over 5 Years

YEAR	2007	2008	2009	2010	2011
SOH Savings: (value not taxed)	$0.00	$0.00	$0.00	$0.00	$0.00
Value Change: 9.5% increase in Just Market Value within last 5 years.*					

Just Market Value: The most probable sale price of a property in terms of money in a competitive and open market, assuming that the buyer and seller are acting prudently, knowledgeably and for self-interest, allowing sufficient time for the sale, and assuming that the transaction is not affected by undue stimuli or duress.

* A substantial increase or decrease in value may be due to changes in the property, such as improvements or demolition.

This Data Printed on 02/02/2011 and System Data Last Updated on 02/01/2011

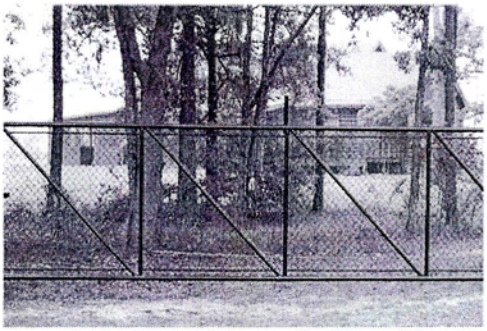
Parcel Information - Tax Year 2011

Parcel Information

Parcel Id	**28-21-28-0000-00-019**
Location	2613 MCQUEEN RD
Municipality	APOPKA FLORIDA
Millage Rate	17.2623
Property Use	9900 - NON-AGRICULTURAL ACREAGE

Name/Address Information

Property Name	VISTA LAND FILL
Name(s)	BUTTREY DEVELOPMENT THREE LLC
Mailing Address	PO BOX 1450 CHICAGO, IL 60690-1450



282128000000019 04/26/2006

Property Description

THE SW1/4 OF NW1/4 OF NE1/4 & SW1/4 OF NE1/4 (LESS W 30 FT FOR RD) OF SEC 28-21-28

Sales Information

Instrument Number	OR Book/Page (Deeds)	Sale Date	Sale Amount	Deed Code	Vac/Imp Code
20000248307	06024/3121	6/14/2000	$137,000	WD	Improved
19944787918	04704/4722	2/18/1994	$79,900	SW	Improved
19934622619	04632/0285	9/30/1993	$100	SW	Improved
19924206832	04458/1096	9/4/1992	$0	CT	Improved
19842241052	03588/0064	12/1/1984	$28,900	WD	Vacant

Value Summary

Description	2011 Working Values	2010 Certified Values
Method Of Valuation	Market	Market
Number of Buildings	0	0
Building(s) Value	$0	$0
Extra Feature Value	$1,000	$1,000
Market Land Value	$997,600	$997,600
Ag Classification Granted	No	No
Ag AND Non-Ag Land Value	$997,600	$997,600
Total Just Value	$998,600	$998,600
Portability Amount Applied	No - $0	No - $0
Save Our Homes Savings Applied	No - $0	No - $0
Assessed Value	$998,600	$998,600
Exemptions Applied	No	No

Working values may not reflect exemptions applied for prior to January 1st

Exemptions

Description	2011 Working	2010 Certified
Original Homestead Exemption Applied to All Millages	$0	$0
Amendment 1 Additional Homestead Exemption Amount	$0	$0
Additional Exemptions Applied to All Millages	$0	$0
Limited Income Senior Exemption Applied	No	No

2011 Taxable Value and Estimate of Proposed Taxes

Taxing Authority	Assessed Value	Exempt Amount	Taxable Value	Millage Rate	Ad Valorem Taxes
PUBLIC SCHOOLS: BY STATE LAW (RLE)	$998,600	$0	$998,600	5.3960	$5,388.45

Taxing Authority	Assessed Value	Exempt Amount	Taxable Value	Millage Rate	Ad Valorem Taxes
PUBLIC SCHOOLS: BY LOCAL BOARD	$998,600	$0	$998,600	2.4980	$2,494.50
ORANGE COUNTY (GENERAL)	$998,600	$0	$998,600	4.4347	$4,428.49
CITY OF APOPKA	$998,600	$0	$998,600	3.5166	$3,511.68
LIBRARY - OPERATING BUDGET	$998,600	$0	$998,600	0.3748	$374.28
ST JOHNS WATER MANAGEMENT	$998,600	$0	$998,600	0.4158	$415.22
				16.6359	**$16,612.62**

2011 Non-Ad Valorem Assessments

Levying Authority	Assessment Description	Units	Rate	Assessment
CITY OF APOPKA	APOPKA STORM - DRAINAGE - (407)703-1731	15.00	$1.00	$15.00
				$15.00

2011 Estimated Gross Tax Total: $16,627.62

Land Information

Item	Land Use Code	Zoning*	Land Units	Unit Price	Land Value	Class Unit Price	Land Class Value
1	9900 - NON-AGRICULTURAL ACREAGE	A-1(ZIP)	49.88 ACRE(S)	$20,000.00	$997,600	$0.00	$997,600

**Please contact your local Zoning Agency for the latest zoning information.*

Extra Feature Information

Item	Description	Date Built	Units	Unit Price	XFOB Value
	CARPORT 1	12/31/2009	1	$500.00	$500
	SHED	12/31/2009	1	$500.00	$500

Save Our Homes Benefit over 5 Years

YEAR	2007	2008	2009	2010	2011
SOH Savings: (value not taxed)	$0.00	$0.00	$0.00	$0.00	$0.00
Value Change: 47.4% decrease in Just Market Value within last 5 years.*					

Just Market Value: The most probable sale price of a property in terms of money in a competitive and open market, assuming that the buyer and seller are acting prudently, knowledgeably and for self-interest, allowing sufficient time for the sale, and assuming that the transaction is not affected by undue stimuli or duress.

* A substantial increase or decrease in value may be due to changes in the property, such as improvements or demolition.

This Data Printed on 02/02/2011 and System Data Last Updated on 02/01/2011

Attachment 3:

Engineering Drawings, Current Aerial Photograph, and Topographic Survey

PICKETT
SURVEYING & PHOTOGRAMMETRY

NOTE: THIS REPORT AND ACCOMPANYING DISK, ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

PICKETT & ASSOCIATES PROJECT NO.: 16369-1
TITLE/TYPE OF SURVEY: Topographic and Special Purpose
DATE OF SURVEY: This survey is based on aerial photography flown 12/27/10
SUBJECT: Vista Landfill
CLIENT: Waste Management of Florida, Inc

ACCURACY STATEMENT: The following stated plus or minus tolerances encompass a minimum of 90% of the difference between photogrammetrically measured values and any ground truth of all well-identified features. Mapped features will meet or exceed the Florida Minimum Technical Standards.

VERTICAL: Contours may be measured to an estimated vertical positional accuracy of 1.0'. Spot elevations and well-identified features have been measured to an estimated vertical positional accuracy of 0.5'.

HORIZONTAL: Well-identified features have been measured to an estimated horizontal positional accuracy of 3.33', as per Florida Minimum Technical Standards. All measurements are in U.S. Survey Feet.

MAP PLOTTING: This map is intended to be displayed at a scale of 1" = 100' (1:1200) or smaller.

DATUM:
HORIZONTAL: Coordinates were established by Land Air Mapping and are based the Florida State Plane East Zone NAD83/90 datum.

VERTICAL: Elevations were established by Land Air Mapping and are based on the National Geodetic Vertical Datum of 1929.

Control Points Used:

Pt#	Easting	Northing	Elevation
124	490459.70	1564427.20	81.5
308	490117.80	1565836.80	100.1
319	491778.50	1565820.60	88.8
332	492859.10	1565841.70	105.7
331	492804.00	1565370.40	106.9
328	491450.50	1563256.70	103.4
333	491419.00	1561845.50	92.2

Pickett & Associates, Inc.
475 South First Avenue
Bartow, Florida 33830

Business ~ 863.533.9095
Fax ~ 863.534.1464
email@pickett-inc.com

Pt#	Easting	Northing	Elevation (cont)
322	490129.70	1561914.10	119.2
329	490292.30	1563197.10	89.6
323	490116.90	1564574.30	102.5
127	492810.90	1564503.00	96.3
325	491480.80	1564501.60	91.6
330	490692.20	1565512.20	105.3
6	490438.99	1565075.30	123.0
309	490116.80	1561754.90	116.7

Measurement Methods:

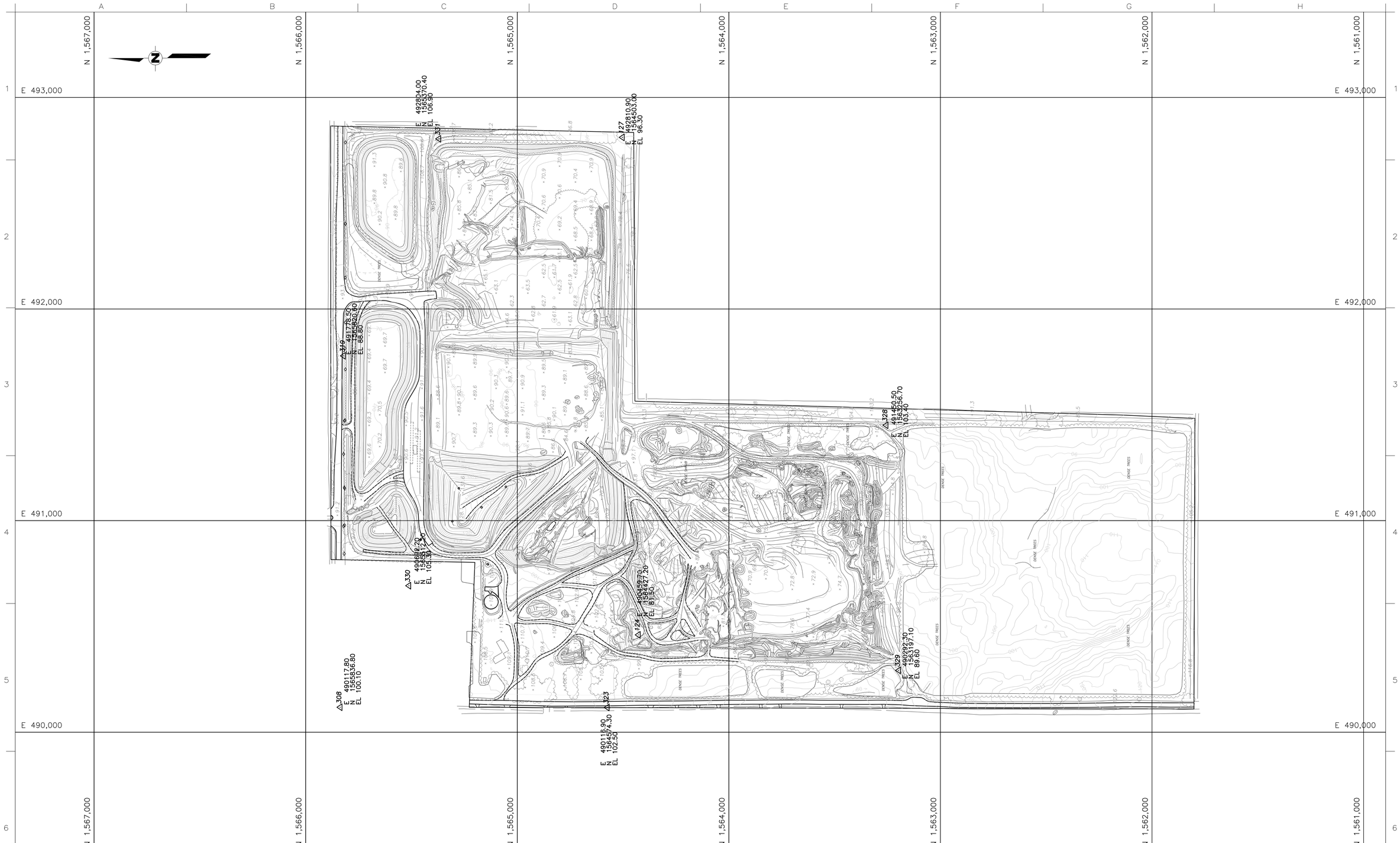
In areas where vegetation makes the ground difficult to determine contours are shown dashed and do not meet the above stated accuracy. This map is limited to those features visible on aerial photography. Color aerial photography was acquired at a negative scale of 1:7920, scanned at a 15-micron resolution and mapped using softcopy photogrammetric techniques. Control points were extracted from mapping provided by Client, performed by previous survey consultant. All measurements are in U.S. Survey Feet.

Limitations:

This mapping should be used for preliminary design work only and should not replace an actual field survey where the required accuracy is greater than the accuracy stated in this report. No responsibility is assumed for areas outside the contracted scope or for the ground control and previous mapping provided by Land Air Mapping, Inc. and Tech Map Inc., Peachtree City, Georgia.

T. JEFFREY YOUNG, PSM, CP
FLORIDA REGISTRATION NO. 5440
PICKETT AND ASSOCIATES, INC.
FLORIDA REGISTRATION NO. 364

SURVEY DATE



200 0 100 200 400

(IN FEET)
1 inch = 200 ft.

WASTE MANAGEMENT

THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF WASTE MANAGEMENT ("WM"). THIS DOCUMENT IS, AND CONTAINS, CONFIDENTIAL AND TRADE SECRET INFORMATION OF WM. REPRODUCTION, DISCLOSURE OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACTOR OR AS EXPRESSLY AUTHORIZED IN WRITING BY WM. THIS DOCUMENT IS LOANED FOR LIMITED PURPOSES ONLY, AND REMAINS THE PROPERTY OF WM. IT IS TO BE RETURNED UPON REQUEST AND IN ALL EVENTS UPON COMPLETION OF THE PURPOSE OF THE LOAN.

Revisions

No.	Description	Date	By

Approved By:
Checked By:
Drawn By:

Project Location:
VISTA LANDFILL

Drawing Title
Drawing Title
Drawing Title

Drawing No.	FL17-2486-TOP-01
Scale:	1" = 200'
Sheet Number:	1
Date:	December 27, 2010

hsagolden
engineering environmental solutions

100 East Pine Street
Suite 605
Orlando, FL 32801
Phone: 407.649.5475
Fax: 407.649.6582
hsagolden.com

February 16, 2011

Mr. F. Thomas Lubozynski, P.E.
Waste Program Administrator
Florida Department of Environmental Protection
Central District Office
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Re: Waste Management, Inc. of Florida
Orange County - SW WACS # 87081
Vista Landfill, Class III
Permit No. S048-0165969-015
HSA Golden Project Number 09-574.020

Dear Mr. Lubozynski:

The engineering plans used in this submittal are not signed and sealed by a professional engineer licensed in Florida. However, the Drawings were previously signed and sealed by Geosyntec Consultants and approved by the Department. The Drawings are numbered 1 through 22 and are dated July 27, 2007 to November 30, 2007. The Drawings represent the current configuration of the facility, such as phasing plan, final grading plan, base grades and landfill cross section and details. I certify that the above listed plans represent the current configuration of the facility and did not change.

Sincerely,

HSA GOLDEN

David L. Leggett
2-16-2011

David L. Leggett, P.E.
Principal Engineer

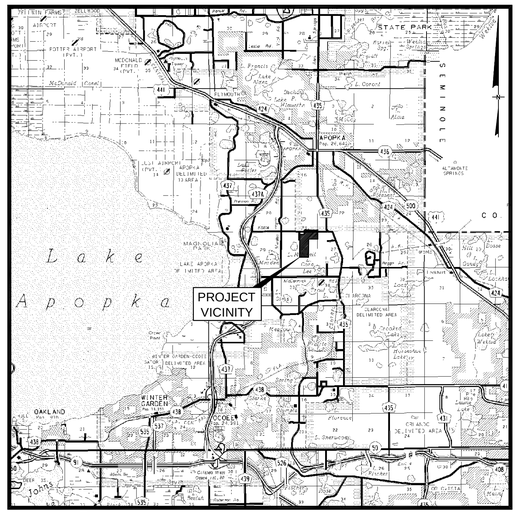
PERMIT MODIFICATION DRAWINGS

VISTA CLASS III LANDFILL

242 WEST KEENE ROAD

APOPKA, FLORIDA 32703 USA

JULY 2007 (REVISED 30 NOVEMBER 2007)



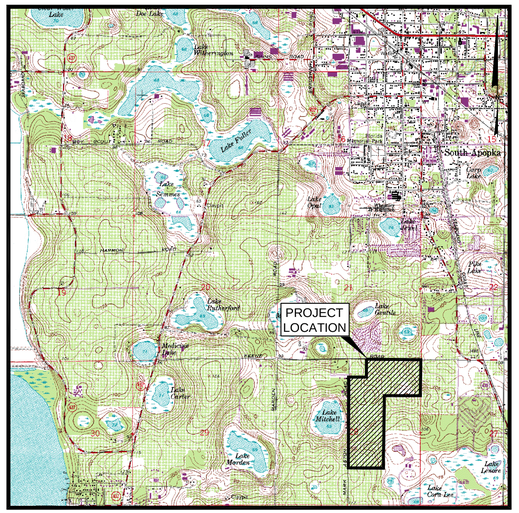
VICINITY MAP

0 2 4

SCALE IN MILES

LIST OF DRAWINGS

SHEET	TITLE	REVISION
1	TITLE SHEET	A
2	AERIAL PHOTOGRAPH	
3	EXISTING CONDITIONS	
4	SITE DEVELOPMENT PLAN	
5	BASE GRADING PLAN	A
6	LEACHATE COLLECTION SYSTEM PLAN	A
7	FINAL COVER SYSTEM GRADING PLAN	
8	LANDFILL CROSS SECTIONS	
9	LANDFILL DEVELOPMENT PHASING PLAN I	A
10	LANDFILL DEVELOPMENT PHASING PLAN II	
11	LANDFILL DEVELOPMENT PHASING PLAN III	
12	CONCEPTUAL STORM WATER MANAGEMENT PLAN	
13	ENVIRONMENTAL MANAGEMENT PLAN	
14	LEACHATE COLLECTION SUMP PLAN AND DETAILS	
15	LEACHATE COLLECTION SYSTEM DETAILS	
16	PERIMETER BERM AND ACCESS ROAD DETAILS	
17	LINER SYSTEM DETAILS	
18	FINAL COVER SYSTEM DETAILS	
19	STORM WATER MANAGEMENT DETAILS	
20	LEACHATE MANAGEMENT SYSTEM PROCESS DIAGRAM LEGEND	
21	LEACHATE MANAGEMENT SYSTEM MECHANICAL FLOW DIAGRAM	
22	LEACHATE MANAGEMENT SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM	

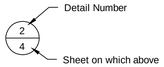


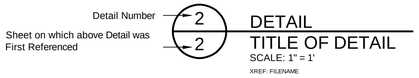
LOCATION MAP

0 0.5 1.0

SCALE IN MILES

DETAIL IDENTIFICATION LEGEND





Example: Detail Number 2 Presented on Sheet No. 4 was Referenced for the First Time on Sheet No. 2.

Note: Above System also applies to Section Identifications.

PREPARED FOR:

VISTA LANDFILL, L.L.C.
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703 USA
PH: 407.886.2920

PREPARED BY:

GEOSYNTEC CONSULTANTS
14055 RIVEREDGE DRIVE - SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP
A	30-NOV-07	RAI #2 (CITY OF APOPKA), REVISED CELL 4 BASE GRADING.	JWO	JDQ

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: TITLE SHEET

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

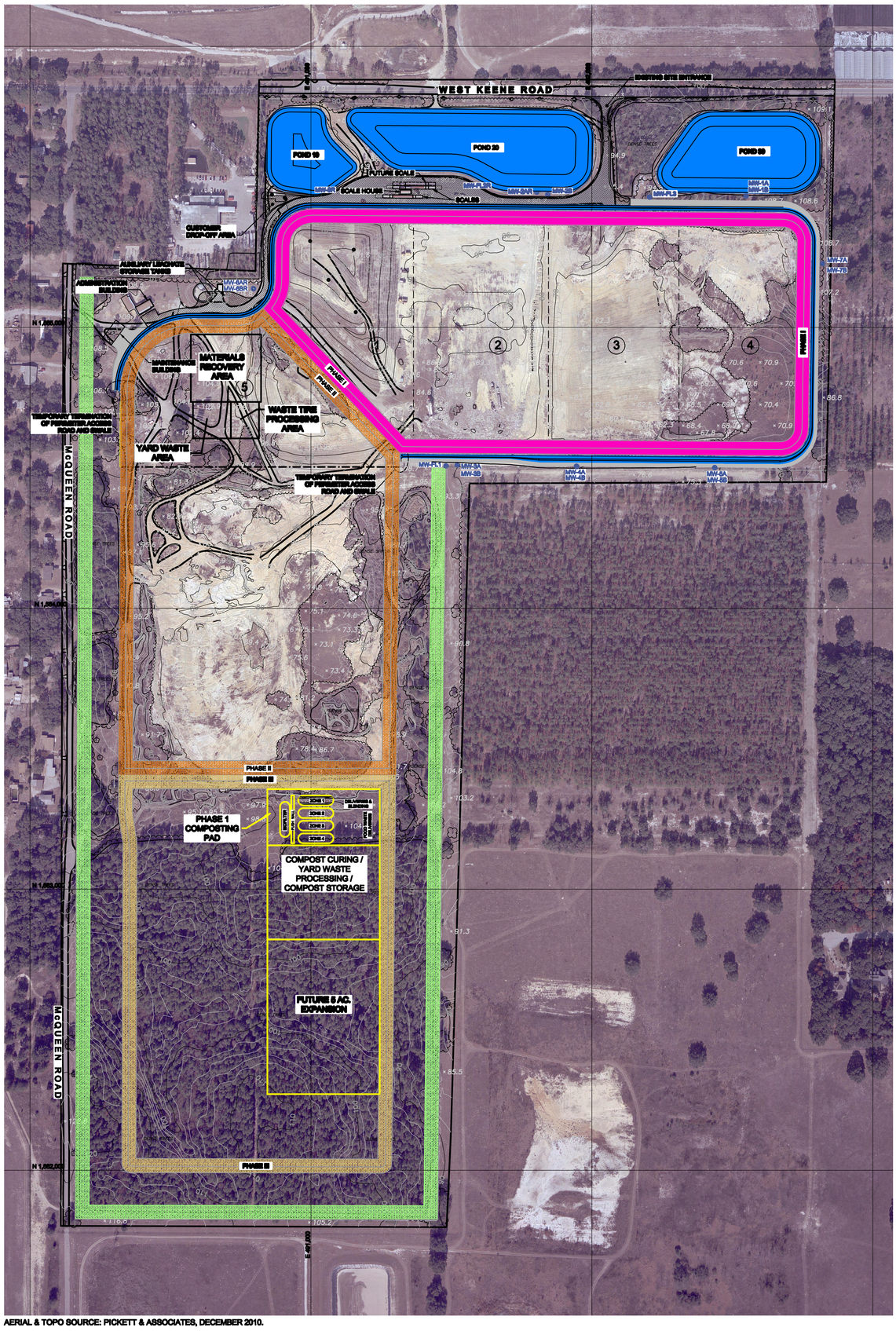
SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P011
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		1 OF 22

[R:\FL0229\1229.02\DWGS\REVIS\1229.02P011.DWG (JDQ\November 2007 - 11X23-A4) CAD]



AERIAL & TOPO SOURCE: PICKETT & ASSOCIATES, DECEMBER 2010.

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 60 — TOP OF PREPARED SUBBASE
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

N

0 100 200
DISTANCE IN FEET

					BY	DATE
				DESIGNED	JG	8/2010
				DRAWN	TBS	8/2010
				CHECKED	DL	8/2010
DATE	REVISIONS	REVISED	CHECKED	FILE: 09-574.020-SITE.dwg		

DATE

DAVID L. LEGGETT, P.E.
P.E. No. 70882, FL
HSA GOLDEN FBPE No. 9915

hsagolden engineering environmental solutions
100 EAST PINE STREET, SUITE 605
ORLANDO, FL 32801
P: 407.649.5475 F: 407.649.6582
HSAGOLDEN.COM

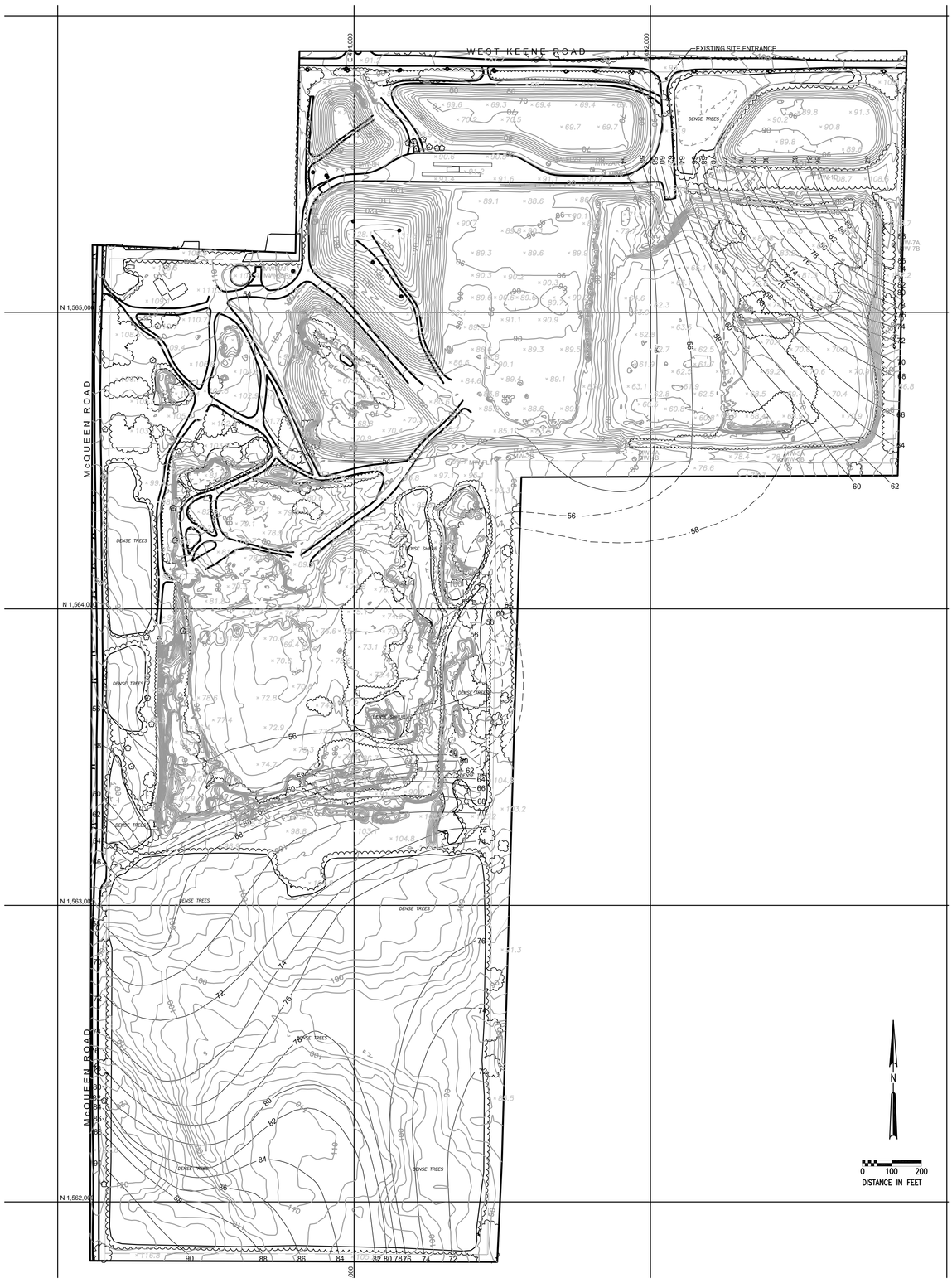
SHEET 2 OF 22

PROJECT NO. 09-574.020

SITE PLAN

VISTA LANDFILL, CLASS III FACILITY
APOPKA, FLORIDA

FEBRUARY 2011



LEGEND

	APPROXIMATE PROPERTY BOUNDARY
80	COMPOSITE SEASONAL HIGH GROUNDWATER CONTOUR (NOTE 6)
60	EXISTING GROUND CONTOUR (SEE NOTE 1)
	TREE LINE
	UNIMPROVED / DIRT ROAD
	IMPROVED / PAVED ROAD
	FENCE
86.3	SPOT ELEVATION
MW-FL3	EXISTING GROUNDWATER MONITORING WELL

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL. WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.

2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.

3. DATE OF PHOTOGRAPHY: 18 MARCH 2007

4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

GENERAL NOTES:

5. GROUNDWATER MONITORING DATA SHOWN HEREON WAS OBTAINED FROM A SURVEY PREPARED BY PICKETT AND ASSOCIATES DATED 16 FEBRUARY 2007

6. GROUNDWATER TABLE CONTOURS ARE BASED ON SEASONAL HIGH WATER TABLE ELEVATIONS PRESENTED IN THE FOLLOWING REPORTS PREPARED BY DEVO ENGINEERING: "ESTIMATE OF SEASONAL HIGH GROUNDWATER ELEVATION" (DATED 21 OCTOBER 2002), "SUPPLEMENT # 1 TO REPORT DATED 21 OCTOBER 2002" (DATED 21 APRIL 2003), "WATER TABLE ESTIMATES AND PROPOSED BASE GRADE ELEVATIONS - BD4 SITE" (DATED 10 FEBRUARY 2004).

7. EXISTING TOPO PROVIDED BY PICKETT AND ASSOICATES, BARTOW FLORIDA, 12/27/2010

8. BASE DRAWING INFORMATION PROVIDED BY GEOSYNTEC CONSULTANTS, TAMPA FLORIDA.

SHEET 3 OF 22

PROJECT NO. 09-574.020

EXISTING CONDITIONS

VISTA LANDFILL, CLASS III FACILITY
APOPKA, FLORIDA

DATE	REVISIONS	REVISED	CHECKED

	BY	DATE
DESIGNED	JG	8/2010
DRAWN	TBS	8/2010
CHECKED	DL	8/2010

FILE: 09-574.020-EXISTING.dwg

DATE

DAVID L. LEGGETT, P.E.
P.E. No. 70882, FL
HSA GOLDEN FBPE No. 9915

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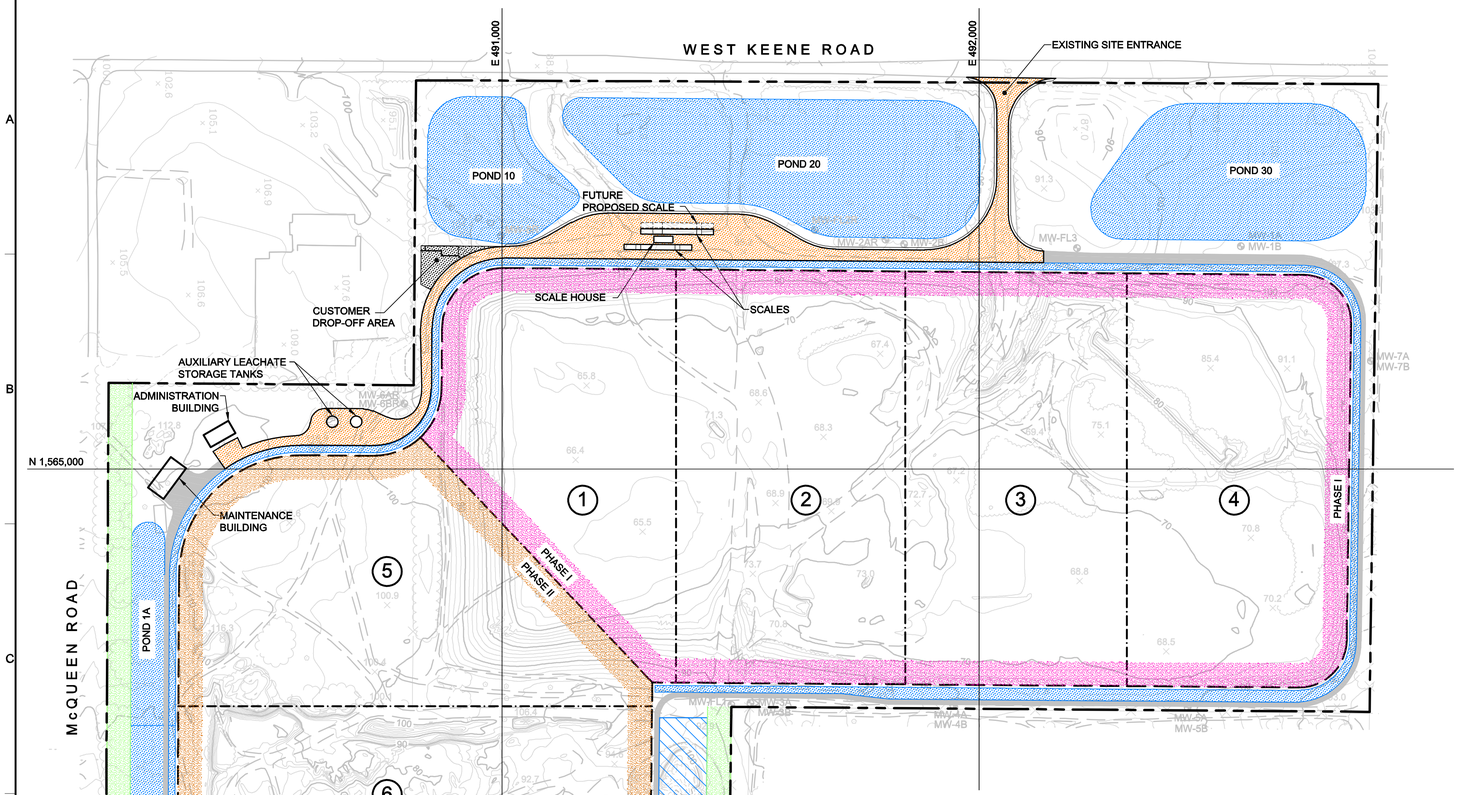
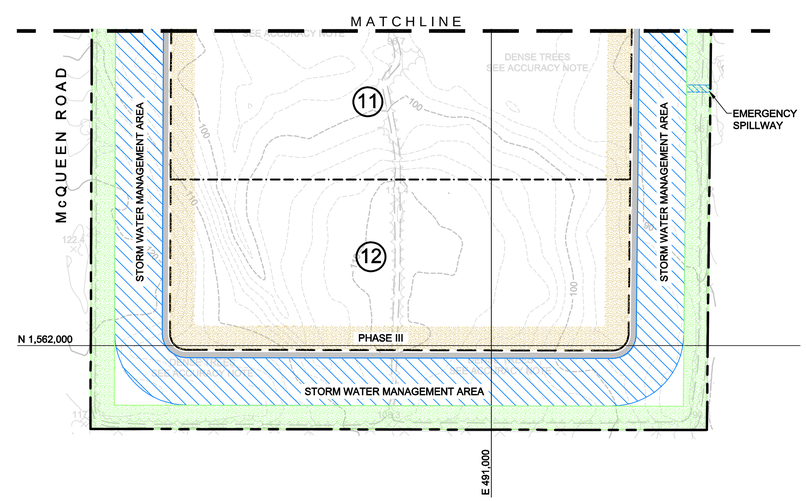
P: 407.649.5475 F: 407.649.6582
HSAGOLDEN.COM





NORTH

150 75 0 150
SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- SPOT ELEVATION
- EXISTING GROUNDWATER MONITORING WELL
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND / SWALE
- STORM WATER MANAGEMENT AREA
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT
- CELL NUMBER

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: SITE DEVELOPMENT PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P040
REVIEWED BY:	KBT	DRAWING NO.:	4 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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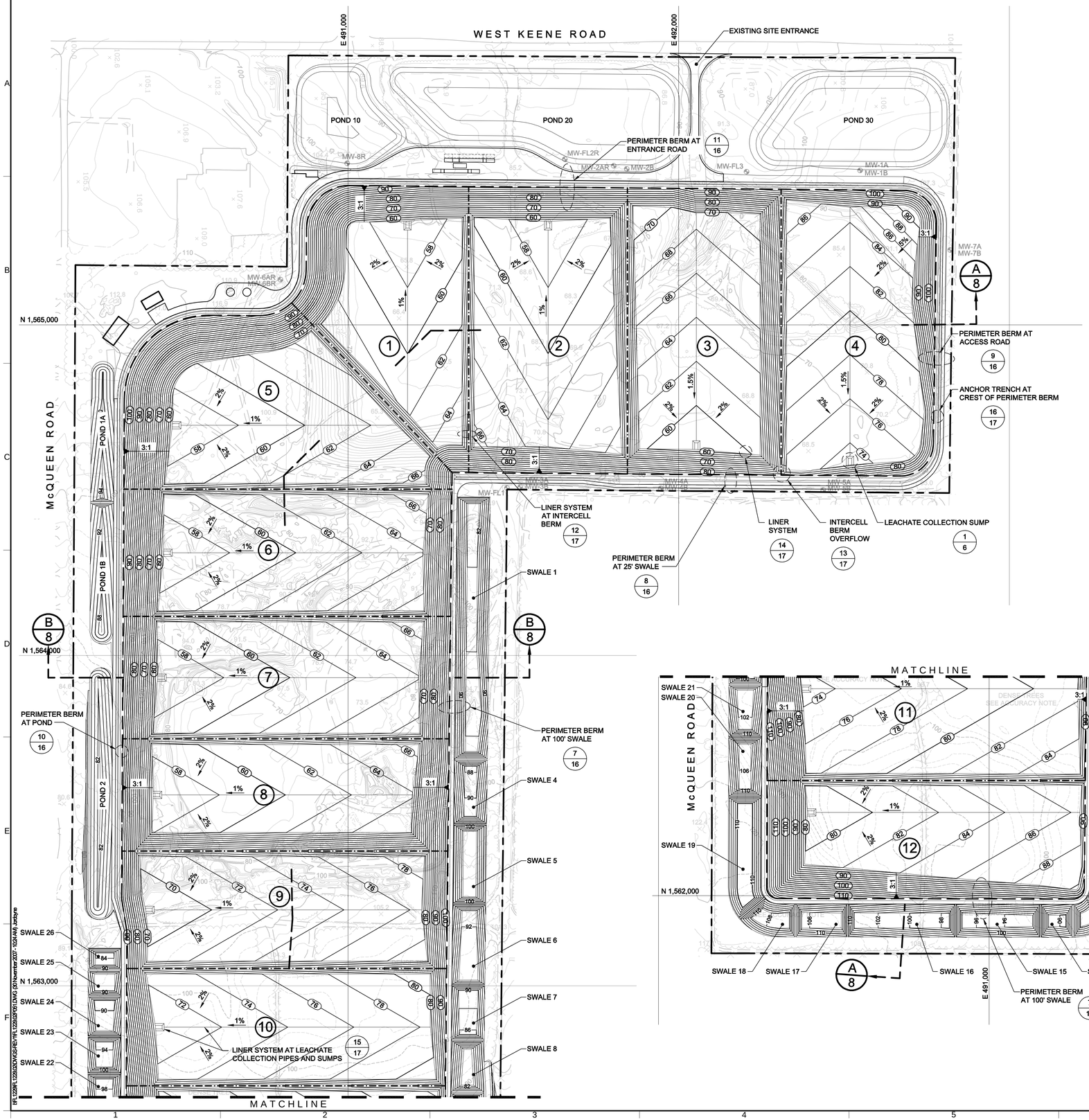

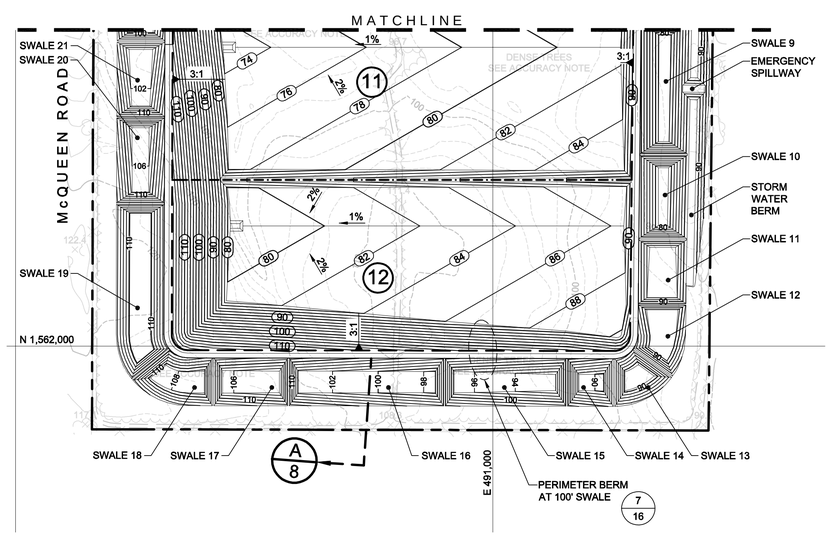

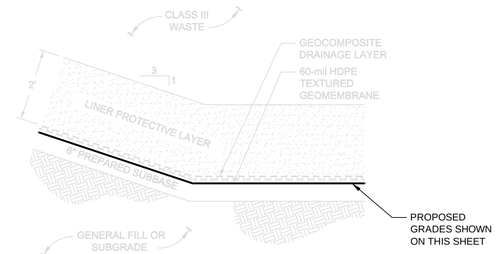

LINER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229.02X037

NORTH

150 75 0 150

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 60 — TOP OF PREPARED SUBBASE
- 90 — FINISH GRADE CONTOUR
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
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3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP
A	30-NOV-07	RAI #2 (CITY OF APOPKA), REVISED CELL 4 BASE GRADING.	JWO	JDQ

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: BASE GRADING PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P051
REVIEWED BY:	KBT	DRAWING NO.:	5 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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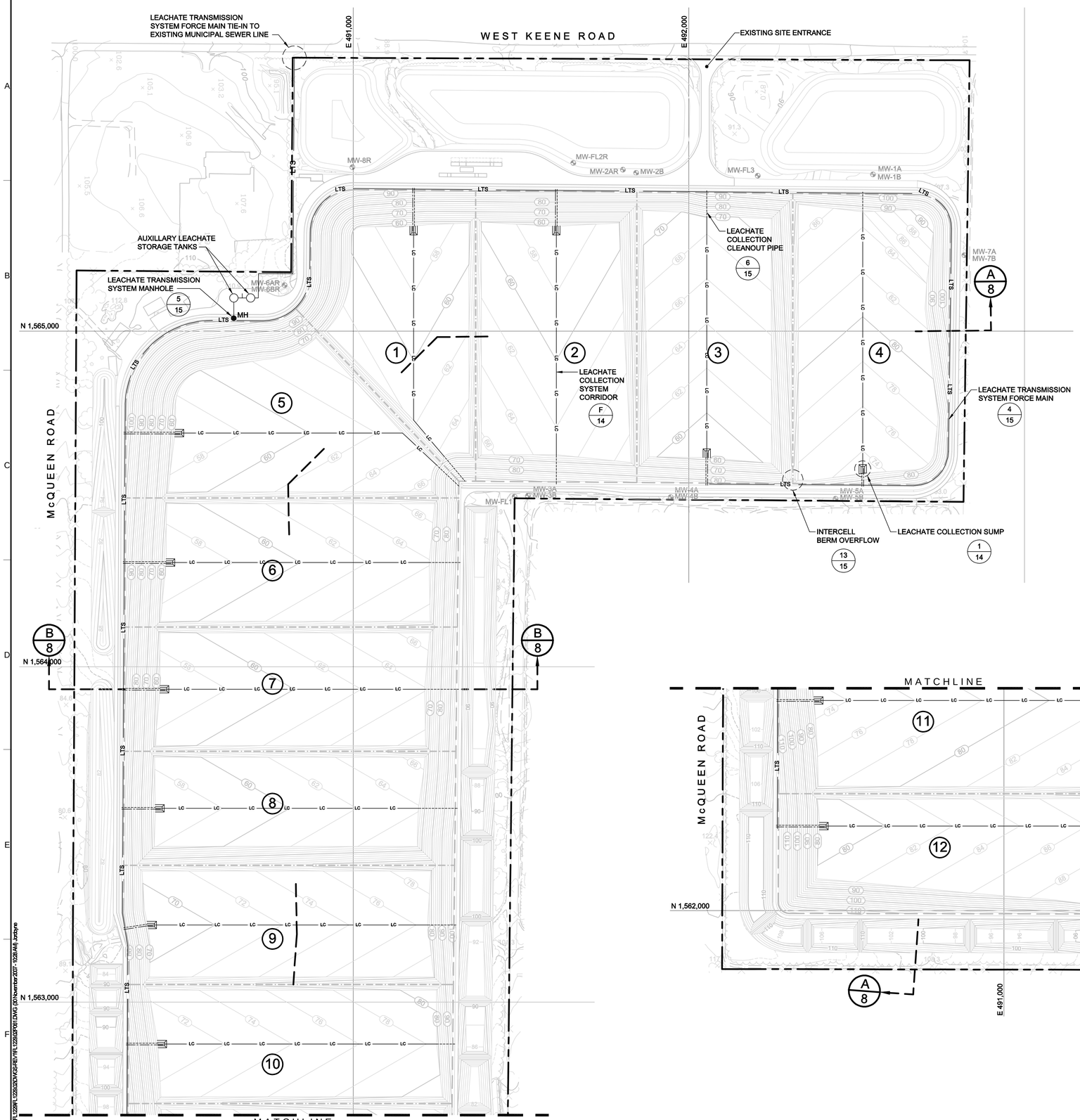

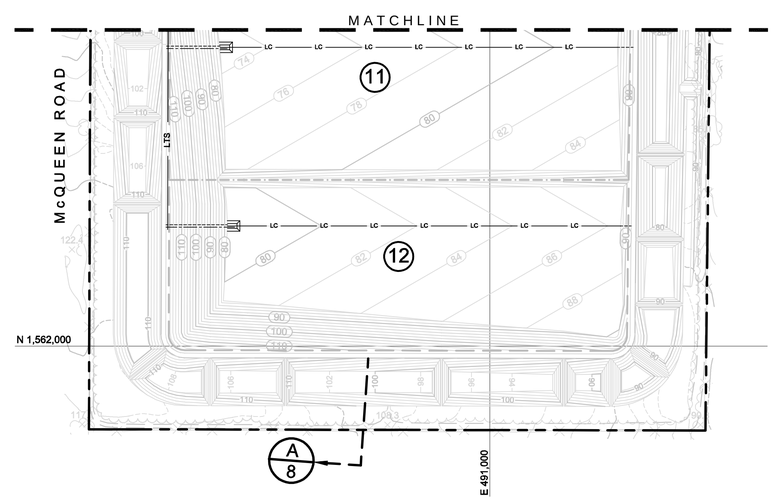

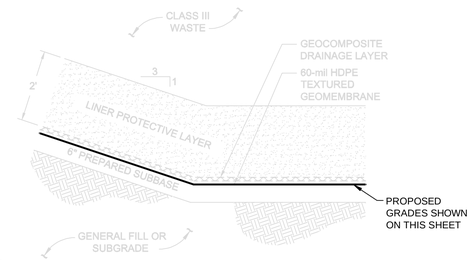

LINER SYSTEM KEY DETAIL

SCALE: NTS
XREF: FL1229.02X037

NORTH

150 75 0 150
SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER
- 60 — TOP OF PREPARED SUBBASE
- LC — LEACHATE COLLECTION PIPE
- LEACHATE RISER PIPE
- LEACHATE COLLECTION CLEANOUT RISER PIPE
- LTS — LEACHATE TRANSMISSION SYSTEM FORCE MAIN
- MH — LEACHATE TRANSMISSION SYSTEM MANHOLE

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
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3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP
A	30-NOV-07	RAI #2 (CITY OF APOPKA), REVISED CELL 4 BASE GRADING.	JWO	JDQ

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LEACHATE COLLECTION SYSTEM PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P061
REVIEWED BY:	KBT	DRAWING NO.:	6 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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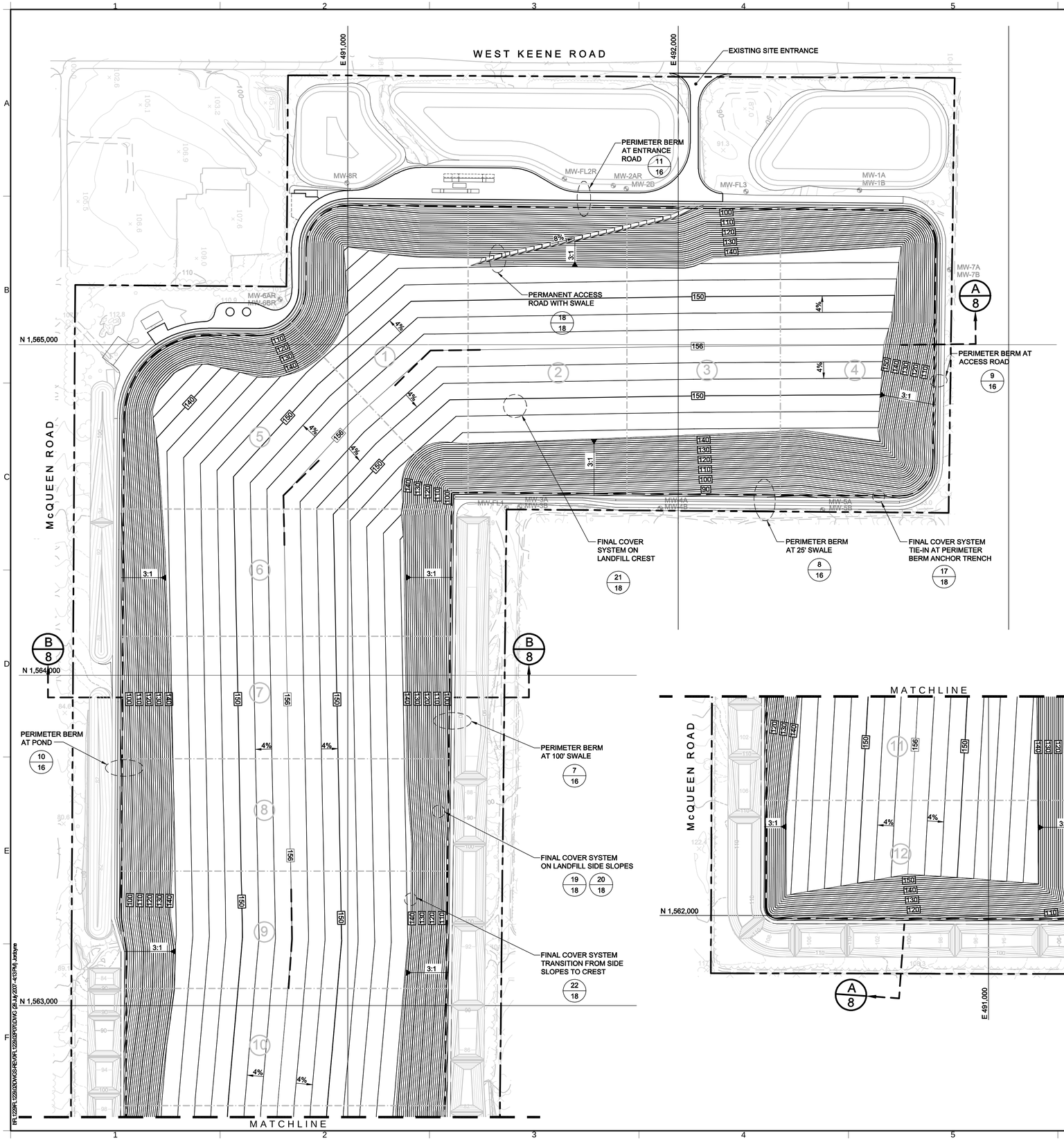
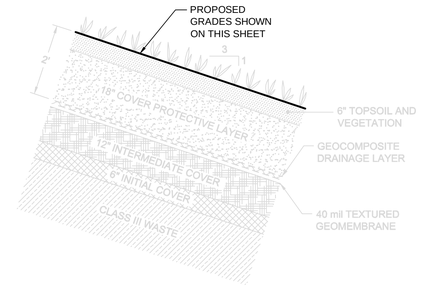
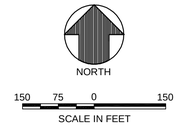




FINAL COVER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229.02X037



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 120 — FINAL COVER SYSTEM CONTOUR
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL. WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
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3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: FINAL COVER SYSTEM GRADING PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

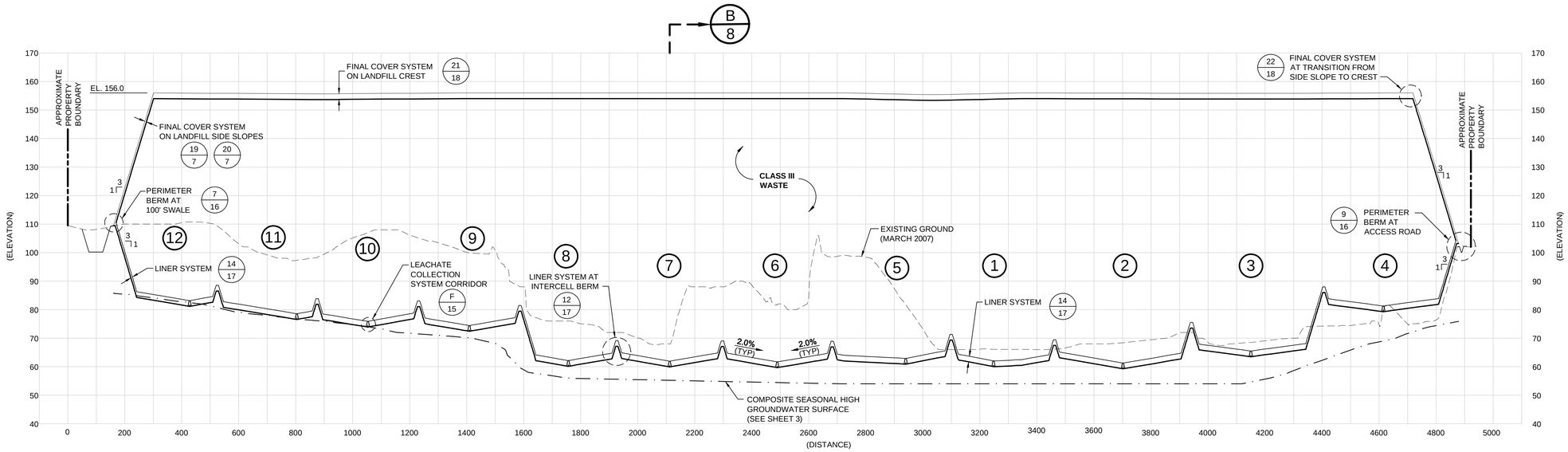
SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P070
REVIEWED BY:	KBT	DRAWING NO.:	7 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

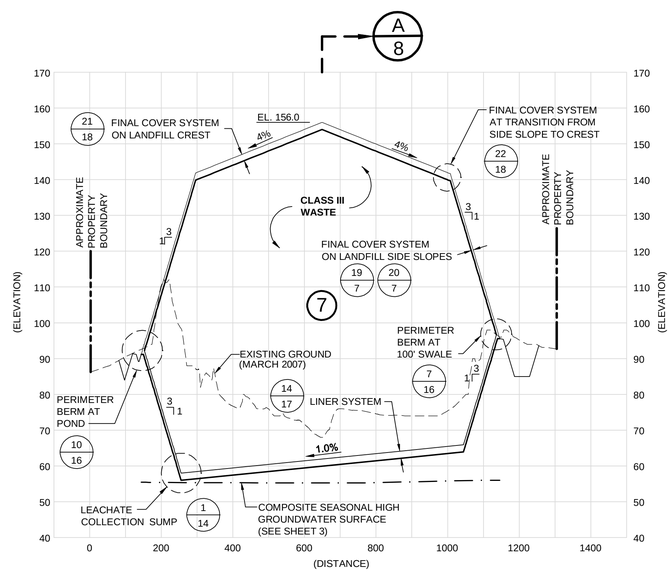


A
5

SECTION
SOUTH-NORTH AND WEST-EAST LANDFILL CROSS SECTION (ALONG LANDFILL CREST ELEVATION 156')

SCALE: 1" = 200' HORIZONTAL 1" = 20' VERTICAL

FL1229.02X035



B
5

SECTION
EAST-WEST LANDFILL CROSS SECTION

SCALE: 1" = 200' HORIZONTAL 1" = 20' VERTICAL

FL1229.02X035

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LANDFILL CROSS SECTIONS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P080
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		8 OF 22

PERMIT DRAWING

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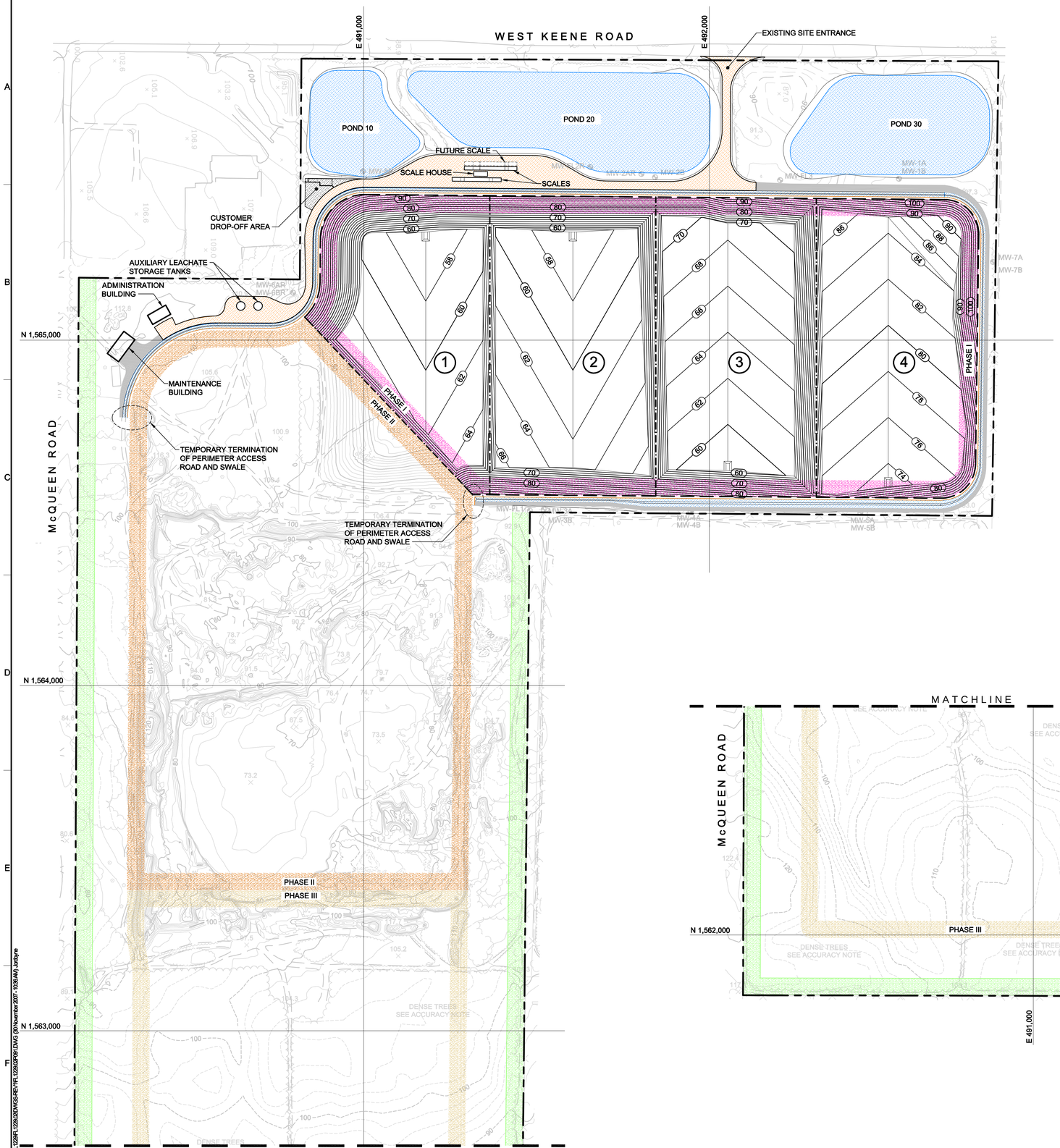
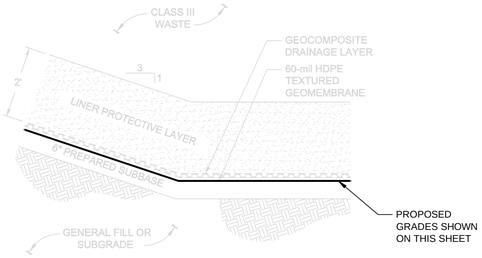
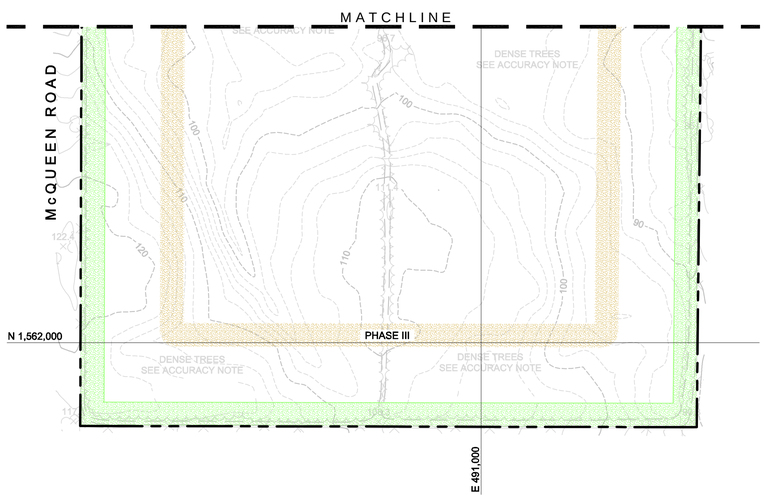




LINER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229.02X037



NORTH

150 75 0 150

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 60 — TOP OF PREPARED SUBBASE
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
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3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP
A	30-NOV-07	RAI #2 (CITY OF APOPKA), REVISED CELL 4 BASE GRADING.	JWO	JDQ

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WM WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LANDFILL DEVELOPMENT PHASING PLAN 1

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P091
REVIEWED BY:	KBT	DRAWING NO.:	9 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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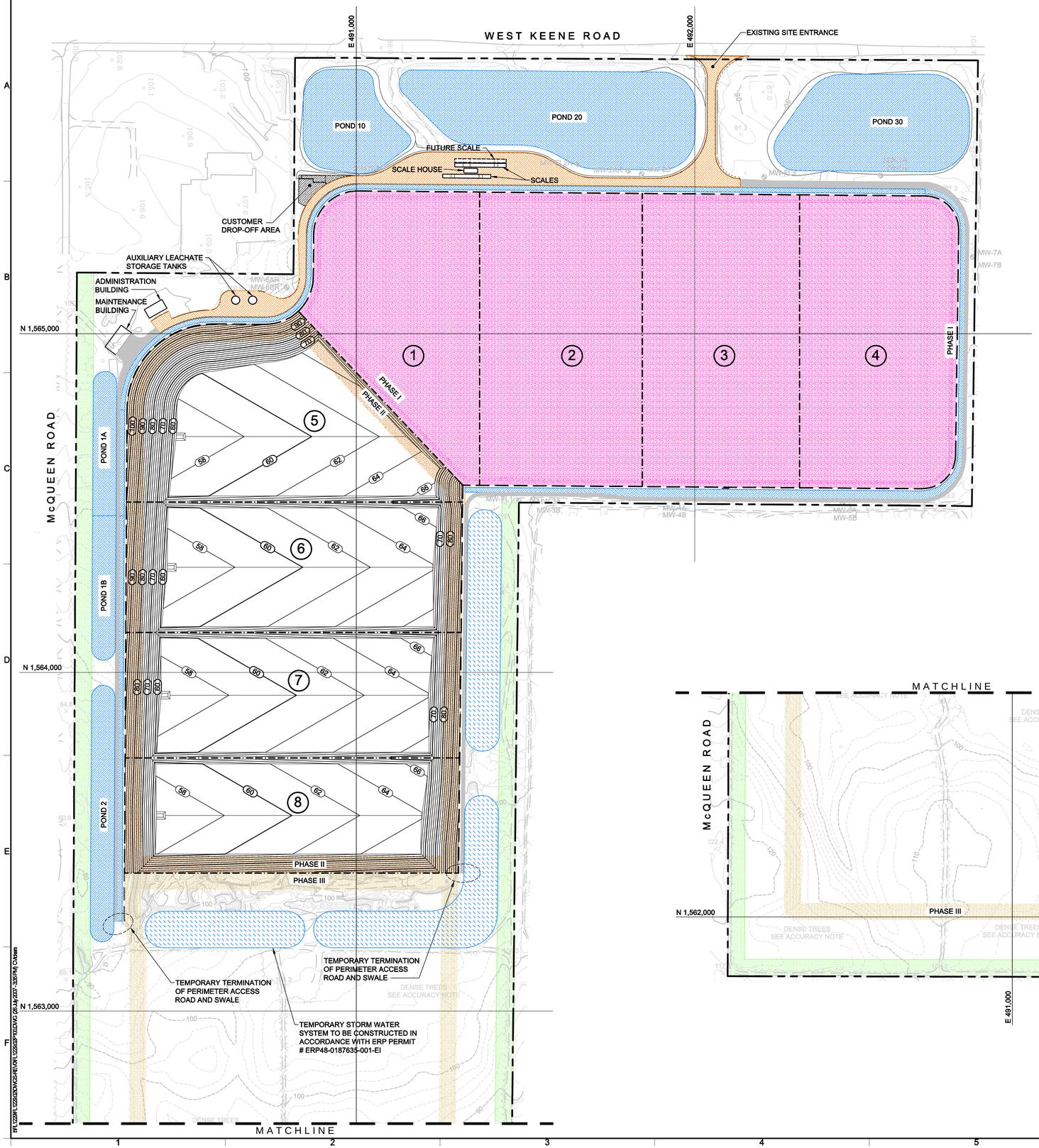
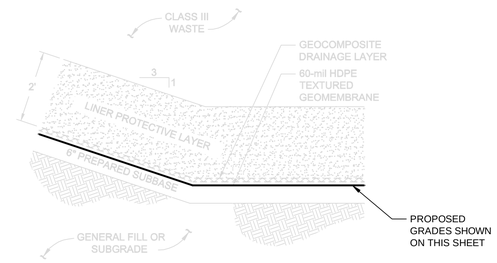




LINER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229-02X037

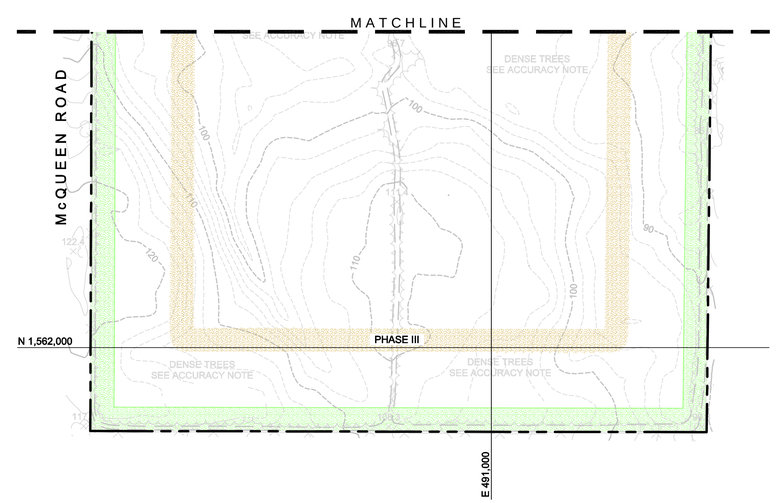
NORTH

150 75 0 150

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- TOP OF PREPARED SUBBASE
- EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- SPOT ELEVATION
- EXISTING GROUNDWATER MONITORING WELL
- CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT
- TEMPORARY STORM WATER SYSTEM



MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LANDFILL DEVELOPMENT PHASING PLAN II

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P100
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		10 OF 22

PERMIT DRAWING

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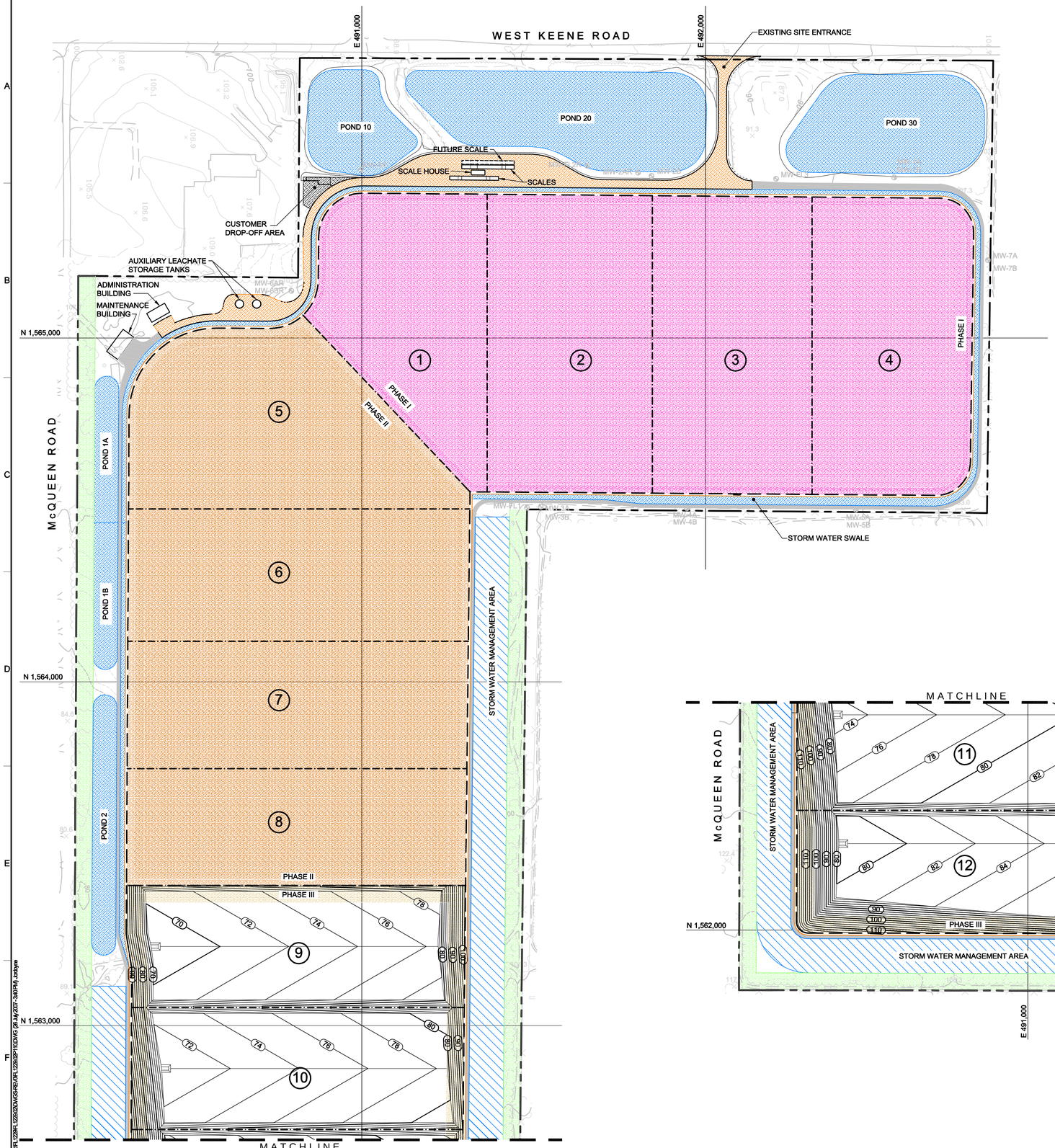

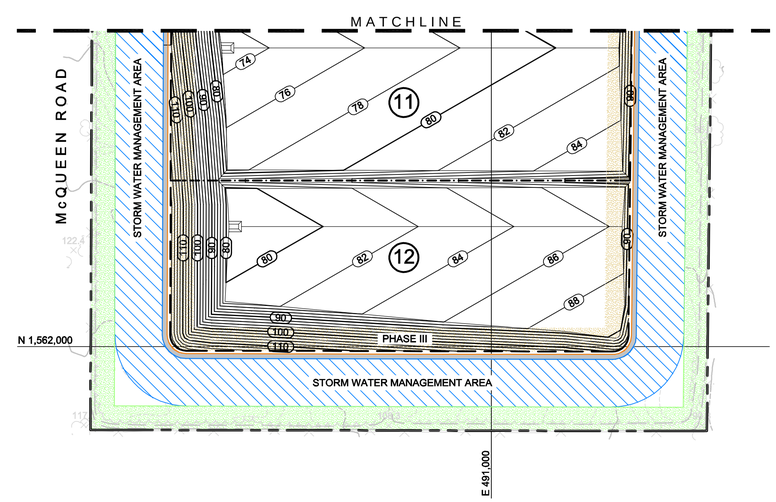

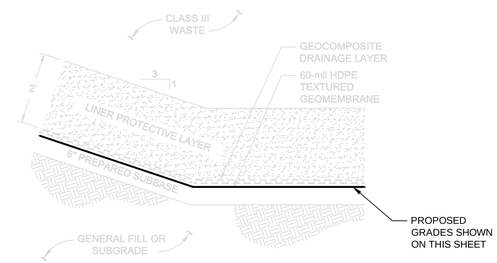

LINER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229.02XG37

NORTH

150 75 0 150

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- TOP OF PREPARED SUBBASE
- EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- SPOT ELEVATION
- EXISTING GROUNDWATER MONITORING WELL
- CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- STORM WATER MANAGEMENT AREA
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LANDFILL DEVELOPMENT PHASING PLAN III

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P110
REVIEWED BY:	KBT	DRAWING NO.:	11 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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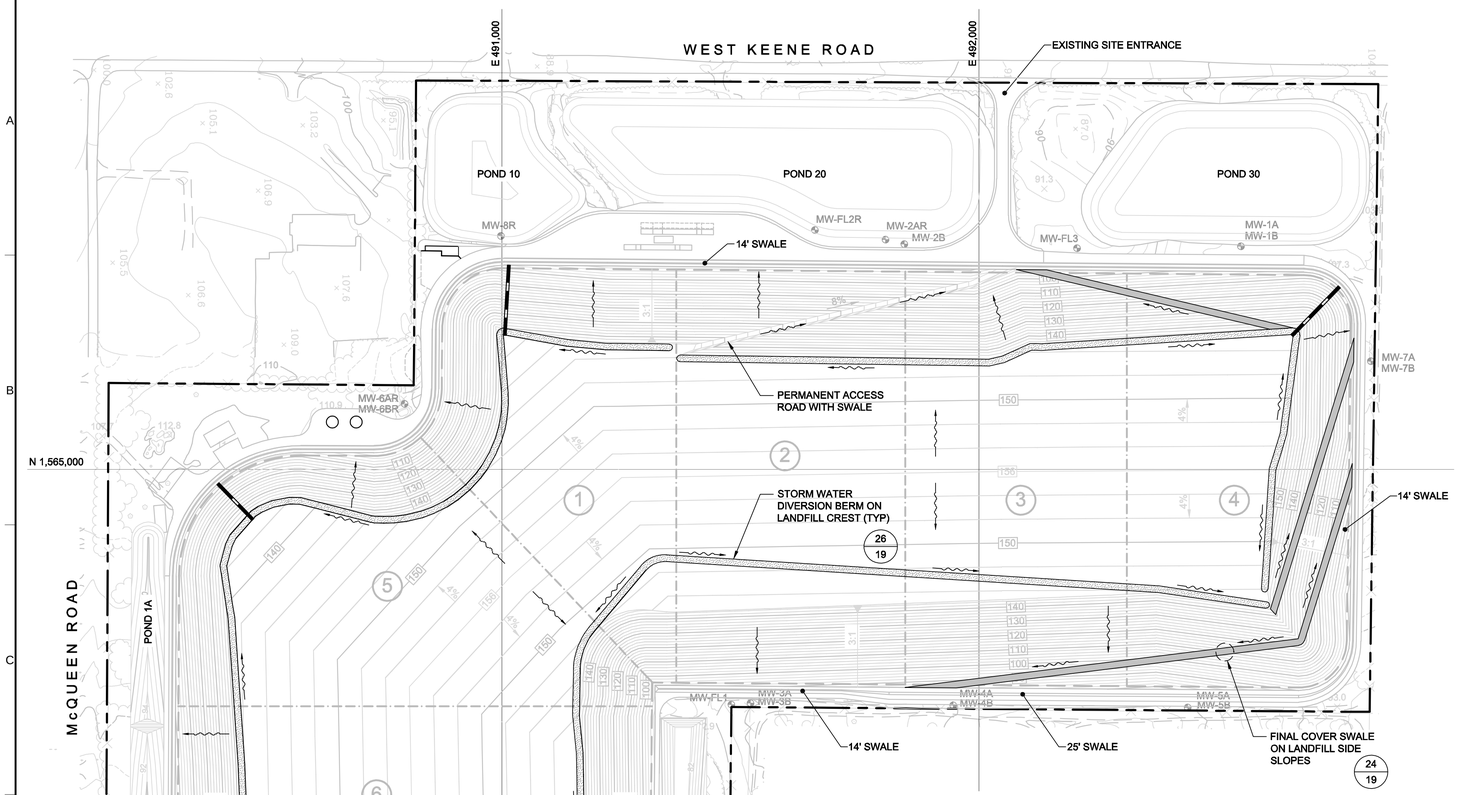
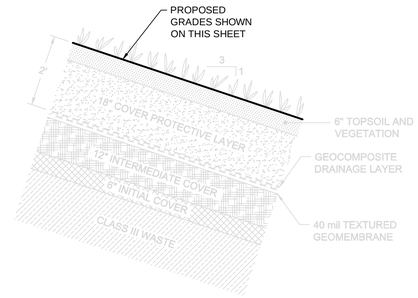




FINAL COVER SYSTEM KEY DETAIL

SCALE: NTS

XREF: FL1229.02X019

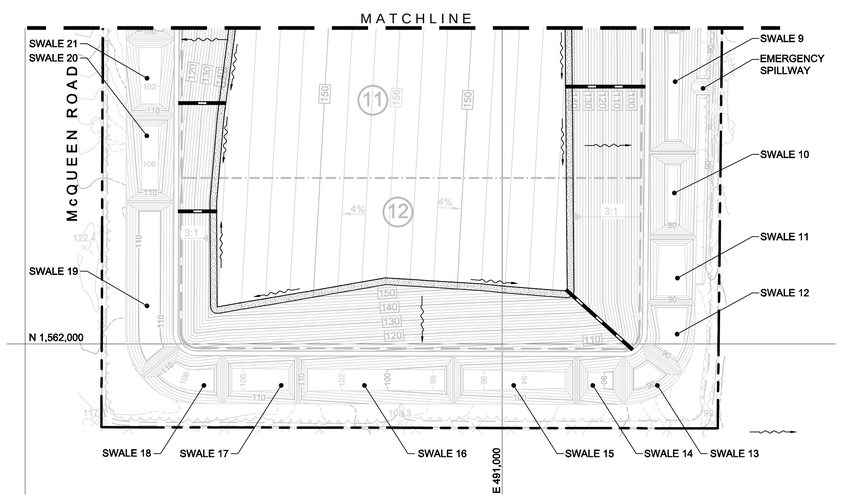
NORTH

150 75 0 150

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER
- DOWN DRAIN PIPE
- FINAL COVER SWALE
- STORM WATER DIVERSION BERM
- STORM WATER FLOW DIRECTION



MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

GENERAL NOTES

5. PONDS 10, 20, AND 30 ARE SHOWN IN ACCORDANCE WITH THE APPROVED MINOR MODIFICATION PERMIT DRAWINGS PREPARED BY GEOSYNTEC AND DATED NOVEMBER 2006. ALL STORM WATER FEATURES SHOWN OUT SIDE OF THE LIMIT OF WASTE ARE BASED UPON THE CURRENTLY APPROVED ENVIRONMENTAL RESOURCE PERMITS FOR THE SITE.
6. ALL STORM WATER FEATURES SHOWN WITHIN THE LIMIT OF WASTE AND ON THE FINAL COVER SYSTEM ARE CONCEPTUAL AND INTEND TO BE CONSISTENT WITH THE DESIGNS PRESENTED IN THE CURRENTLY APPROVED ENVIRONMENTAL RESOURCE PERMITS FOR THE SITE .

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: CONCEPTUAL STORM WATER MANAGEMENT PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P120
REVIEWED BY:	KBT	DRAWING NO.:	12 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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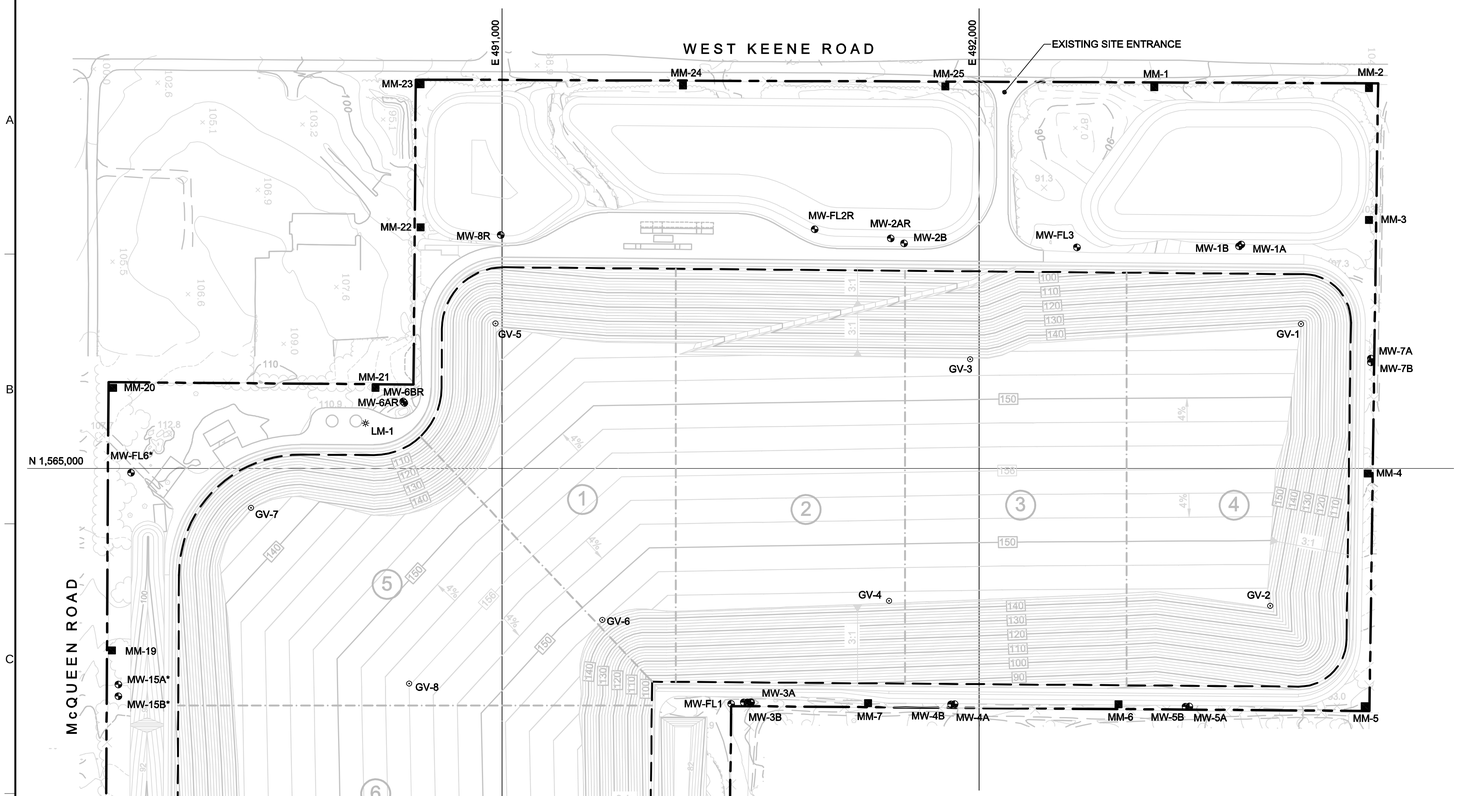

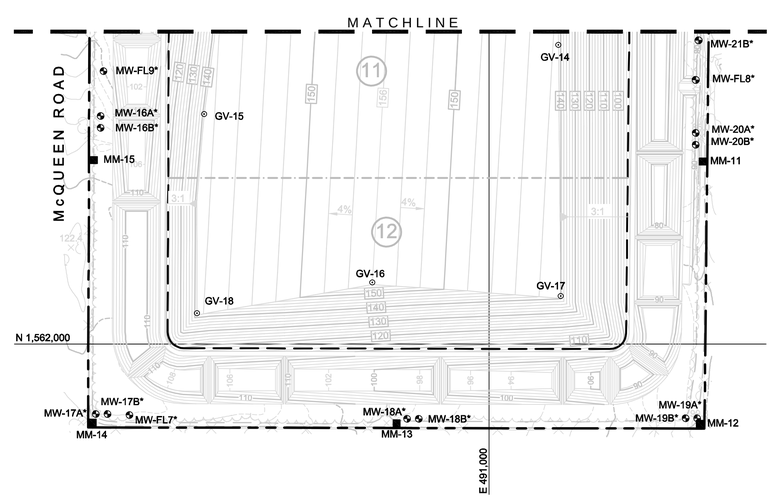

NORTH

150 75 0 150

SCALE IN FEET

LEGEND

	APPROXIMATE PROPERTY BOUNDARY
	LIMIT OF WASTE
	INTERCELL BOUNDARY
120	FINAL COVER SYSTEM CONTOUR
80	EXISTING GROUND CONTOUR (SEE NOTE 1)
	TREE LINE
	UNIMPROVED / DIRT ROAD
	IMPROVED / PAVED ROAD
	FENCE
86.3	SPOT ELEVATION
3	CELL NUMBERS
MW-8	EXISTING GROUNDWATER MONITORING WELL
MW-FL5*	PROPOSED GROUNDWATER MONITORING WELL
GV-9	PROPOSED GAS VENT PROBE
LM-1	PROPOSED LEACHATE MONITORING POINT
MM-19	PROPOSED GAS MONITORING PROBE

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.

2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.

3. DATE OF PHOTOGRAPHY: 18 MARCH 2007

4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

GENERAL NOTES

5. GAS MONITORING DATA IS BASED UPON DRAWINGS TITLED "KEENE ROAD DISPOSAL CLASS III LANDFILL EXPANSION" PREPARED FOR BUTTREY DEVELOPMENT FOUR, LLC AND PREPARED BY BISHOP & BUTTREY, INC., DATED MAY 2004 AND REVISED JANUARY 2005.

6. PROPOSED GROUNDWATER MONITORING DATA IS BASED UPON DRAWINGS TITLED "CLASS III LANDFILL PERMIT RENEWAL, KEENE ROAD SOUTH" PREPARED FOR WASTE MANAGEMENT OF FLORIDA AND PREPARED BY S2LI, DATED JANUARY 2006.

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: ENVIRONMENTAL MANAGEMENT PLAN

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P130
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		13 OF 22

PERMIT DRAWING

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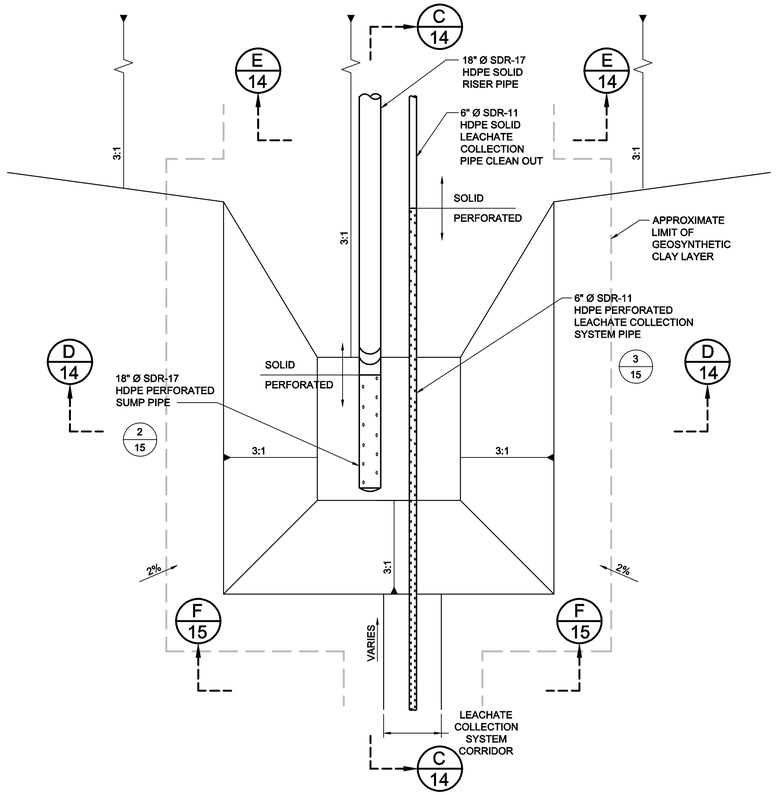
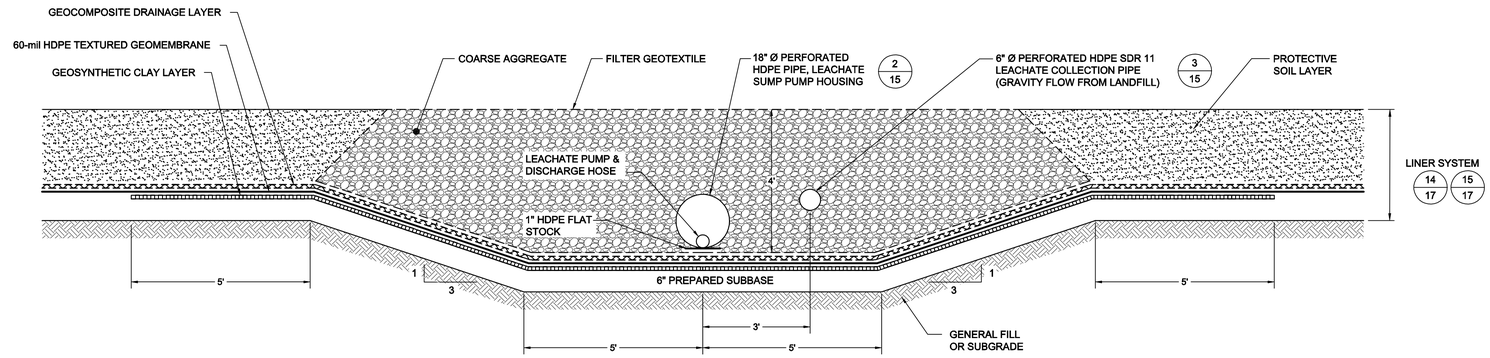
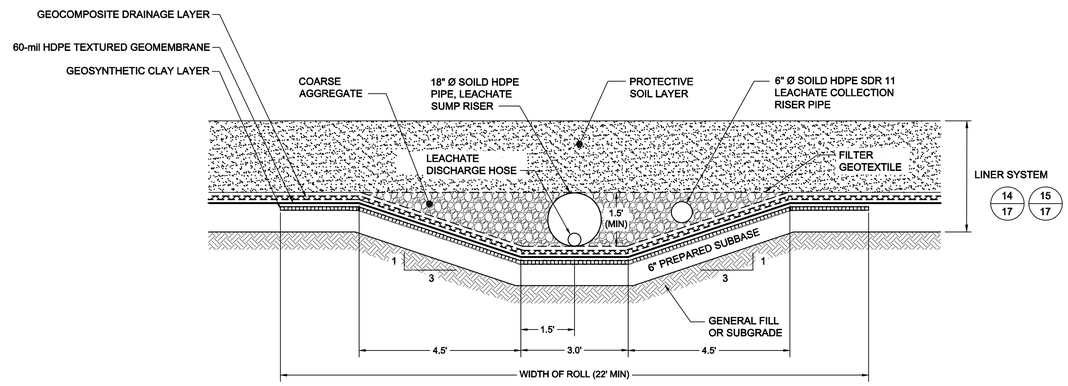


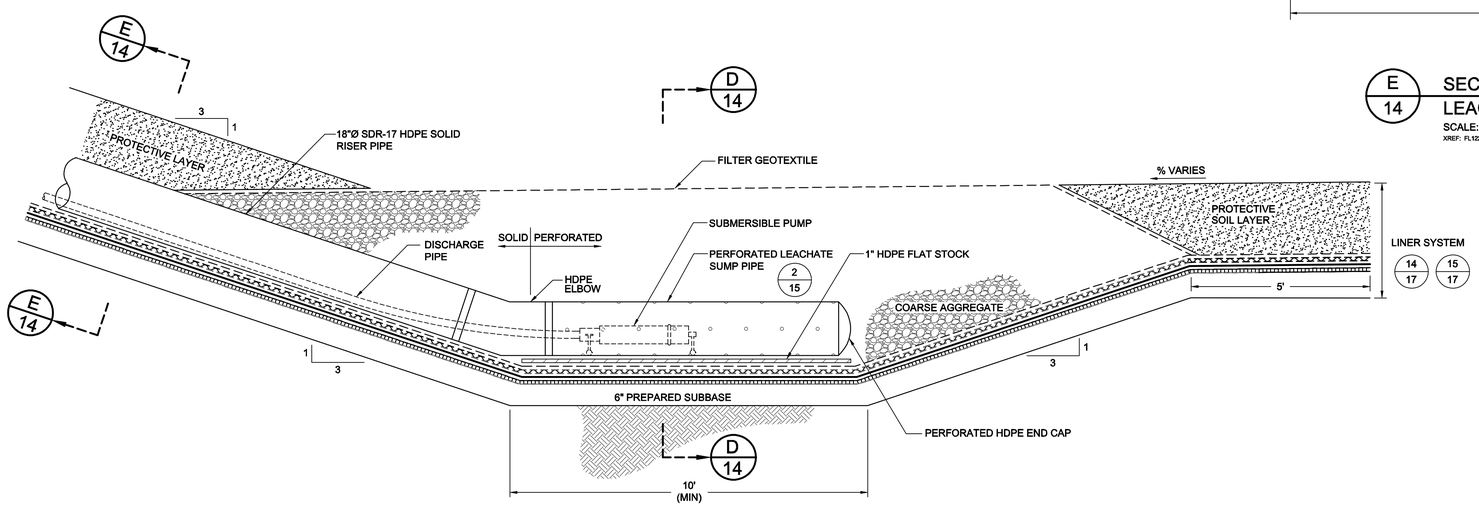
1 / 5 PLAN (TYPICAL)
LEACHATE COLLECTION SUMP
SCALE: 1" = 5'
XREF: FL1229.02X025



D / 14 SECTION
LEACHATE COLLECTION SUMP
SCALE: 1" = 2'
XREF: FL1229.02X033



E / 14 SECTION
LEACHATE COLLECTION RISER TRENCH
SCALE: 1" = 2'
XREF: FL1229.02X034



C / 14 SECTION
LEACHATE COLLECTION RISER AT SUMP
SCALE: 1" = 2'
XREF: FL1229.02X023

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP

Geosyntec consultants
14055 RIVEREDGE DRIVE, SUITE 300
TAMPA, FLORIDA 33637 USA
PH: 813.558.0990 - FX: 813-558.9726
AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LEACHATE COLLECTION SUMP PLAN AND DETAILS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

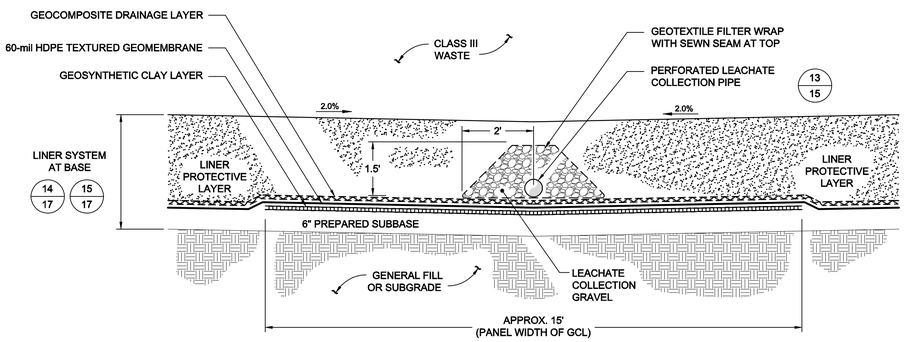
SIGNATURE

DATE

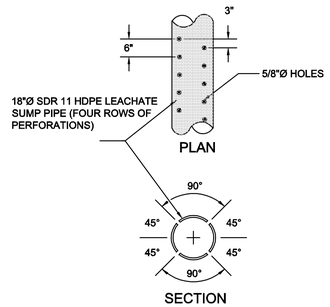
JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P140
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ	14 OF	22

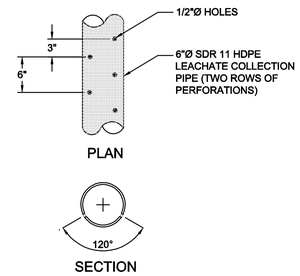
I:\FL1229\FL1229\02\DWG\SHEURV\FL1229\02P140.DWG (28 July 2007 - 3:42 PM) O.Vidaurre



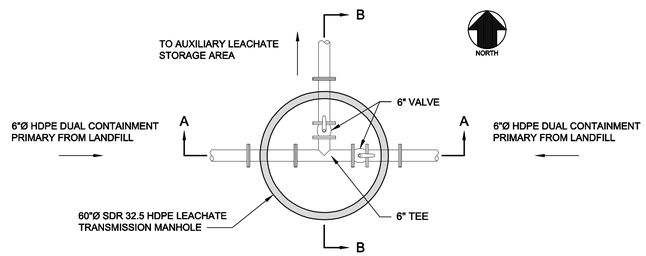
F / 14 SECTION
LEACHATE COLLECTION SYSTEM CORRIDOR
SCALE: 1" = 2'
XREF: FL1229.02X012

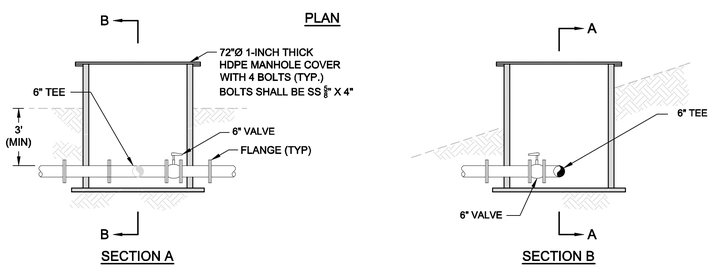


2 / 14 DETAIL (TYPICAL)
PERFORATED LEACHATE SUMP PIPE
SCALE: NTS
XREF: FL1229.02X011

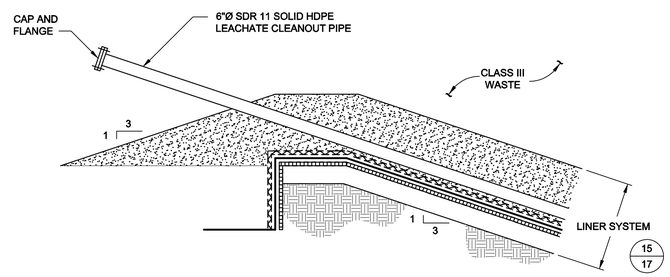


3 / 14 DETAIL (TYPICAL)
PERFORATED LEACHATE COLLECTION PIPE
SCALE: NTS
XREF: FL1229.02X010

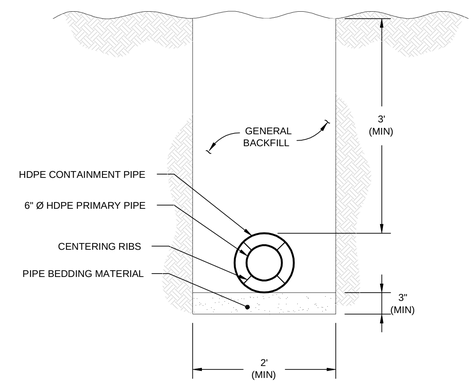




5 / 16 DETAIL (TYPICAL)
LEACHATE TRANSMISSION SYSTEM MANHOLE
SCALE: NTS
XREF: FL1229.02X009



6 / 6 DETAIL (TYPICAL)
LEACHATE COLLECTION CLEANOUT PIPE
SCALE: 1" = 2'
XREF: FL1229.02X013



4 / 6 DETAIL
LEACHATE TRANSMISSION SYSTEM FORCE MAIN
SCALE: 1" = 1'
XREF: FL1229.02X032

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP

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AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: LEACHATE COLLECTION SYSTEM DETAILS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P150
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		15 OF 22

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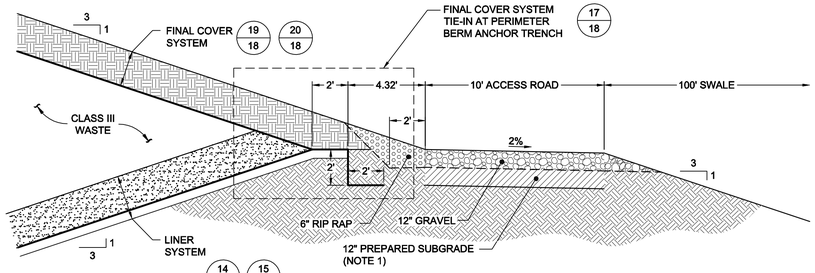
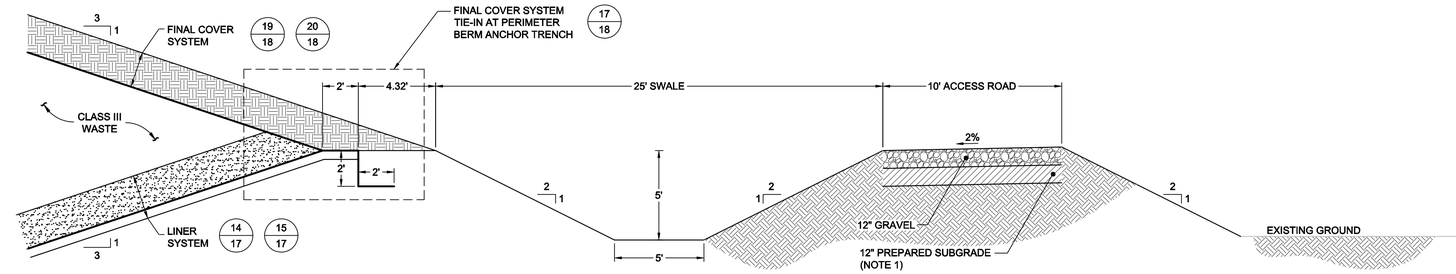
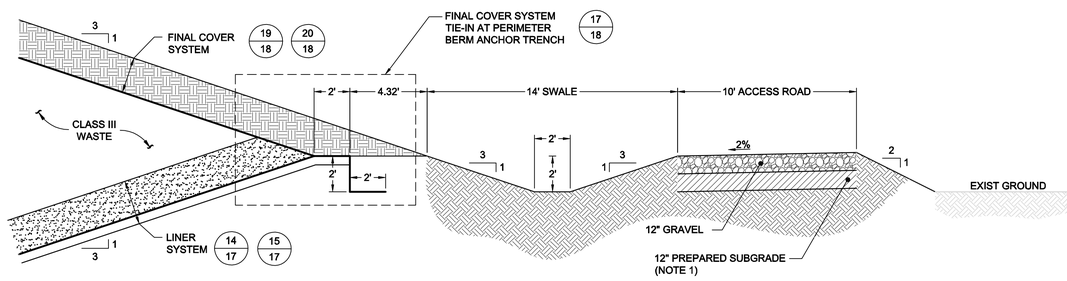


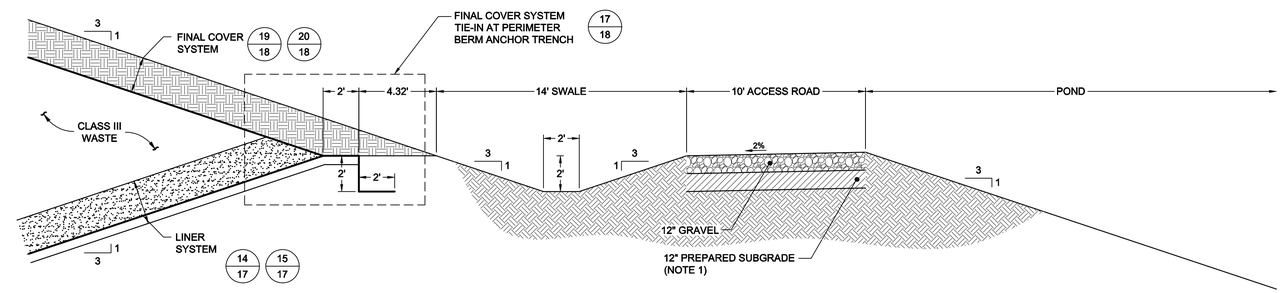
7/5 DETAIL
PERIMETER BERM AT 100' SWALE
SCALE: 1" = 4'
XREF: FL1229.02X030



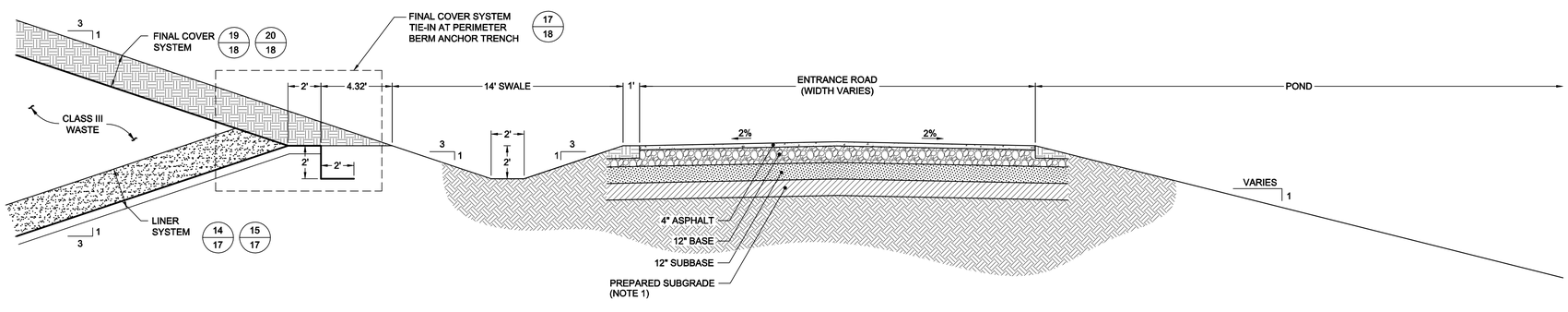
8/5 DETAIL
PERIMETER BERM AT 25' SWALE
SCALE: 1" = 4'
XREF: FL1229.02X031



9/5 DETAIL
PERIMETER BERM AT ACCESS ROAD
SCALE: 1" = 4'
XRE: FL1229.02X028



10/5 DETAIL
PERIMETER BERM AT POND
SCALE: 1" = 4'
XREF: FL1229.02X029



11/5 DETAIL
PERIMETER BERM AT ENTRANCE ROAD
SCALE: 1" = 4'
XREF: FL1229.02X027

NOTES:

1. PREPARED SUBGRADE WILL CONSIST OF A MINIMUM OF 12 INCHES OF RECOMPACTED MATERIAL BELOW STRIPPING DEPTH.

REV	DATE	DESCRIPTION	DRN	APP

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AUTHORIZATION NUMBER 4321

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APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: PERIMETER BERM AND ACCESS ROAD DETAILS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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SIGNATURE

DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P160
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ	16 OF 22	

PERMIT DRAWING

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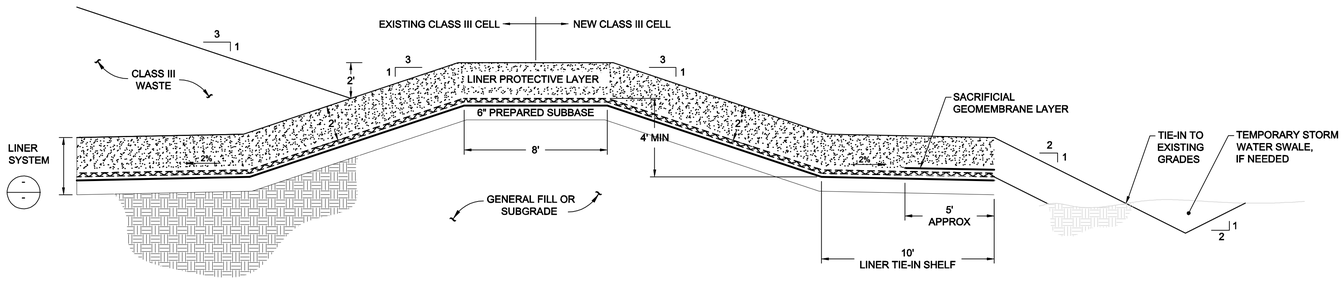
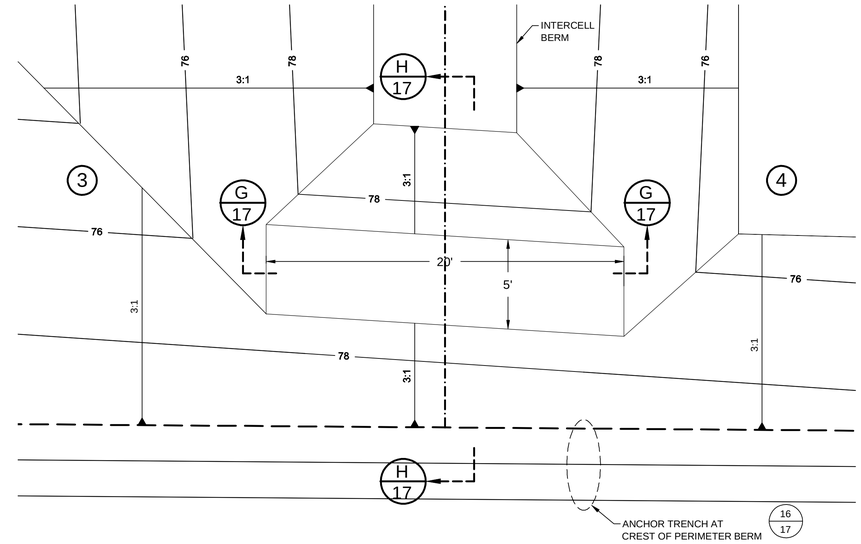
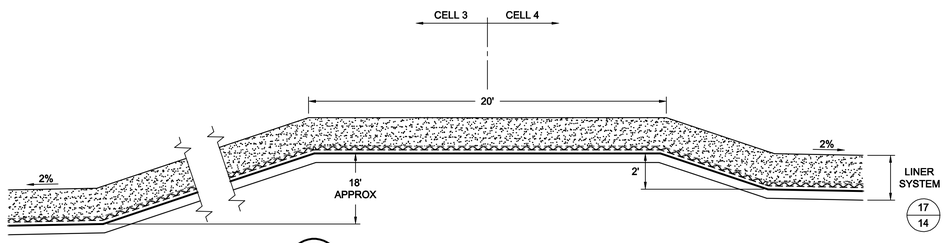


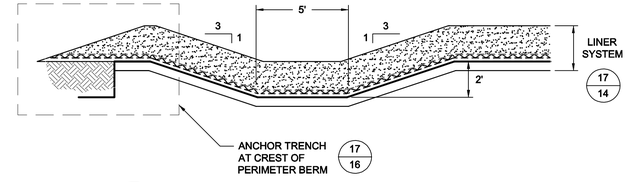
12/5 DETAIL (TYPICAL)
LINER SYTEM AT INTERCELL BERM
SCALE: 1" = 4'
XREF: FL1229.02X005



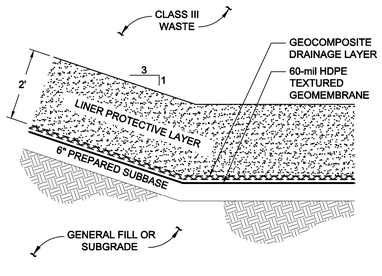
13/5 PLAN DETAIL
INTERCELL BERM OVERFLOW
SCALE: 1" = 4'



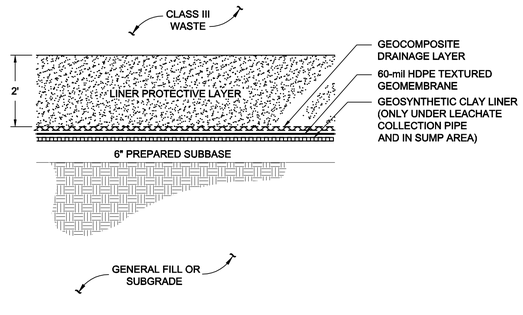
G/17 SECTION
INTERCELL BERM OVER FLOW
SCALE: 1" = 4'
XREF: FL1229.02X004



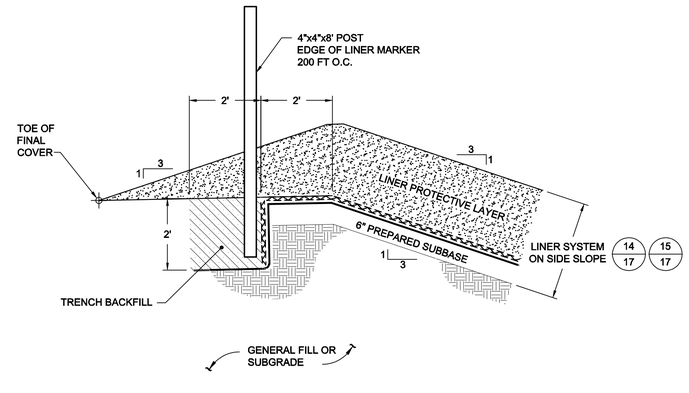
H/17 SECTION
INTERCELL BERM OVER FLOW
SCALE: 1" = 4'
XREF: FL1229.02X003



14/5 DETAIL (TYPICAL)
LINER SYSTEM
SCALE: 1" = 2'
XREF: FL1229.02X037



15/5 DETAIL (TYPICAL)
LINER SYSTEM AT LEACHATE COLLECTION PIPES & SUMP
SCALE: 1" = 2'
XREF: FL1229.02X006



16/5 DETAIL (TYPICAL)
ANCHOR TRENCH AT CREST OF PERIMETER BERM
SCALE: 1" = 2'
XREF: FL1229.02X007

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP

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AUTHORIZATION NUMBER 4321

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PH: 407.886.2920

TITLE: LINER SYSTEM DETAILS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

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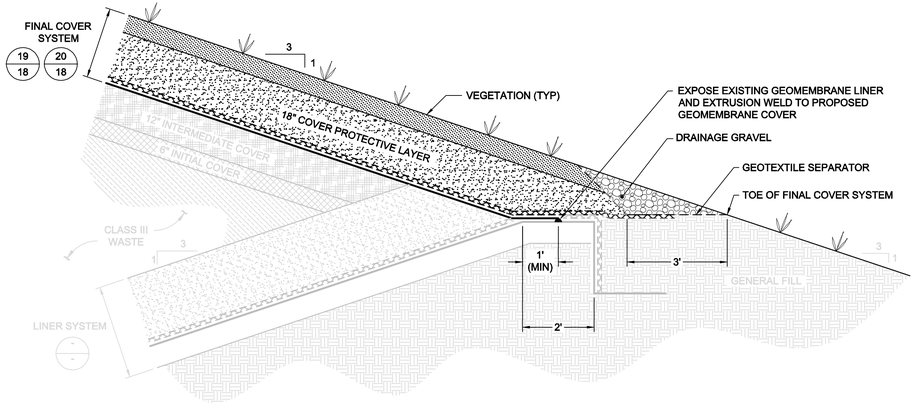
DATE

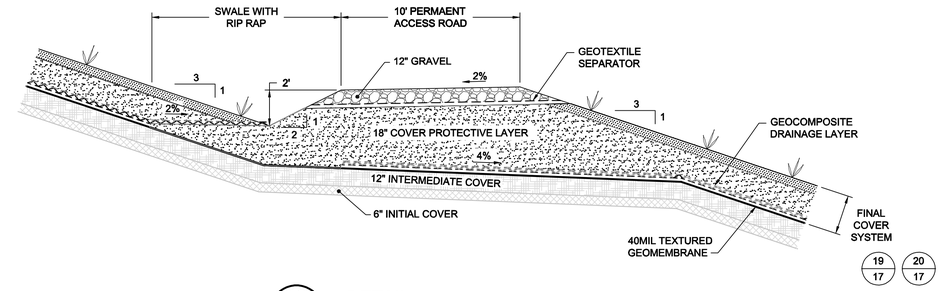
JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P170
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	JDQ		17 OF 22

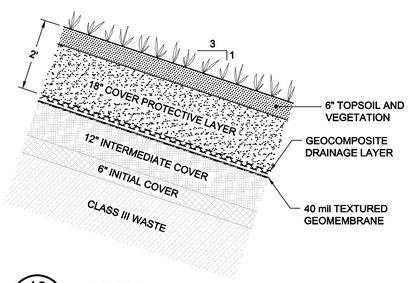
N:\FL1229\FL1229\02\DWG\CSH\REVFL1229\02P170.DWG 08-July-2007 - 5:52 PM, jacquie



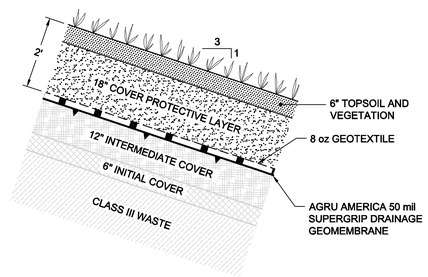
17/7 DETAIL (TYPICAL)
FINAL COVER SYSTEM TIE-IN AT PERIMETER BERM ANCHOR TRENCH
SCALE: 1" = 2'
XREF: FL1229.02X020



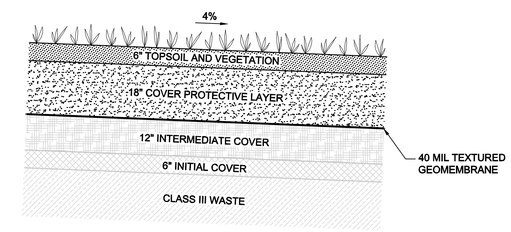
18/7 DETAIL
PERMANENT ACCESS ROAD WITH SWALE
SCALE: 1" = 4'
FL1229.02X038



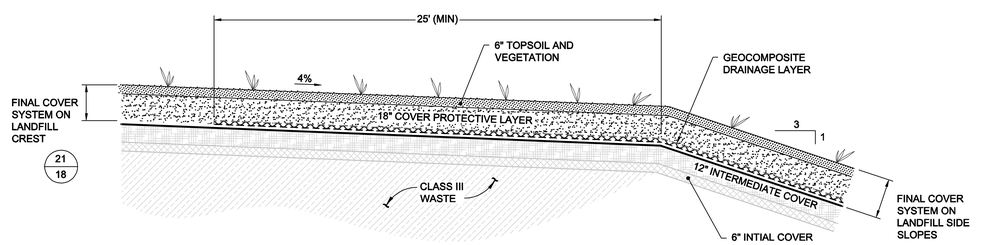
19/7 DETAIL
FINAL COVER SYSTEM ON LANDFILL SIDE SLOPES
SCALE: 1" = 2'
XREF: FL1229.02X019



20/7 DETAIL (ALTERNATE)
FINAL COVER SYSTEM ON LANDFILL SIDE SLOPES
SCALE: 1" = 2'
XREF: FL1229.02X036



21/7 DETAIL (TYPICAL)
FINAL COVER SYSTEM ON LANDFILL CREST
SCALE: 1" = 2'
XREF: FL1229.02X039



22/7 DETAIL (TYPICAL)
FINAL COVER SYSTEM TRANSITION FROM SIDE SLOPES TO CREST
SCALE: 1" = 4'
FL1229.02X040

REV	DATE	DESCRIPTION	DRN	APP

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TITLE: FINAL COVER SYSTEM DETAILS

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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DATE

JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P180
REVIEWED BY:	KBT	DRAWING NO.:	18 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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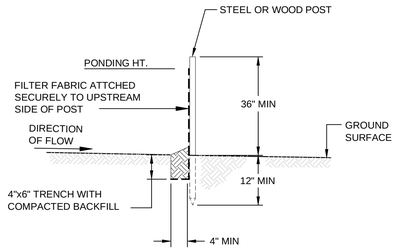
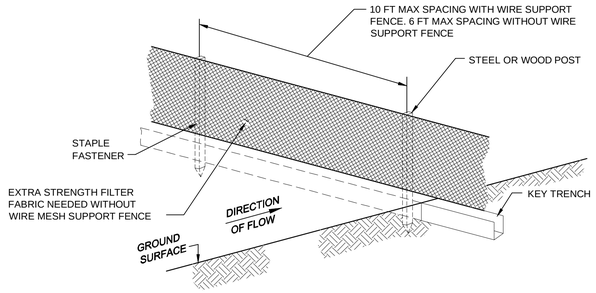
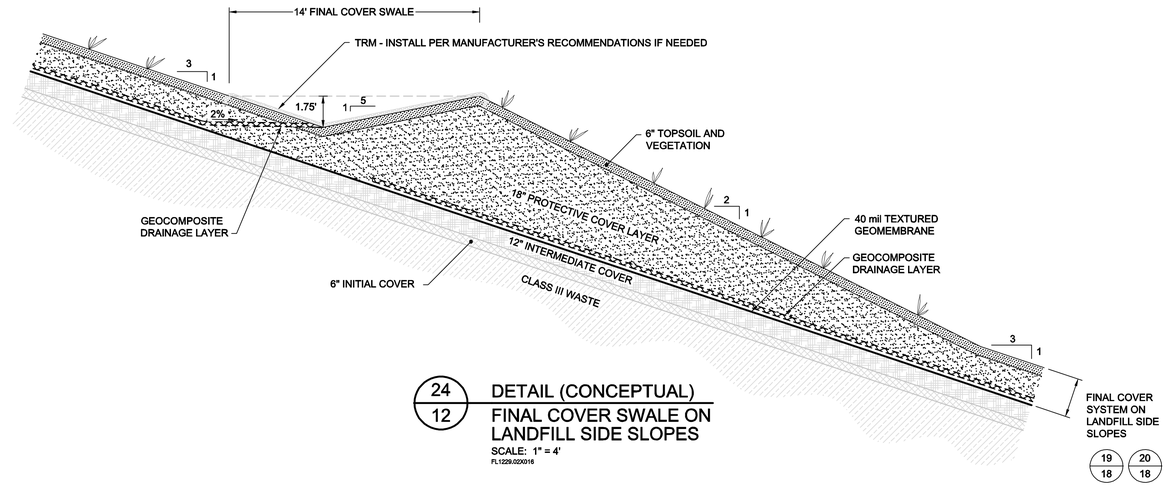




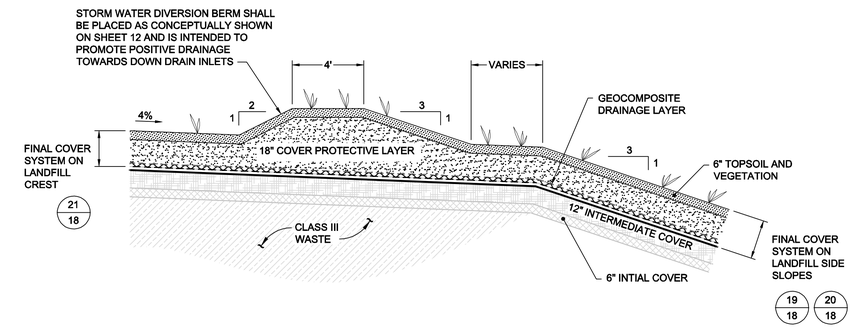
NOTES:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

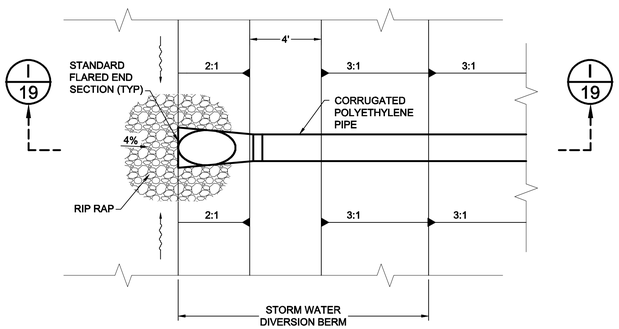
23 / - DETAIL
SILT FENCE
SCALE: NTS
XREF: FL1229.02X004



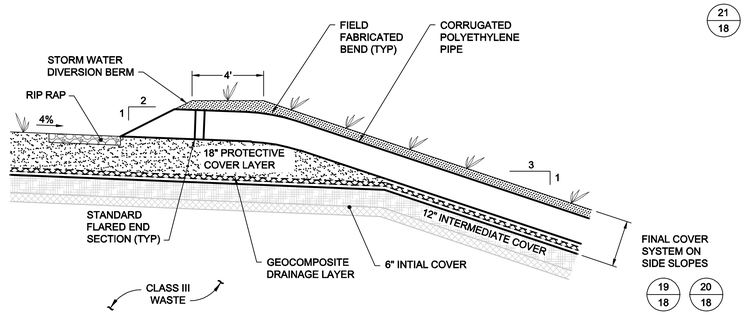
24 / 12 DETAIL (CONCEPTUAL)
FINAL COVER SWALE ON LANDFILL SIDE SLOPES
SCALE: 1" = 4'
FL1229.02X016



26 / 12 DETAIL (CONCEPTUAL)
STORM WATER DIVERSION BERM ON LANDFILL CREST
SCALE: 1" = 4'
FL1229.02X045



25 / 12 PLAN DETAIL (CONCEPTUAL)
DOWN DRAIN PIPE INLET
SCALE: 1" = 4'
FL1229.02X042



I / 19 SECTION (CONCEPTUAL)
DOWN DRAIN PIPE INLET AT STORM WATER DIVERSION BERM
SCALE: 1" = 4'
FL1229.02X041

REV	DATE	DESCRIPTION	DRN	APP

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AUTHORIZATION NUMBER 4321

WASTE MANAGEMENT
242 WEST KEENE ROAD
APOPKA, FLORIDA 32703
PH: 407.886.2920

TITLE: STORM WATER MANAGEMENT DETAILS I

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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JUAN D. QUIROZ - LICENSE NO. 65275

DESIGN BY:	JDQ & JWO	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	JDQ	FILE:	FL1229.02P.190
REVIEWED BY:	KBT	DRAWING NO.:	19 OF 22
APPROVED BY:	JDQ		

PERMIT DRAWING

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EQUIPMENT IDENTIFICATION

- SUMP PUMP, CENTRIFUGAL (PC)
- HORIZONTAL CENTRIFUGAL PUMP (PC)
- SUBMERSIBLE POSITIVE DISPLACEMENT PUMP, PNEUMATIC (PS)
- SUBMERSIBLE CENTRIFUGAL PUMP, MOTOR DRIVEN (PS)
- FILTER OR STRAINER, BASKET TYPE (F)
- PACKAGED EQUIPMENT BOUNDARY (PA)

INSTRUMENTS

- INTERLOCK LOCAL MOUNTED
- INTERLOCK, MAIN PANEL MOUNTED
- INTERLOCK, REMOTE PANEL MOUNTED
- INTERLOCK, NORMALLY INACCESSIBLE
- DISCRETE INSTRUMENT–LOCAL MOUNTED
- DISCRETE INSTRUMENT–MAIN PANEL MOUNTED
- DISCRETE INSTRUMENT–REMOTE PANEL MOUNTED
- DISCRETE INSTRUMENT–NORMALLY INACCESSIBLE
- SHARED DISPLAY, SHARED CONTROL LOCAL MOUNTED
- SHARED DISPLAY, SHARED CONTROL MAIN PANEL MOUNTED
- SHARED DISPLAY, SHARED CONTROL REMOTE PANEL MOUNTED
- COMPUTER FUNCTION–LOCAL MOUNTED
- COMPUTER FUNCTION–MAIN PANEL MOUNTED
- COMPUTER FUNCTION–REMOTE PANEL MOUNTED
- COMPUTER FUNCTION–NORMALLY INACESSABLE
- INSTRUMENTS SHARING COMMON HOUSING–LOCAL MOUNTED
- INSTRUMENTS SHARING COMMON HOUSING–MAIN PANEL MOUNTED
- TURBINE METER
- THERMOWELL
- PRESSURE REDUCING REGULATOR SELF CONTAINED (* = SET PRESSURE)
- BACKPRESSURE REGULATOR SELF CONTAINED (* = SET PRESSURE)
- DIAPHRAGM ACTUATOR
- MOTOR OR PISTON ACTUATOR M = MOTOR, P = PISTON
- SOLENOID
- GEAR ACTUATOR
- PRESSURE SAFETY VALVE
- PRESSURE/VACUUM SAFETY VALVE
- RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF
- RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF
- PRESSURE/VACUUM RELIEF PLATE
- FAILURE MODE

FAILURE POSITIONS
FC – FAIL CLOSED (ASSUMED)
FO – FAIL OPEN
FI – FAIL INDETERMINATE
FL – FAIL LOCKED

PIPING SYMBOLS

- FLANGED CONNECTION
- CONCENTRIC REDUCER (12"x10")
- ECCENTRIC REDUCER, F.O.T. (12"x10")
- BLIND FLANGE
- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- ANGLE VALVE
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- CHECK VALVE
- BLOCK AND BLEED VALVE
- INSTRUMENT VALVE
- NEEDLE VALVE
- AIR ELIMINATOR
- EXPANSION JOINT
- CAMLOCK CONNECTION FEMALE
- CAMLOCK CONNECTION MALE
- SAMPLE POINT
- PIPE CAP
- EXTERNAL STRAINER
- EPG PDISCONNECT ADAPTERS
- PRESSURE GUAGE
- FLOW METER

DEFINITIONS

CAP – CAPACITY
C.S. – CARBON STEEL
C.R.T. – CATHODE RAY TUBE
D.I. – DUCTILE IRON
°F – DEGREES FARENHEIT
F.O.T. – FLAT ON TOP
FRP – FIBERGLASS REINFORCED PLASTIC
gal – GALLON
gpm – GALLONS PER MINUTE
HLL – HIGH LIQUID LEVEL
HP – HORSEPOWER
HDPE – HIGH DENSITY POLYETHYLENE
LLL – LOW LIQUID LEVEL
mA – MILLIAMPERE
MW – MANWAY
NLL – NORMAL LIQUID LEVEL
O.D. – OUTSIDE DIAMETER
PRESS. – PRESSURE
psig – POUNDS PER SQUARE INCH GAUGE
PVC – POLYVINYL CHLORIDE
RPM – REVOLUTIONS PER MINUTE
RTD – RESISTANCE TEMPERATURE DETECTOR
SCFM – STANDARD CUBIC FEET PER MINUTE
S.S. – STAINLESS STEEL
TDH – TOTAL DYNAMIC HEAD
TEMP. – TEMPERATURE
T.H. – TOTAL HIEGHT
t.t. – TANGENT TO TANGENT
V – VOLTS
VFD – VARIABLE FREQUENCY DRIVE
WC – WATER COLUMN

SYSTEM

1 – LEACHATE COLLECTION SUMP
2 – LEACHATE TRANSMISSION AND STORAGE
3 – LEACHATE DISPOSAL

CLASSIFICATION

0 – STORM WATER
1 – LEACHATE

EQUIPMENT TAG NUMBERS

B – 2 6 01 01

- SEQUENCE
- CELL NUMBER
- CLASSIFICATION
- SYSTEM
- EQUIPMENT IDENTIFICATION

INSTRUMENT TAG NUMBERS

PI – 3 112 01

- SEQUENCE
- CELL NUMBER
- CLASSIFICATION
- SYSTEM
- INSTRUMENT IDENTIFICATION

INSTRUMENT IDENTIFICATION

FIRST LETTERS	INITIATING OR MEASURED VARIABLE	CONTROLLERS: RECORDING	CONTROLLERS: INDICATING	CONTROLLERS: BLIND	CONTROLLERS: SELF-ACTUATED CONTROL VALVES	READOUT DEVICES: RECORDING	READOUT DEVICES: INDICATING	SWITCHES AND ALARM DEVICES (a): HIGH**	SWITCHES AND ALARM DEVICES (a): LOW	SWITCHES AND ALARM DEVICES (a): COMB	TRANSMITTERS: RECORDING	TRANSMITTERS: INDICATING	TRANSMITTERS: BLIND	SOLENOIDS, RELAYS, COMPUTING DEVICES	PRIMARY ELEMENTS	MANUAL/ AUTO	WELL OR PROBE	VIEWING DEVICE, GLASS	FINAL ELEMENT
A B C D E	ANALYSIS BURNER/COMBUSTION AIR/WATER RATIO USER'S CHOICE VOLTAGE	ARC BRC ERC	AIC BIC EIC	AC BC EC		AR BR ER	AI BI EI	ASH BSH ESH	ASL BSL ESL	ASHL BSHL ESHL	ART BRT ERT	AIT BIT EIT	AT BT ET	AV BY EY	AE BE EE		AW BW	BG	AV BZ EZ
F FQ FF G H	FLOW RATE FLOW QUANTITY FLOW RATIO USER'S CHOICE HAND	FRC FQRC FFRC HIC	FIC FQIC FFIC HIC	FC FFC HC	FCV, FICV	FR FQR	FI FQI	FSH FQSH FFSH	FSL FQSL FFSL	FSHL HS	FRT	FIT FQIT	FT FQT	FY FQY	FE FQE FE	NOA		FG	FV FQV FFV HV
I J KQ L M	CURRENT POWER TIME QUANTITY LEVEL LEAK	IRC JRC KQRC LRC	IIC JIC KQIC LIC	 KQC LC	KQCV LCV	IR JR KQR LR	II JI KQI LI MI	ISH JSH KQSH LSH MSH	ISL JSL KQSL LSL MSL	ISHL JSHL KQSHL LSHL	IRT JRT KQRT LRT	IIT JIT KQIT LIT	IT JT KQT LT MT	IY JY KQY LY	IE JE KQE LE		 LW	 LG	IV JV KQV LV
N O P PD Q	USER'S CHOICE USER'S CHOICE PRESSURE/ VACUUM PRESSURE, DIFFERENTIAL QUANTITY	PRC PDRC QRC	PIC PDIC QIC	PC PDC	PCV PDCV	PR PDR QR	PI PDI QI	PSH PDSH QSH	PSL PDSL QSL	PSHL QSHL	PRT PDRT QRT	PIT PDIT QIT	PT PDT QT	PY PDY QY	PE PE QE				PV PDV QZ
R SP T TD U	RADIATION SET POINT TEMPERATURE TEMPERATURE, DIFFERENTIAL MULTIVARIABLE	RRC TRC TDRC	RIC TIC TDIC	RC TC TDC	 TCV TDCV	RR TR TDR UR	RI TI TDI UI	RSH SPH TSH TDSH	RSL SPL TSL TDSL	RSHL SPHH TSHL	RRT TRT TDRT	RIT TIT TDIT	RT TT TDT	RY TY TDY UY	RE TE TE		RW TW TW		RZ TV TDV UV
V W WD X Y	VIBRATION/MACHINERY ANALYSIS WEIGHT/FORCE WEIGHT/FORCE, DIFFERENTIAL UNCLASSIFIED EVENT/STATE/ PRESENCE	 WRC WDRC	 WIC WDIC YIC	 WC WDC YC	 WCV WDCV	VR WR WDR YR	VI WI WDI YI	VSH WSH WDSH YSH	VSL WSL WDSL YSL	VSHL WSHL	VRT WRT WDRT	VIT WIT WDIT	VT WT WDT YT	VY WY WDY YY	VE WE WDE YE				VZ WZ WDZ YZ
Z ZD	POSITION/DIMENSION	ZRC ZDRC	ZIC ZDIC	ZC ZDC	ZCV ZDCV	ZR ZDR	ZI ZDI	ZSH ZDSH	ZSL ZDSL	ZSHL	ZRT ZDRT	ZIT ZDIT	ZT ZDT	ZY ZDY	ZE ZDE				ZV ZDV

(a) "A", ALARM, THE ANNUNCIATING DEVICE MAY BE USED IN THE SAME FASHION AS "S", SWITCH, THE ACTUATING DEVICE. THE LETTERS H AND L MAY BE OMITTED IN THE UNDEFINED CASE. HH OR LL MAY BE USED TO INDICATE HIGH–HIGH OR LOW–LOW DEVICES.

LINE SYMBOLS

- MAJOR FLOW LINE
- SECONDARY FLOW LINE
- AIR DUCT
- FLEXIBLE HOSE
- PNEUMATIC INSTRUMENT SIGNAL
- HYDRAULIC INSTRUMENT SIGNAL
- ELECTRICAL SIGNAL
- CAPILLARY INSTRUMENT SIGNAL
- OPTICAL SIGNAL
- SOFTWARE LINK
- LINE CONTINUATION
- TIE POINT
- SPECIFICATION BREAK, XX = PIPING MATERIAL AND CLASS

SHARED DISPLAY EXPLANATION

USED TO INDICATE A "SOFTWARE INTERNAL LINK" BETWEEN FUNCTIONS– NO EXTERNAL WIRING REQUIRED

FUNCTION PERFORMED WITHIN LOCAL PROCESSOR

1. DATA AVAILABLE ON P.C.L. (PROCESS COMMUNICATIONS LINK)
2. FUNCTION PERFORMED BY LOCAL PROCESSOR
3. DISPLAY ON CONSOLE C.R.T. SCREEN
4. DATA CAN BE TREND RECORDED ON C.R.T. SCREEN AND HARD COPY REPORT

COMPUTER INTERFACE SYMBOLS

- AI – ANALOG INPUT
- AO – ANALOG OUTPUT
- DI – DIGITAL INPUT
- DO – DIGITAL OUTPUT

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP

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242 WEST KEENE ROAD
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PH: 407.886.2920

TITLE: LEACHATE MANGEMENT SYSTEM PROCESS DIAGRAM LEGEND SHEET

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL APOPKA, FLORIDA

THIS DRAWING IS ISSUED FOR PERMITTING ONLY AND MAY NOT BE USED FOR CONSTRUCTION

SIGNATURE

DATE

ERIK J. NELSON - LICENSE NO. 60492

DESIGN BY:	EJN	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	EJN	FILE:	FL1229.02P200
REVIEWED BY:	KBT	DRAWING NO.:	20 OF 22
APPROVED BY:	EJN		

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PS-1101 01 THROUGH PS-1102 01
SUBMERSIBLE SUMP PUMP

MODEL: SLIGO 3-7.5-3
DRIVER: 3 HP, 460-3PH.
DESIGN CAPACITY: 64GPM @ 110 FT. HEAD

PC-3100 01
TRUCK LOAD OUT PUMP

MODEL:
DRIVER:
DESIGN CAPACITY:

PS-3000 01
SUBMERSIBLE SUMP PUMP

MODEL: TSURUMI VANCS1-02-2PU
DRIVER: 0.2 HP, 460-3PH.
DESIGN CAPACITY: 15 GPM @ 15 FT. HEAD

FT-1101 01 THROUGH FT-1102 01,
FT-3100 01
TOTALIZING FLOW METER

MODEL: TIGERMAG, FM656-0251100
MATERIALS: STAINLESS STEEL, FLANGED FACED

LT-1101 01 THROUGH LT-1112 01
LT-2101 01, LT-2102 01
LEVEL TRANSDUCER

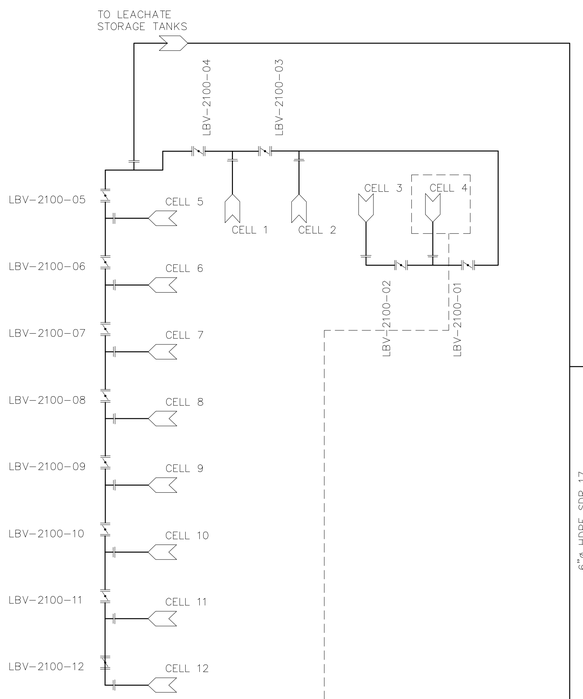
MODEL: SWGO SYSTEMS, MODEL SS700-150 W/ BUILT-IN SURGE SUPPRESSION, (OR EQUIVALENT)

MT-2101 01, MT 2102 01
LEAK DETECTION ELEMENT

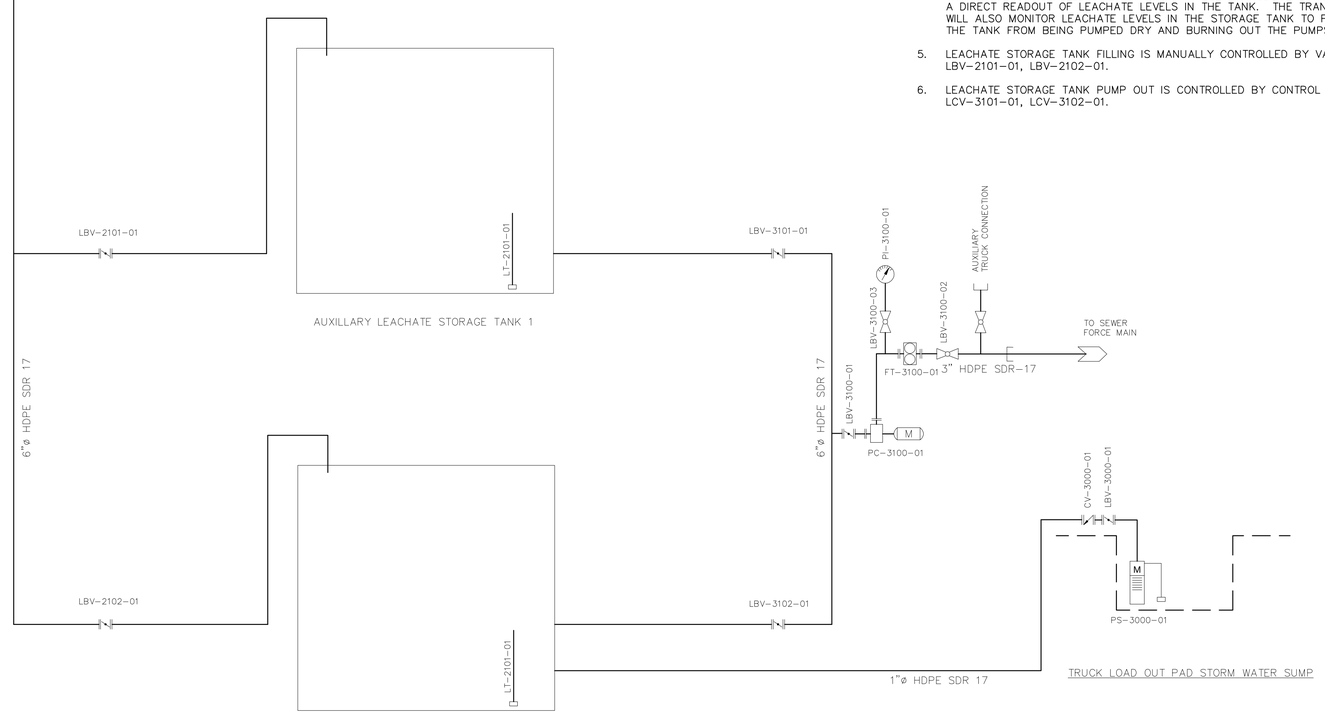
MODEL: BAUMER ELECTRIC LEAK DETECTION SENSOR, MODEL FDDK23P90Y0 (OR EQUIVALENT)

OPERATIONAL NOTES:

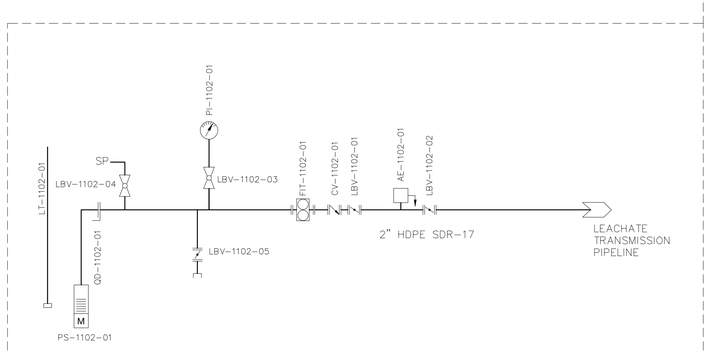
1. SUMP PUMP OPERATION IS CONTROLLED BY LEVEL TRANSDUCERS MOUNTED ON THE SUMP.
2. THE LEVEL TRANSCUDER IN THE LEACHATE COLLECTION SUMP WILL HAVE THREE SET POINTS. THE HIGH LEVEL SET POINT WILL ACTIVATE THE PUMP. THE LOW LEVEL SET POINT WILL TURN THE PUMP OFF. IF THE LEVEL OF LEACHATE IN THE SUMP REACHES THE HIGH HIGH SET POINT, AN ALARM WILL BE ACTIVATED, SIGNALLING POTENTIAL PUMPING PROBLEMS.
3. A TOTALIZING FLOW METER WILL RECORD THE AMOUNT OF LEACHATE PUMPED FROM EACH SUMP.
4. THE LEACHATE IN THE STORAGE TANKS WILL BE MONITORED BY LEVEL TRANSDUCERS INSTALLED IN EACH TANK. THESE TRANSDUCERS WILL PROVIDE A DIRECT READOUT OF LEACHATE LEVELS IN THE TANK. THE TRANSDUCERS WILL ALSO MONITOR LEACHATE LEVELS IN THE STORAGE TANK TO PREVENT THE TANK FROM BEING PUMPED DRY AND BURNING OUT THE PUMPS.
5. LEACHATE STORAGE TANK FILLING IS MANUALLY CONTROLLED BY VALVES LBV-2101-01, LBV-2102-01.
6. LEACHATE STORAGE TANK PUMP OUT IS CONTROLLED BY CONTROL VALVES LCV-3101-01, LCV-3102-01.



LEACHATE TRANSMISSION PIPELINE



LEACHATE STORAGE FACILITY



CELL 2 LEACHATE COLLECTION SUMP PUMP CONFIGURATION

REV	DATE	DESCRIPTION	DRN	APP

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PH: 407.886.2920

TITLE: LEACHATE MANAGEMENT SYSTEM
MECHANICAL FLOW DIAGRAM

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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DATE

ERIK J. NELSON - LICENSE NO. 60492

DESIGN BY:	EJN	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	EJN	FILE:	FL1229.02P210
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	EJN	21 OF 22	

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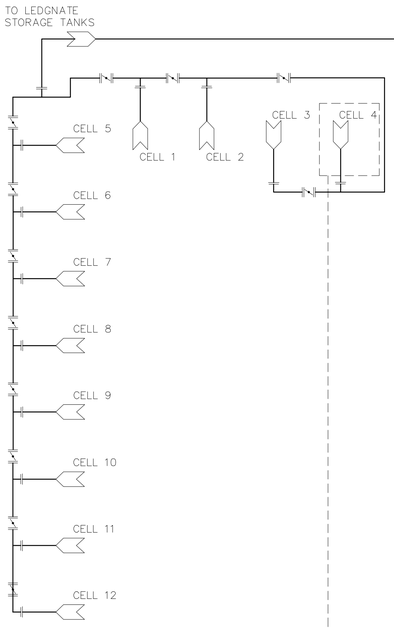
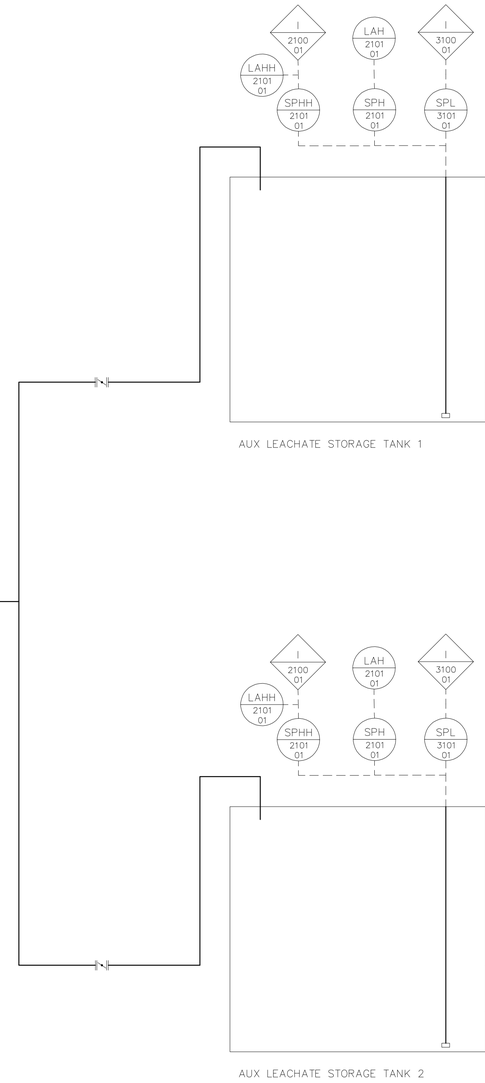
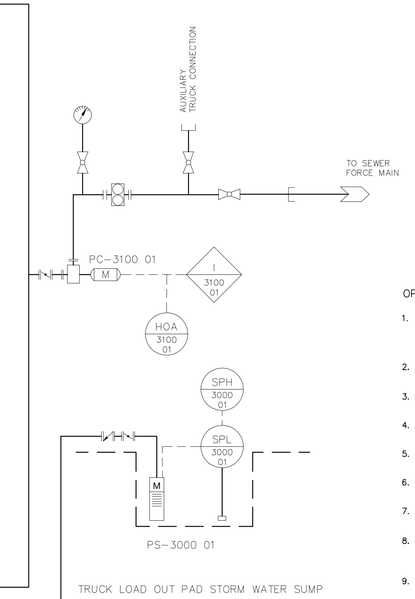
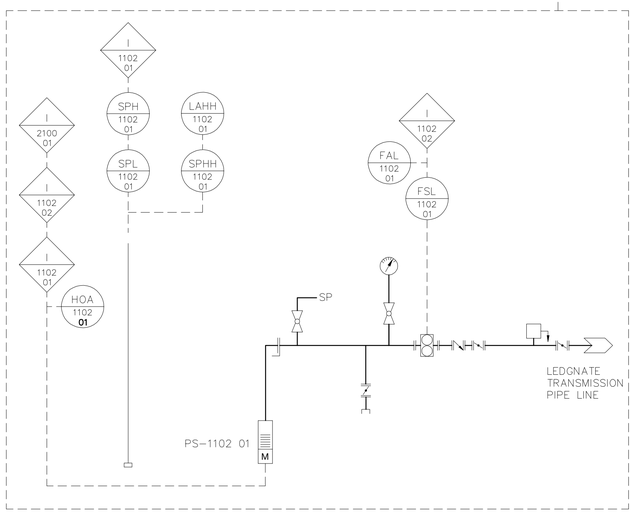


LEACHATE TRANSMISSION PIPELINE







CELL 4 LEACHATE SUMP
PROCESS AND INSTRUMENTATION DIAGRAM

OPERATIONAL NOTES:

1. ALL EQUIPMENT, INSTRUMENTATION AND PROCESS TAGS ON THIS DIAGRAM DESIGNATED AS XX WILL CORRESPOND TO THE TWO DIGIT NUMERICAL DESIGNATION FOR THE CELL IN WHICH THAT EQUIPMENT IS INSTALLED, E.G. SPH-11XX 01 FOR CELL ONE WILL BE SPH-1101-01, AND SPH-11XX-01 FOR CELL FOUR WILL BE SPH-1104-01.
2. SET POINTS, SPH-11XX-01 (HIGH LEVELL) AND SPL-11XX-01 (LOW LEVEL) WILL START AND STOP, RESPECTIVELY, THE LEACHATE PUMP (PS-11XX-01) IN THE LEACHATE SUMP.
3. HIGH HIGH LEVEL SET POINT SPHH-11XX-01 WILL ACTIVATE AN ALARM TO INDICATE THAT THE MAXIMUM LEACHATE LEVEL IN THE PRIMARY LEACHATE SUMP HAS BEEN EXCEEDED.
4. THE FLOW METER SHALL BE EQUIPED WITH A LOW FLOW SENSOR FSL-11XX-01 THAT WILL SHUT DOWN THE PRIMARY LEACHATE PUMP IF A LOW FLOW CONDITION IS DETECTED.
5. COMMUNICATION BETWEEN THE LEACHATE STORAGE AREA AND THE INDIVIDUAL SUMP PUMP CONTROL PANELS WILL BE ACCOMPLISHED WITH A RADIO TELEMETRY SYSTEM.
6. LEACHATE STORAGE TANK FILLING IS MANUALLY CONTROLLED BY VALVES LBV-2101-01, LBV-2102-01.
7. LEACHATE STORAGE TANK PUMP OUT IS CONTROLLED BY CONTROL VALVES LCV-3101-01, LCV-3102-01.
8. IF HIGH LEVEL SET POINTS (SPH-2101-01, SPH-2102-01) ARE ACTIVATED, AN ALARM (LAH-2101 01 THROUGH LAH-2102-01) WILL BE ACTIVATED TO NOTIFY THE OPERATOR THAT THE TANK IS FULL.
9. IF EITHER HIGH HIGH LEVEL SET POINT (SPHH-2101-01 OR SPHH-2102-01) ARE ACTIVATED THEN THE LEACHATE SUMP PUMPS WILL BE SHUT DOWN.
10. IF EITHER LOW LEVEL SET POINT SPL-2101-01 OR SPL-2102-01 ARE ACTIVATED AN ALARM WILL BE ACTIVATED TO ALERT THE OPERATOR THAT THE PUMP OUT VALVE FOR THAT STORAGE TANK NEEDS TO BE CLOSED.
11. IF BOTH LOW LEVEL SET POINTS ARE ACTIVATED THEN INTERLOCK I-3100-01 WILL SHUT DOWN TRUCK LOADING PUMP PC-3101-01.

REV	DATE	DESCRIPTION	DRN	APP

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TITLE: LEACHATE MANAGEMENT SYSTEM
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT: PERMIT MODIFICATION DRAWINGS

SITE: VISTA CLASS III LANDFILL
APOPKA, FLORIDA

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SIGNATURE

DATE

ERIK J. NELSON - LICENSE NO. 60492

DESIGN BY:	EJN	DATE:	27 JULY 2007
DRAWN BY:	JWO	PROJECT NO.:	FL1229.02
CHECKED BY:	EJN	FILE:	FL1229.02P220
REVIEWED BY:	KBT	DRAWING NO.:	
APPROVED BY:	EJN	22 OF 22	

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Attachment 4:

Updated Operation Plan

Updated Operations Plan

Vista Landfill, Class III Facility
Apopka, Florida

Prepared for:

WASTE MANAGEMENT INC. OF FLORIDA

Vista Landfill, LLC
242 West Keene Road
Apopka, Florida 32703

Prepared by:

100 East Pine Street, Suite 605
Orlando, Florida 32801

February 2011

2/17/11
James E. Golden, P.G.
Principal
Hydrogeologist
Florida PG 945
HSA Golden
100 East Pine Street,
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Orlando, Florida
32801

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ATTACHMENTS

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ATTACHMENT B	GAS MONITORING REPORT FORM
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1 - District Manager
1 - Environmental Protection Manager
1 - Market Area Engineer
1 - Site Manager/Operations Supervisor – Trained Operator and Trained Spotter
2 - Scale house Operators – Trained Spotters
3 - Trained Operators
3 - Trained Spotters
2 - Laborers

A list of personnel is attached as Attachment A.

2.1.1 Employee Training

A trained operator shall be on duty whenever the facility is operating and at least one trained spotter shall be on duty at all times that waste is received at the site to inspect the incoming waste. The operator(s) and spotter(s) of the Class III disposal area at Vista Landfill are trained in accordance with the requirements of Rule 62-701.320(15), F.A.C. Further, trained personnel are aware of, have access to, and will substantially comply with at all times, this operations plan. The operators shall be properly trained to operate the facility and the spotters shall be trained to identify and properly manage any hazardous or prohibited materials that are inadvertently received at the Class III disposal facility. Any trained operator at Vista Landfill shall complete 24 hours of initial training, and shall pass an examination as part of that training. Within three years after passing the examination, and every three years thereafter, operators shall complete an additional 16 hours of continued training. A trained spotter at Vista Landfill shall complete 8 hours of initial training. Within three years after attending the initial training, and every three years thereafter, spotters shall complete an additional 4 hours of continued training. The training of the operator and spotter is performed through those courses offered to the public through TREEO training at the University of Florida and other approved sources (see www.treeo.ufl.edu).

Vista Landfill will not employ a person to perform, nor may any person perform the duties of an operator or spotter unless that person is a trained operator or trained spotter, or an interim operator or interim spotter. A trained operator shall be on duty whenever the facility is operating and at least one trained spotter shall be on duty at all times that waste is received at the site to inspect the incoming waste. An interim operator may perform the duties of an operator or spotter, but only under the supervision of a trained onsite operator. An interim spotter may perform the duties of a spotter, but only under the supervision of a trained onsite operator or trained onsite spotter.

An interim operator is a person who has not completed the required 24-hour initial training course, but has, in the opinion of the Vista Landfill Operations Supervisor/Site Manager, shown competency as an operator through a combination of work experience, education and/or training and who has at least one year of experience at Vista Landfill or other similar facility. The determination to grant interim operator status may be made at the time of hiring, based on information provided in the resume or application. Alternatively, the Operations Supervisor/Site Manager may grant interim operator status following work observations.

- 1 – District Manager
- 1 – Compliance and Construction Engineer
- 1 – Site Manager/Operations Supervisor – Trained Operator and Trained Spotter
- 2 – Scale house Operators – Trained Spotters
- 3 – Trained Operators
- 3 – Trained Spotters
- 2 – Laborers

A list of personnel is attached as Attachment A.

2.1.1 Employee Training

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An interim spotter is a person who has not completed the required 8-hour initial training course, but has, in the opinion of the Vista Landfill Operations Supervisor/Site Manager, shown competency as a spotter through a combination of work experience, education and/or training. The determination to grant interim spotter status may be made at the time of hiring, based on information provided in the resume or application. Alternatively, the Operations Supervisor/Site Manager may grant interim spotter status following work observations.

Interim status for operators and spotters is not intended to exceed three months, while the interim status for an operator is not to exceed one year. Additionally, an interim operator should not be used in lieu of a trained operator for more than three consecutive months.

2.1.2 Training Records

The training records are kept at the facility at all times and are available for inspection by Florida Department of Environmental Protection (FDEP), upon request. A list of trained personnel is attached as Attachment A.

2.2 Onsite Structures

On-site structures include an administration building, scale house, and maintenance buildings/ facilities used for equipment repair. The scale house is located near the entrance to the facility along the north property boundary.

2.2.1 Communications

Communication equipment at Vista Landfill, Class III facility consists of telephone service for outside communications and cellular phones or radios for communications between ground personnel and equipment personnel.

3.0 Entrance Procedures

3.1 Control of Incoming Waste

In accordance with Rules 62-701.200(14) and 62-701.300(8)(c), F.A.C, only Class III waste, defined as *construction and demolition debris, processed tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department that are not expected to produce leachate which poses a threat to public health or the environment,* is knowingly accepted for disposal at Vista Landfill, a lined Class III facility. Vista Landfill understands that yard trash cannot be disposed in a lined Class III landfill unless the current solid waste management rules of Chapter 62-701, F.A.C. are revised to allow such disposal.

Vista Landfill does not knowingly dispose of hazardous waste, putrescible waste, liquid wastes, brown goods (small appliances, electronic goods, cathode ray tubes, etc…), or any other non-

Class III waste material. Unacceptable loads are rejected as described in Section 4.2. Once Class III waste has been accepted and unloaded, if any unacceptable waste is found, spotter(s) will proceed to remove unacceptable wastes to a temporary staging area for placement at the end of the working day into containers destined for other facilities properly permitted to receive such wastes. If the generator or transporter of any unacceptable waste can be identified, they may be requested to remove the unacceptable material from the landfill.

3.2 CCA Treated Wood Management Plan

Vista Landfill will recycle or process only clean wood. Painted, treated (preserved), or contaminated wood will not knowingly be recycled or mulched. Chromated copper arsenate (CCA) pressure treated wood will not knowingly be accepted for disposal as construction or demolition (C&D) debris. CCA-treated wood is defined in Rule 62-701.200(11) as lumber, timber, or plywood treated with chromated copper arsenate. The term does not include utility poles unless they have been ground, chipped, or shredded.

This CCA-Treated Wood Management Plan is designated to minimize the amount of CCA-treated wood that is delivered to or disposed at the facility. The following methods and efforts will be used to separate CCA-treated wood from other C&D debris:

A. Identification of CCA-treated materials by trained spotters or operators:

   1. All wood fencing, decking, or pressure treated lumber (such as 4”x4” posts) will be considered CCA-treated;

   2. Wood with a greenish color; and

   3. Other known outdoor-use wood products (including utility poles).

B. Signage will be posted at the scales or entrance to the facility clearly stating that no CCA-treated wood wastes will be accepted.

C. The facility gate attendees will reject known segregated loads of CCA-treated wood wastes.

D. Spotters or operators that identify any CCA-treated wood as described above will remove the wood from the working face and place it into a reject waste container for proper disposal in a lined landfill.

Other CCA treated wood identification methods may be used as they are developed. The facility will also follow the best management practices recommended in the document *Guidance for the Management and Disposal of CCA-treated Wood* authored by the Florida Center for Solid Waste Management and FDEP. A copy of this guidance is attached in Appendix B. Facility gate attendees and spotters/operators will be trained at least annually on the requirements for this management plan and the CCA-Treated Wood Guidance document, which includes training templates.

In accordance with Rule 62-701, F.A.C., CCA-treated wood shall not be incorporated into compost or made into mulch, decorative landscape chips, or any other wood product that is applied as ground cover, soil, or soil amendment. CCA-treated wood shall not be disposed of through open burning or through combustion in an air curtain incinerator.

Vista Landfill will maintain records of the following:

1. Approximate volumes of weights of treated wood removed and disposed of at a Class I or lined Class III landfill

2. The name of the landfill used for disposal

3. CCA-treated wood management training records for the operator and spotter

4. Results of the monthly spot checking program (if required).

These records will be kept with other operation records of the facility and maintained as required by the facility's permit or applicable rules.

3.3 Hours and Days of Operation

Typical hours for acceptance of waste are:

Monday through Friday 7:00 am to 6:00 pm
Saturday 8:00 am to 12:00 pm

The actual hours of operation are posted at the main entrance to the facility. The facility is closed on Sundays and designated holidays. Access by all vehicles shall be via a single secured site entrance. The entrance allows for safe and orderly traffic flow into and out of the facility. Public access and receipt of waste occurs only when an attendant is on duty.

3.4 Weighing of Incoming Waste

All solid waste accepted at the facility is weighed. Tare weights of the trucks will be determined as the emptied vehicle leaves the site. Tare weights for waste haulers that regularly visit the site are recorded so that they do not need to be weighed each time they leave the site unless specifically required by contract or to meet facility needs. Invoices are based on the weight of waste disposed.

4.0 TRAFFIC CONTROL AND UNLOADING

4.1 Facility Access Control and Security

Traffic into and out of the site is controlled by the use of a single public entry, a complete perimeter 6-ft. chain link fence with a locking gate, and an attendant present during operating hours. There is a sign at the site entrance with an emergency contact name and phone number. Gates at all roadway points are kept locked outside of normal working hours. All refuse traffic is required to pass by the scale house to gain entry to active portions of the landfill. Public access and receipt of wastes occur only when an attendant is on duty. Additionally, signs indicating "no trespassing" are installed on the perimeter fencing and at each fence corner.

Once vehicles delivering wastes have been weighed, they follow signs posted along the access road(s) to the currently active areas of the facility. Trucks then proceed to and deposit trash at the appropriate working face. Signs and Scale house personnel direct small public vehicles to unload their loads in the appropriate disposal area.

The landfill access road and other on-site roads are maintained to allow access to monitoring devices and stormwater controls and for landfill inspections and fire fighting.

4.1.1 Access to and Unloading at the Active Face

Waste haulers are directed from the controlled entrance point to the working face by use of signage and facility personnel directing drivers when and where to enter, unload, and leave. A spotter or interim spotter directs traffic to the proper waste unloading location at the active face. Operator/spotters perform load spotting as the waste is deposited and additional spotting as the waste is spread and compacted.

A spotter is stationed at each working face at all times when the landfill receives waste in order to screen for any unauthorized materials. The equipment operator may serve as the spotter. The operator then spreads the waste and performs additional spotting during each pass while compacting the waste. If the spotter or operator is located on heavy equipment spreading the waste at the working face of the landfill when unauthorized waste is discovered, the equipment operator shall either move the unauthorized waste away from the active area for placement in the appropriate container or shall stop the operation and notify another person on the ground, or another equipment operator to remove the unauthorized waste for placement in the appropriate reject waste container, before operations are resumed.

4.2 Signs, Traffic Flow

Signs are utilized to inform the public of important information concerning Vista Landfill. Signs are placed near the entrance of the landfill to provide information concerning name of operating authority, traffic flow, operating hours, and restrictions or conditions of disposal.

Traffic control and safety requirement signs are located at and near the entrance and throughout the facility as required.

4.3 Random Load Checking Program

To monitor the waste received at Vista Landfill, a load-checking program to detect and discourage attempts to dispose of unauthorized wastes at the facility is implemented. The load-checking program consists of the following minimum requirements specified in Section 66-177(1)(k), SWMO and Rule 62-701.500(6)(a), F.A.C., and is described below. The Facility Operations Manager implements the program.

1. Landfill personnel examine at least three random loads of solid waste delivered to the landfill each week. The waste collection vehicle drivers selected by the inspector are directed to discharge their loads at a designated location within the landfill. A detailed inspection of the discharged material is then made for any unauthorized wastes.

2. If unauthorized wastes are found, Vista Landfill will contact the generator, hauler, or other party responsible for shipping the waste to the landfill to determine the identity of the waste sources.

4.4 Recording Random Inspection Results

Information and observations from each random inspection are recorded in writing and retained at the site for at least three years. The recorded information includes, at a minimum, the following information:

1. Date and time of the inspection.
2. Names of the hauling firm and the driver of the vehicle.
3. Vehicle license plate number.
4. Source of waste, as stated by the driver.
5. Observations made by the inspector during the detailed inspection.

The written record is signed by the inspector.

4.5 Management of Hazardous Wastes

If any regulated hazardous wastes are identified by random load-checking, or are otherwise discovered to be improperly deposited at the landfill, the operator will promptly notify the following parties:

1. Florida Department of Environmental Protection: 407-894-7555 / 407-893-3328.
2. Other agencies, as required.
3. The person responsible for shipping the wastes to the landfill.
4. The generator of the wastes, if known.

The area where the wastes are deposited will be immediately restricted from public access. If the generator or hauler cannot be identified, the District Manager (DM) or Operations Supervisor (OS) will assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility. Subsequent shipments from sources found or suspected to be previously responsible for shipping regulated hazardous waste will be subject to precautionary measures prior to the facility accepting wastes.

4.6 Management of Asbestos

Asbestos-containing materials, non-friable and friable, are accepted and disposed at Vista only under specific conditions. The asbestos waste generator/hauler must notify the DM or OS prior to transporting the asbestos waste. The asbestos is disposed of in designated and recorded areas. The asbestos is then carefully covered in a manner so that neither equipment nor personnel come in contact with the waste.

5.0 Waste Records

The Scale Attendant records, in tons per day, the amount of solid waste received at the site. Waste reports will be compiled quarterly, and copies will be provided to the City of Apopka and FDEP annually, by January 20th.

Quarterly Waste Quantity Reports are submitted to:

Tom Lubozynski, P.E.	R. J. "Jay" Davoll, P.E.
Solid Waste Section	Community Development Dept.
Florida DEP	City of Apopka
3319 Maguire Blvd., Suite 232	120 E. Main St., 2nd Floor
Orlando, FL 32803	Apopka, FL 32704

or via electronic mail to

Tom.Lubozynski@dep.state.fl.us	jdavoll@apopka.net

or via facsimile to

(407) 893-3124	(407) 703-1791

6.0 Method and Sequence of Filling Waste

6.1 Basic Operations

Generally, waste placement and ongoing operations are screened from view as practical. Solid waste is placed into cells to construct horizontal lifts. The solid waste will continue to be placed in layers and compacted using landfill equipment. Lift depth may vary depending on specific

conditions, daily volume of waste, width of working face, and good safety practices. The compacted waste will continue to be graded with slopes not to exceed 3H:1V. Access roads have maximum slopes of 10% in order to readily allow vehicular access to the working face even during inclement weather conditions. The working face is maintained to minimize the amount of exposed waste and initial cover necessary at the end of the week.

The landfill development sequence is illustrated on the Permit Drawings and is shown in Figure 3. Waste disposal activities will continue until the final grade elevations have been reached. The final grades are also illustrated on the permitted plans.

6.1.1 Filling Procedures

The refuse cell is the basic building block of a landfill. It is composed of several compacted layers of waste and enclosed by cover material. Basic instructions for constructing the refuse cell are outlined below.

6.1.2 Working Face

The working face is the portion of the uncompleted cell on which additional waste is spread and compacted. The working face is kept as small as practical to minimize equipment movement, cover material requirements, and the area of exposed waste, thus reducing blowing litter, vector problems, and operation costs. The optimal daily working face width varies depending on the number of vehicles bringing waste to the site. The working face is kept wide enough to prevent a large backlog of trucks.

In order to facilitate proper dumping and waste placement operations, multiple working faces may be required to accommodate commercial non-tipper trailers, commercial tipper trailers, other commercial vehicles, and non-commercial vehicles.

The Operations Supervisor/Site Manager has the discretion to utilize multiple working faces on an as-needed basis, depending on site conditions. If separate working faces are used, a spotter or operator/spotter will be present at each.

6.1.3 Dumping

When top dumping, the waste is dumped as near to the edge of the active working face as safe operations permit. For safety reasons, a minimum 8 to 10 ft separation is maintained between the waste trucks and the landfill equipment.

When bottom dumping, the waste is dumped near the toe of the working face and pushed up the slope. Truck separation, as discussed above, is maintained.

6.1.4 Pushing, Spreading and Compacting

Proper cell construction involves pushing, spreading, and compacting. These functions are accomplished with a bulldozer and/or a compactor. Solid waste at Vista Landfill is spread in

layers approximately three feet thick and compacted using suitable heavy equipment. Bulky materials that are not easily compacted are worked into other materials as much as practical.

6.1.5 Cover

6.1.5.1 Initial Cover

The initial cover will be applied and maintained in accordance with Section 66-177(1)t, SWMO, and Rule 62-701.500(7)(e)(2) F.A.C. A 6-inch thick initial cover is placed on top of the waste at the end of each week's operation in order to mitigate blowing litter and aid in control of odors. An alternative weekly cover in the form of geosynthetic material, tarpaulin, or other approved materials such as 50:50 mix of soil: mulch may be applied to the active face at the conclusion of each working week.

6.1.5.2 Intermediate Cover

Intermediate cover, consisting of 12 inches of soil, shall be applied and maintained within 7 days of cell completion if additional waste will not be deposited within 180 days of cell completion. In accordance with Rule 62-701.500(7)(f), all or part of the intermediate cover may be removed before placing additional waste or installing the final cover.

6.1.5.3 Final Cover

Areas of the landfill which have been filled to design dimensions shall receive final cover within 180-days after attaining final elevation or in accordance with the closure plan for the landfill. The final cover will be constructed in accordance with Section 66-177(1)t, SWMO and Rule 62-701.600(5)(g) F.A.C. The barrier layer to be installed will either be a geosynthetic clay liner (GCL) or 40-mil linear low-density polyethylene (LLDPE). The barrier layer will be installed over a 6-inch, minimum, soil layer, and overlain by 18-inches of cover protective soil, and 6-inches of compost or topsoil capable of sustaining a good stand of grass. A geocomposite drainage layer will be placed above all or parts of the barrier layer, depending on the specific barrier layer selected at the time of closure.

6.2 Scavenging

Uncontrolled and unauthorized scavenging is not allowed at this facility. However, controlled removal by landfill personnel of recovered material for recycling may be permitted.

6.3 Storm Water Control during Waste Filling

During waste placement activities, storm water collected within a landfill cell with waste fill elevations below natural grade is treated as leachate and managed through the leachate collection system for the landfill. Once waste fill elevations are above natural grade and intermediate cover is in-place, storm water run-off is diverted to the storm water perimeter ditch for the landfill. Accumulated storm water within an inactive landfill cell that does not come in contact with

waste is pumped to the storm water management system (e.g., storm water perimeter ditch or storm water ponds) for the landfill.

7.0 Equipment

7.1 Heavy Equipment and Support Equipment - Number, Type, Use

Based on the available range of handling capacities and the initial projected waste receipts, the allocation of heavy equipment presented in Table 1 is sufficient to handle the wastes received at the facility. The primary functions of heavy facility equipment are spreading and compacting solid waste, and excavating, hauling, and spreading cover material. Equipment similarities allow different equipment to perform the same function as necessary. For example, when a compactor breaks down, a bulldozer can perform the compacting operation.

Support equipment is present at the site most of the time, but some may be off-site, temporarily out of service, or rented for a specific occasion. An on-site water truck is normally positioned close to the working face for fire protection. This water truck is also equipped with spray bars for dust control. A utility mower is fitted with attachments for mowing grassed areas. A backhoe/loader is available to assist in maintaining drainage courses and ditches, and for other site maintenance duties.

Equipment makes, models, and quantities listed on Table 1 are subject to change as facility needs or requirements change.

Table 1 – Equipment Inventory.

Equipment Description	Use
Cat 950G	Loader
Cat D8R	Dozer
Cat D6R	Dozer
Cat 826G	Compactor
Volvo 710A	Grader
Cat 420D	Backhoe
Ford F450	Service truck
Volvo A30D	Dump truck
Kubota M7030 SUDT	Tractor
Street Sweeper	Entrance road cleaning
Ford 1998	3000 Gallon water truck
Cat VC60D	Forklift
Kubota F2100	Mower

7.2 Back-Up Equipment

The equipment selection guide indicated in Table 1 is adequate even if one of the pieces of equipment is temporarily out of service. If a piece of equipment is out of service for an extended

period or if additional equipment is required on a temporary basis, this equipment is available for rental nearby and can normally be available at the site within 24 hours.

7.3 Equipment Care

Routine preventive maintenance minimizes equipment downtime and increases equipment service life. Preventive maintenance varies with each piece of equipment. Therefore, the appropriate operation and maintenance (owner's) manual should be consulted. However, three applicable maintenance activities implemented at the site are:

- A routine inspection program;
- Routine Lubrication
- Maintenance records upkeep.

7.4 Notification in Case of Equipment Failure

If there is an equipment failure that will disrupt normal operations for more then 24 hours, the Central District office of FDEP must be notified:

Tom Lubozynski, P.E.
email: Tom.Lubozynski@dep.state.fl.us
phone: (407) 894-7555 / (407) 893-3328
facsimile: (407) 893-3124
address: Florida Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

8.0 Environmental and Operational Controls

8.1 Stormwater Control

Stormwater management within the active portion of the landfill is achieved by grading all working face areas so that stormwater will be diverted into a ditch at the landfill base channel or directly into the stormwater basin(s). This facility has no off site discharge of stormwater.

8.2 Dust Control

Dust is controlled in land filling areas at Vista Landfill by water truck and by establishing vegetative cover on areas within final and intermediate cover. Entrance roads are paved to a point beyond the scale house to minimize dust and sediment from being tracked onto the highway.

8.3 Vector Control

Vector control consists of maintaining a clean site, waste screening, constructing sufficient initial and intermediate cover, and minimizing ponded water in areas of landfill cover. Proper compaction of wastes eliminates many of the breeding areas used by these pests during the work week. Proper implementation of the drainage design inhibits ponding on the site.

8.4 Noise Control

Operational measures, such as construction of temporary berms, may be used to reduce noise generated at the site. Noise will be minimized to the best practical extent; however, some noises will continue to be present such as back-up alarms and other measures which are required by the Occupational Health and Safety Administration (OSHA) for safety.

8.5 Litter Control

A litter control policy is employed to minimize litter from leaving the working face of the landfill. Portable fences may be used, where necessary, to control blowing litter in the active landfilling areas. The litter that escapes the portable fences, or the inbound vehicles, and blows to other areas of the property is picked up on a daily basis.

Litter is policed in the immediate proximity of the landfill, as necessary, to control any problems which may arise from debris blowing from trucks traveling along West Keene Road to the landfill. Vista Landfill employees observe West Keene Road daily, and often several times each working day. The litter along West Keene Road is picked up at least weekly, from Clarcona Road to the facility entrance, or more often if necessary, as evaluated by employee observation. Vista Landfill understands that it is part of a community, and that litter policing is part of being a good neighbor within that community.

8.6 Fire Control

Fire protection procedures include maintaining soil stockpiles in the vicinity of the working face. The cover used in the landfill operation provides an effective firewall.

Should a fire occur at the landfill, the application of soil will be used to cut off the flow of oxygen into the burning areas. The local fire department will be contacted to assist site personnel and equipment. Appropriate fire extinguishers are carried on the equipment at all times and can be used to control any small equipment fire that may occur. Greater detail for dealing with fires is given in Section 9.1 of this plan.

8.7 Gas Control

Vista accepts, and will continue to accept, only Class III materials which generate low levels of methane gas in comparison to generation rates at Class I landfills. The gas monitoring system

will consist of 25 permanent gas monitoring probe locations in total build-out, as shown on the site plan presented in Figure 4. The gas probes are monitored on a quarterly basis for explosive gas content. Additionally, on-site structures are monitored quarterly.

Action must be taken whenever the measured methane concentration in soil monitoring probes exceeds the Lower Exposure Limit (LEL) for combustible gases at or beyond the landfill property boundary or exceeds 25% of the LEL in onsite structures. If the results of monitoring show that combustible gas levels exceed these concentrations, either the Site Engineer or the Compliance Manager will:

1. immediately take all necessary steps to ensure protection of human health and notify the Department;
2. submit a gas remediation plan to the Department within 7 days of the exceedance;
3. complete remediation within 60 days of exceedance, unless otherwise approved by the FDEP.

Quarterly methane monitoring reports, using the form in Attachment B, are reviewed by the Site Engineer or Compliance Manager and submitted to the FDEP at the following address:

Tom Lubozynski, P.E.
Solid Waste Section
Florida Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

or via electronic mail: Tom.Lubozynski@dep.state.fl.us or facsimile: (407) 893-3124.

In the event that a permanent gas probe is not available for sampling, a "bar hole" is created in the vicinity of the damaged or missing probe by hammering a 3-foot long by ½-inch diameter metal "bar" into the ground the full length of the bar (i.e., three feet), and removing it, thus creating a "hole." Methane concentration is measured in this bar hole by inserting the instrument probe into the void and aspirating sample gas through the meter for 20-30 pumps on the aspirator bulb. If methane is encountered, aspiration continues until a steady-state reading is obtained, typically within 20 pumps and always within 30 pumps. If no methane is encountered, aspiration is concluded after 30 pumps and "0%" is recorded.

Every attempt is made to replace a damaged or missing gas probe within a reasonable time frame, typically before the next quarterly sampling event. However, site conditions such as construction may make this time frame impractical to achieve. Vista Landfill uses drilling vendors to replace permanent gas probes. Two vendors are listed below; however, other vendors may be used.

The Colinas Group
509 North Virginia Avenue
Winter Park, FL 32789
(407) 622-8176

HSA Golden
100 East Pine Street, Suite 605
Orlando, FL 32801
(407) 649-5475

8.8 Odor Control and Monitoring

Class III waste materials do represent a potential for the generation of odorous gasses. Most commonly, the odors are derived from the anaerobic decomposition of gypsum wallboard, which forms hydrogen sulfide (H_2S) gas. The following sections address Vista Landfill's routine control, monitoring, and response procedures for odors caused by H_2S.

8.8.1 Landfill Design and Operation

The primary lines of defense against odor generation are design and operation. The Class III landfill has been designed with base grades that remain above the seasonal high water table and with final grades that help shed stormwater runoff. This design helps to minimize the potential for saturating the waste, which could subsequently lead to odor generation. Operations at Vista Landfill ensure that waste is compacted and graded to remain consistent with the intent of the design. Attention to waste placement, compaction, grading, covering and surveying will help maintain this record. Any poorly drained or ponded areas on top of the waste should be regraded in a timely manner.

8.8.2 Weather

Another important factor that affects odor generation and transport is weather. Understanding seasonal and daily weather patterns can assist the understanding of what may be happening to transport odors once they are generated. Radiation inversions have been identified as an atmospheric condition that can trap odors near the ground, preventing dispersion. These inversions are caused when air near the ground surface is cooled more rapidly than the air above it. So, they are strongest just before daylight and during periods of clear skies and light winds.

The Operations Supervisor/Site Manager or Compliance Engineer record weather data from the on-site weather station on the Odor Survey Form (Attachment C). These daily weather logs are maintained on site and are available for review by FDEP and the City of Apopka upon request.

8.8.3 Odor Surveying

At least once daily, Vista Landfill personnel patrol the property to detect and document odors. Attachment C provides a log for the odor patrol. The log includes information such as odor descriptors and locations. Additionally, staff should perform the patrol as early as possible in the day to document what will likely be the worst-case weather conditions for odors. If a moderate or strong odor is detected near the property line, staff may proceed off site in an effort to document the lateral extent (or off site source) of the odor. Vista Landfill personnel will not enter onto private property for odor studies without the consent of the property owner.

Odor surveying may also be supplemented by use of a hydrogen sulfide meter to quantify hydrogen sulfide concentrations (see section 8.8.4 for discussion of H_2S meter use).

8.8.4 Odor Complaints

Attachments D and E provide a mechanism to log and track odor complaint calls received by Vista Landfill at its main telephone number: 407-886-2920. Complaints are logged and compared to Vista Landfill's own odor observations and daily odor log. The Vista Landfill Operations Supervisor/Site Manager or Compliance Engineer will acknowledge complaints within one business day and address them within three business days.

Vista Landfill strives to be an environmentally conscientious neighbor and take appropriate responses to odor complaints. The initial response is to cover waste. Any eroded cover will be addressed first, followed by the minimization of working face (as much as practical) by the application of initial cover. Other responses include dispersal of granular deodorizer or monitoring and recording H_2S concentrations around the perimeter of the landfill or at offsite locations using a hydrogen sulfide meter. The Operations Supervisor/Site Manager or Compliance Engineer will determine an appropriate response to any given complaint.

Several levels of analysis are used to determine an appropriate response to a complaint. The first level of analysis is the comparison of complaints to weather data. An analysis of the wind strength and direction during the time of the odor problem may help verify or refute that Vista Landfill is causing odors. Other patterns may be identified to help explain the cause of the odors. For example, odors may be noticed following rain events, or during periods of low pressure. Data gathered during the daily odor monitoring is also evaluated. Data from monitoring and recording H_2S concentrations around the perimeter of the landfill or at offsite locations using a hydrogen sulfide meter may also be evaluated.

Vista Landfill may conduct monitoring and recording of H_2S concentrations around the perimeter of the landfill or at offsite locations using a borrowed or rented hydrogen sulfide meter. Hydrogen sulfide meters, such as the Jerome 631-X or other similar meter, are available from the Waste Management Southern Group office located in Atlanta, GA, (770) 805-4130, or a meter may be borrowed or rented from the following companies:

HSA Golden
100 East Pine Street, Suite 605
Orlando, FL 32801
Tel: 407-649-5475

Grove Scientific & Engineering
6140 Edgewater Drive, Suite F
Orlando, FL 32810
Tel: 407-298-2282

Alternatively, Vista Landfill may employ the services of a qualified professional to monitor and record H_2S concentrations around the perimeter of the landfill or at offsite locations.

8.9 Water Quality Monitoring

Groundwater and leachate are monitored in accordance with the requirements of FDEP and City of Apopka Operating Permits and Standard Operating Procedures (SOPs), as applicable. Extensive water quality monitoring is conducted at Vista Landfill on an annual (for leachate) and semiannual (for groundwater) basis. The water quality monitoring locations are shown on the Permit Drawings. The Water Quality Monitoring Plan for the Vista Landfill provides detailed sampling and collection procedures in accordance with Rule 62-701.510, F.A.C.

Surface water monitoring is not required for the Vista Landfill in accordance with the current solid waste permit for the site.

8.10 Erosion Control

The landfill is inspected daily using the form in Attachment C. Corrective action to repair areas of erosion where waste is exposed or which cause malfunction of the storm water management system will be implemented within three days of occurrence. If the erosion cannot be corrected within seven days of occurrence the landfill operator will notify FDEP with a proposed correction schedule.

8.11 Leachate Containment and Control

Vista Landfill is equipped with a geomembrane liner system. Any liquid entering the landfill that may have contacted waste is collected in a Leachate Control System (LCS). The LCS drains collected liquid to the cell sump. Leachate in the sump is pumped to an auxiliary leachate storage facility with approximately 160,000 gallons of capacity and conveyed to a municipal sanitary sewer line located on West Keene Road for off-site treatment and disposal at the City of Apopka Waste Water Treatment Plant (WWTP) or an alternative WWTP. Quantities of leachate collected by the LCS are recorded in gallons per day at each cell and maintained as part of the landfill operating record.

9.0 Contingency Operations

Contingency operations include emergencies such as fire, natural disasters, and equipment failure. Waste will not normally be delivered to the site during emergency conditions; however, the following procedures will be initiated at the onset of a major event that may cause an emergency.

<u>Emergency Coordinators</u>

Primary: Sheree Grant and Irv Slike, District Managers 407-886-2920
Secondary: Daniel Galaza, Operations Supervisor/Site Manager

9.1 Fire Control Plan

On-site fire protection facilities consist of soil stockpiles in the vicinity of the working face. The initial cover used in the landfill operation provides an effective firewall. Instructions on fire fighting procedures are routinely provided for site personnel. Should fire occur at Vista Landfill, the application of additional cover will be used to cut off the flow of oxygen into the burning area. The local fire department will be contacted to assist Vista Landfill personnel and equipment, if necessary. Appropriate fire extinguishers are carried on the equipment at all times.

9.1.1 When Fire Occurs

The following procedures are followed in the event of a fire at the facility:

1. Extinguish small fires with a fire extinguisher or smother with soil - do not remain near large fires or explosive materials;
2. Determine location, extent, type, and, if possible, cause of fire or explosion;
3. Notify on-site personnel and implement safety and fire control procedures;
4. If the fire cannot be immediately controlled, the following steps should be taken:
   a) Notify facility emergency coordinator
   b) Notify City of Apopka Fire Department (911, or 407-703-1756). Clearly state:
      • Location of facility
      • Location of fire or explosion in facility
      • Extent of fire or explosion
      • Type of fire or explosion
      • Actions now being taken
      • Injuries
   c) Notify rescue squad, if necessary
   d) Notify health care facility, if necessary
5. Notify Florida Department of Environmental Protection within 24 hours via phone (407-894-7555 / 407-893-3328), e-mail (Tom.Lubozynski@dep.state.fl.us) or fax (407-893-3124). A letter must be submitted to FDEP within five days describing how the fire began, what was done to extinguish it and what will be done to prevent future fires.

9.1.2 "Hot Load" Procedures

In the unlikely event that a "hot load" is not identified before entrance into the facility, the following procedures are implemented:

- The truck carrying the "hot load" is directed to dump the load in the landfill but away from the working face;
- The load is placed on top of intermediate cover which provides sufficient protection from the "hot load" and the underlying waste;
- Soil is then spread over the load to smother the "hot load"; and
- The "hot load" is monitored until there is no evidence of smoldering or high temperatures.

At the end of the day, or at a time when the waste has been well extinguished and cooled, the load is worked into the waste placement working face. The designated area for extinguishing the "hot loads" varies depending on the location of the working face, but is always away from the working face.

9.1.3 Fire Extinguishers

Fire extinguishers are installed in the following locations:

- Onsite buildings
- Heavy equipment.

9.2 Hurricane Preparedness

The following is a general guideline that is to be followed before, during and after any hurricane. Due to the nature of these storms, there may be some deviation from this guide. A Hurricane Planning Manual has been included in Attachment F, which provides key procedures regarding landfill facility shutdown in the days prior to landfall of any storm.

The Emergency Coordinator will oversee all preparations for the incoming storm and remain aware of any pending situation by monitoring weather reports. Other Landfill personnel will report to the Emergency Coordinator as follows:

Landfill Alternate Emergency Coordinator
Shop Mechanic/Next Senior Operator
Office Senior Clerk

Adequate cover material soil will be stockpiled. All ditches will be checked and cleaned for adequate flow. All lightweight signs and equipment will be collected and stored in a secure area.

Vista Landfill also has prepared a Hurricane Preparation and Planning Emergency Supplier Response Resource Notebook to be used as a tool to aid Market Area Hurricane Response Managers in their efforts to obtain, manage, and maintain open supply lines for needed goods, materials, and services as part of their hurricane preparation and recovery plan(s). This notebook is available for review by FDEP and the City of Apopka upon request.

10.0 Landfill Final Closure

A separate Closure Plan will be prepared for Vista Landfill at the time of closure. This closure plan will contain a closure report, closure design, closure operation plan, closure procedures, and discussions on long-term care and financial assurance.

10.1 Final Cover System

As shown in the Permit Drawings, the final cover system consists of a geomembrane barrier, a two-foot soil layer, and vegetative cover. The grades of the final cover system are 3H:1V on the side slopes.

10.2 Erosion Minimization on Closed Areas

Erosion of the final cover system is minimized by the establishment of vegetative cover as well as the installation of final cover swales, downchutes, and other surface water management systems. The swales intercept sheet flow from the final cover system and direct the water via downchutes to perimeter storm water ponds.

A vegetative cover is placed on the final cover slopes of the landfill to minimize erosion and reduce soil loss from the surface of the final cover system. Any substantial erosion damage or vegetative stress will be repaired before significant erosion has a chance to develop. Ruts or rills which are six (6) inches or greater in depth are considered substantial.

Corrective action to repair areas of erosion will be implemented within three (3) days of occurrence, weather permitting. If the erosion cannot be corrected within seven (7) days of occurrence, the landfill operator will notify FDEP with a proposed correction schedule.

10.3 Inspections of Closed Area

The final cover system will be inspected quarterly using the form in Attachment C. The inspection will include observations for erosion, vegetative stress, obvious differential settlement, and ponding of water. The surface water control structures will be inspected and cleaned if they become obstructed.

11.0 Financial Responsibility

Proof of financial responsibility is prepared in accordance with FDEP requirements. The final closure cost estimates will be updated annually between January 1 and March 1 by the Site Engineer and/or the Compliance Manager and sent for review and approval to:

Tom Lubozynski, P.E.
Florida Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

Upon receipt of approval of the updated estimate, a revised mechanism in the form of a bond, insurance certificate, or other acceptable financial assurance mechanism to demonstrate financial responsibility will be provided by Vista Landfill.

The revised mechanism is sent to:

Frank Hornbrook
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 4565
Tallahassee, FL 32399

with a copy to:

City of Apopka:
R. Jay Duvall, P.E., City Engineer
City of Apopka
120 East Main Street - 2nd Floor
Apopka, Florida 32703

12.0 Operating Record

In accordance with Rule 62-701.500(3), F.A.C, an operating record shall be maintained at the site including all records, reports, analytical results and notification required by Chapter 62-701, F.A.C, as well as the training verifications required by Chapter 62-701, F.A.C. This record is kept at the facility and is available for inspection by the FDEP and the City of Apopka.

As part of the operating record, waste records are maintained in accordance with Rule 62-701.500(4), F.A.C. These waste records indicate the amount of each type of waste received each day. Waste reports, summarizing the waste records, are compiled monthly and copies are provided to FDEP annually. The waste records are kept at the facility and are available for inspection by the FDEP and the City of Apopka.

The operating record also includes the information and observations resulting from each random inspection of a waste load conducted as part of the load-checking program in accordance with Rule 62-701.500(6), F.A.C.

In addition, to satisfy the requirements of Rule 62-701.500(3), F.A.C, the operating record also includes the following:

- Records of all information used to develop or support the permit applications and any supplemental information required
- Records of all monthly information, including calibration and maintenance records, and water quality records
- An annual estimate of the remaining life and capacity in cubic yards of the existing, constructed facility and remaining life and capacity of other permitted areas not yet constructed (this estimate is reported annually to FDEP).

The operating records are maintained at the facility throughout the design life of the facility.

13.0 Operations of the Yard Trash and Organic Processing and Recycling Facility

13.1 Overview

Vista Landfill includes the operation of a yard trash and a pre-consumer vegetative waste (PVW) organic processing and recycling facility (ORF). The yard trash and PVW received at Vista Landfill will be unloaded in designated delivery areas as shown on Figure 3A. The yard trash will be processed mechanically to reduce the particle size in preparation for mixing with pre-consumer vegetative waste used by landfill operations for erosion control or shipped off site for use as fuel. The PVW will be mixed with the processed yard trash and moved to the active compost area. After the PVW/processed yard trash mixture is composted, it is moved to the curing area. Upon completion of the curing cycle, the compost is moved to the finishing area where it is transported off site to market. The remainder of this section provides a detailed description of the daily operations of the ORF in accordance with the general requirements of Rule 62-709.320 of the F.A.C..

13.2 Description of the Yard Trash and Organic Processing and Recycling Facility

13.2.1 Description of Yard Trash and Pre-Consumer Vegetative Waste

Yard trash will be collected from landscapers, tree service companies, and clearing contractors, as well as yard trash materials collected under curbside collection programs. Also included are clean lumber and pallets. Yard trash as defined in Rule 62-709, F.A.C.:

Yard trash means vegetative matter resulting from landscaping maintenance or land clearing operations and includes materials such as tree and shrub trimmings, grass clippings, palm fronds, trees and tree stumps, and associated rocks and soils. For purposes of this chapter, it also includes clean wood.

Yard trash accepted for processing will not contain significant amounts of rock or soil. Painted, treated, or chemically altered wood or lumber along with other prohibited wastes are specifically excluded.

The pre-consumer vegetative waste will be collected from grocery markets and other produce venues. As defined in Rule 62-709, F.A.C.:

Pre-consumer vegetative waste means source-separated vegetative solid waste from commercial, institutional, industrial or agricultural operations that is not considered yard trash, and has not come in contact with animal products or byproducts or with the end user. This term includes material generated by grocery stores, packinghouses, and canning operations, as well as products that have been removed from their packaging, such as out-of-date juice, vegetables, condiments,

and bread. This term also includes associated packaging that is vegetative in origin such as paper or cornstarch based products, but does not include packaging that has come in contact with other materials such as meat. Plate scrapings are specifically excluded from this definition. These wastes are putrescible waste as defined in Rule 62-709 F.A.C..

PVW accepted at the ORF includes, but is not limited to, the following:

- Vegetative material from retail produce not suitable for sale
- Produce damaged during transport
- Unsold or spoiled produce

13.2.2 PVW and Yard Trash Delivery Areas

The PVW delivery area will be approximately up to 13,000 square feet and includes an area for mixing with processed yard trash. Upon delivery, PVW is mixed with processed yard trash and constructed into an active compost pile. Operations do not include the storage of PVW or PVW mixed with processed yard trash.

The yard trash delivery and processing area will be approximately up to 75,000 square feet and includes a section for deliveries, processing, and storage. Processed yard will be moved to the PVW mixing area as necessary. Any surplus processed will be used as erosion control at Vista Landfill LLC.

Although not expected to occur, at a maximum, any yard trash received at the facility not utilized for mixing with PVW shall be removed within 18 months.

13.2.3 Compost Area Storage Capacity

The active composting area will be up to 165,000 square feet and includes the PVW delivery and mixing area and yard waste delivery and processing areas. The active composting will consist of discrete piles of PVW and processed yard trash moving directly from mixing to a compost pile. Upon completion of the active composting cycle, the product is moved to the curing area where it further stabilizes prior to shipment.

Once completely built out, the target rate of incoming PVW targeted for use in composting is expected to be on average 86 tons per day, five days per week. In addition, it is also expected that an average of 86 tons per day, five days per week average of yard trash will be used in the composting process.

13.2.4 Curing and Finishing Area Storage Capacity

The curing area will be up to 58,000 square feet. Upon completion of the active composting cycle, the PVW/yard compost product is constructed into curing piles. Once cured, compost is moved to finished compost storage area (up to 50,000 square feet). Prompt arrangements are made to transport product off site as dictated by the market.

13.2.5 Active Composting Operation

The active compost area (including the PVW delivery and mixing areas) is constructed with a foundation and surface pavement to support the composting equipment and facilitate proper site cleanup. This pavement surface will be included in the ERP No. 48-0111044-006-EM modification application as described below. Once PVW are delivered, they are mixed using a recipe designed to balance the nutrients necessary for aerobic decomposition. Mixing will be performed by front-end loaders and/or conventional mixing equipment at the designated mixing area. The blended material will be placed into an active composting system designed per selected Vendor. The entire system will be capable of processing 45,000 tons of incoming PVW per year or 173 tons per day of compostable organics when fully built.

The engineered system will use the aerated static pile method of composting with negative aeration and biofiltration. Expected retention time for the active composting phase is approximately 45 days. During the active composting process, the system design is to have the piles turned over and reformed up to three times. The piles are covered between turns. This turning process serves to re-establish good pile porosity and expose new surface area for the microorganisms. A computer-controlled system regulates temperature and airflow to ensure an aerobic environment in the composting mass and ensure thermophillic decomposition. After the active composting phase of 45 days, the compost product is put into curing piles where it continues to compost, cools down, and further stabilizes for about 60 days. Once cured, the finished product will be shipped to landscapers, and horticultural and agricultural users.

The engineered active composting system will use both synthetic and natural covers as part of the composting process during the active composting phase. The synthetic covers are made of a waterproof and UV resistant fabric, designed to provide process control during active composting operations. The covers also provide a barrier to vectors and precipitation, and reduce pile drying.

PVW shall be processed and incorporated into the composting material, or removed from the facility as necessary. PVW, yard trash, or PVW/processed yard trash mixture (i.e., compost) shall not be stored or processed in piles that exceed 12 feet in height. All compostable material accepted by the facility will be processed promptly. It is not expected to store compost for long periods; however, compost will be removed within 18 months. Vista Landfill is authorized under a solid waste landfill permit. As such, FDEP shall authorize on-site storage of compost for longer than 18 months if the owner or operator demonstrates that there is quantifiable use for such material for cover, erosion control, closure, or other similar activities at the permitted facility.

13.3 ORF Stormwater Control

Stormwater management within the ORF is achieved by grading all areas so that stormwater will be diverted into a conveyance system discharging directly into the stormwater basin. This facility has no offsite discharge of stormwater.

13.4 Effective Barrier

The yard trash mulching area and vegetative composting area are located within Vista Landfill, Class III. Access to Vista Landfill by all vehicles shall be via a single secured site entrance. The entrance will allow for safe and orderly traffic flow into and out of the facility. Signs will be posted at the site entrance indicating the name of the facility, name of the operating authority, hours and days of operation. Once vehicles delivering wastes have been weighed or measured, they will follow signs posted along the access road(s). Traffic control and safety requirement signs will be located near the entrance to the facility as required.

13.5 Dust Control Methods

Dust control at Vista Landfill and the Yard Trash Processing Area/vegetative compost area will be performed with the use of a water truck. The water truck is listed in Section 7.1 as standard equipment designated for operation of the Vista Landfill. The access roads and other areas utilized for the handling, processing and storage of yard trash will be watered on an as-needed basis to control dust.

13.6 Fire Protection

Fire control at Vista Landfill is addressed in Part 8.6 of this Operation Plan. In addition, the water truck that will be used for dust control is also equipped with a pump and hose to assist with fire control. Activities involving an open flame shall not be allowed in the vicinity of this operation and, in no case, closer than 50 feet to any stored or processed yard trash or compost. The area would be designated as smoke free, and processing equipment would be fitted with mufflers and appropriate spark arresters.

On-site fire protection facilities consist of soil stockpiles in the vicinity of the yard trash and compost processing area. The initial cover used in the landfill operation provides an effective firewall. Instructions on fire fighting procedures are routinely provided for site personnel. Should fire occur at Vista Landfill, the application of soil cover will be used to cut off the flow of oxygen into the burning area. The local fire department will be contacted to assist Vista Landfill personnel and equipment, if necessary. Appropriate fire extinguishers are carried on the equipment at all times.

The area around any stored materials (processed or unprocessed) will be maintained for access by firefighting equipment. An all-weather access road will be maintained from the facility entrance to the compost area.

13.7 Odor and Vector Control

The ORF will be operated to control odors and vectors. Odor and vector control will be accomplished by following sound management procedures. Incoming feedstocks will be managed to minimize odors and vectors by covering and incorporating material into the process in a timely manner. Once incorporated, a well designed, nutrient-balanced compost mix creates

composting conditions which are generally inhospitable to vectors. During active composting, the active composting system will use a computer controlled negative aeration system and biofiltration to manage and treat process air. Biofiltration is a standard industry method to ensure sound odor management during the active composting process. Air is drawn through the natural and/or synthetic covers, providing oxygen to encourage aerobic composting conditions. The process air then passes into the biofilter where the air is physically and biologically scrubbed to remove any odorous compounds. This technology has been demonstrated to sufficiently control odors and allow a sustainable environmentally-friendly composting process. Additional odor controls may be provided, if warranted.

13.8 Yard Trash Removal

All yard trash received at the Yard Trash Processing Area is planned to be processed into compost. Any surplus processed will be used as erosion control at Vista Landfill or shipped off site for use as fuel.

Although not expected to occur, any yard trash received at the facility, not utilized for mixing with PVW shall be removed within 18 months. Logs with a diameter of 6 inches or greater will be separated and stored apart from the other materials. The logs may be stored for up to 18 months prior to removal.

The Yard Trash Processing Area will accept only yard trash and bags used to collect yard trash. Any other materials discovered within the yard trash shall be placed in containers and removed in accordance with this Operation Plan. All Class I material, other than incidental content and other prohibited wastes will be removed and managed as approved by FDEP.

13.9 Registration

The yard trash processing area is permitted as part of Vista Landfill per the FDEP Permit No. SC48-0165969-014 and SO48-0165969-015 letter dated July 8, 2009. Therefore, in accordance with Rule 62-709.320(1)(c), F.A.C., Vista Landfill does not need to register the yard trash processing area with FDEP. However, the PVW/processed yard trash composting area will be registered in accordance with Rule 62-709.320(1)(a) F.A.C. This registration will be renewed annually (by July 1) until the next solid waste permit renewal or modification, at which time, the composting operation would be incorporated into the solid waste permit.

13.10 Record Keeping and Reporting

Vista Landfill will keep monthly records of the incoming and outgoing yard trash, PVW, and compost material for a period of three years. The records will be maintained on-site. The same units (i.e., either yardage or tonnage) will be used to record the incoming and outgoing material.

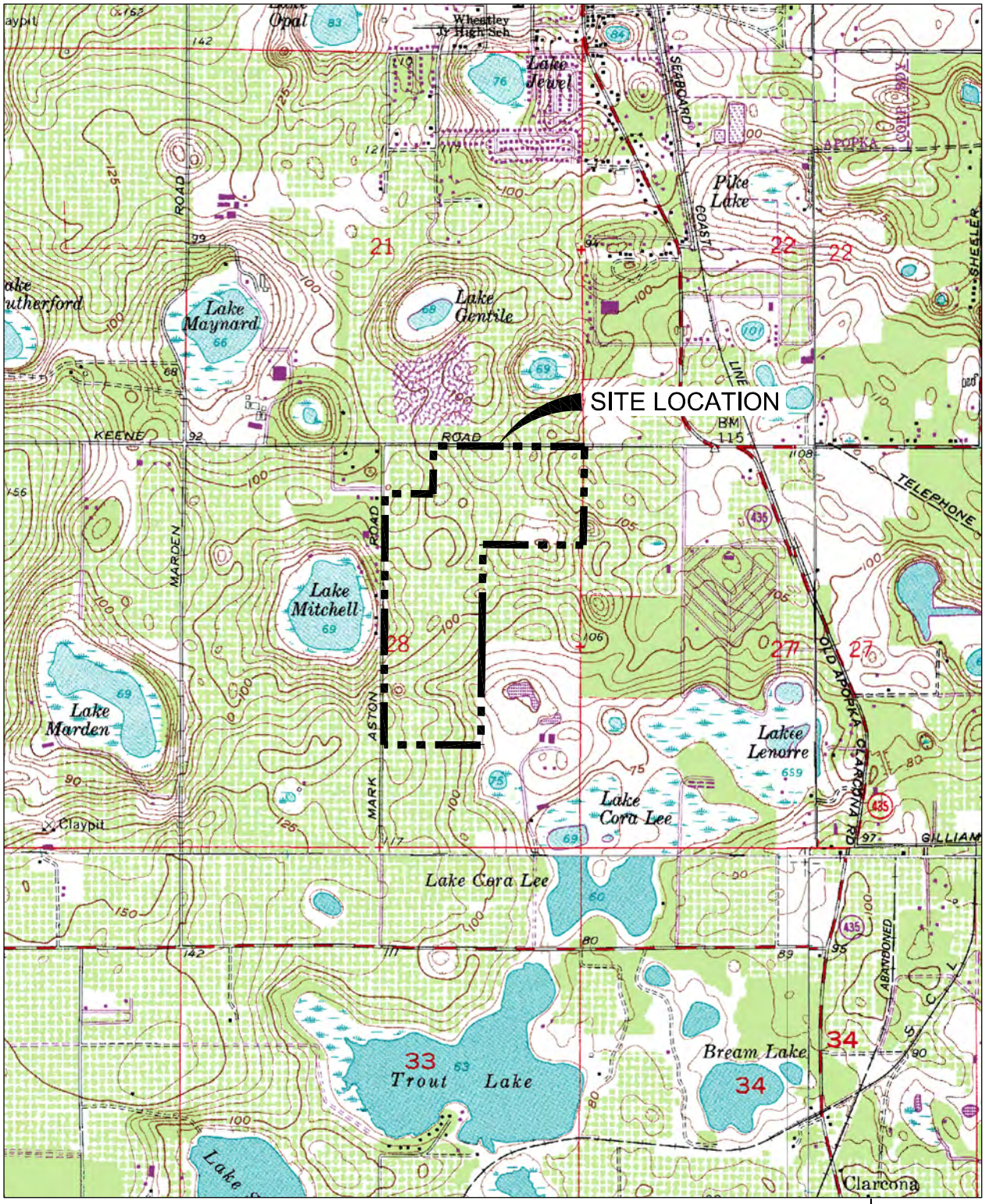
Vista Landfill will submit an annual report that will summarize the monthly records, based on the preceding calendar year. The annual report, based on the previous calendar year, will summarize the monthly records and be submitted to FDEP By July 1 using Form 62-709.320(7)(b).

hsagolden
engineering environmental solutions

Figures

09-574.020-USGS.dwg

DATE: February 2011



USGS TOPOGRAPHIC MAPS: APOPKA, WINTER GARDEN, FOREST CITY & ORLANDO WEST

N

0 1000 2000

DISTANCE IN FEET

hsa golden
engineering environmental solutions
100 EAST PINE STREET, SUITE 605
ORLANDO, FL 32801
P: 407.649.5475 F: 407.649.6582
HSAGOLDEN.COM

VISTA LANDFILL, CLASS III FACILITY
APOPKA, FLORIDA

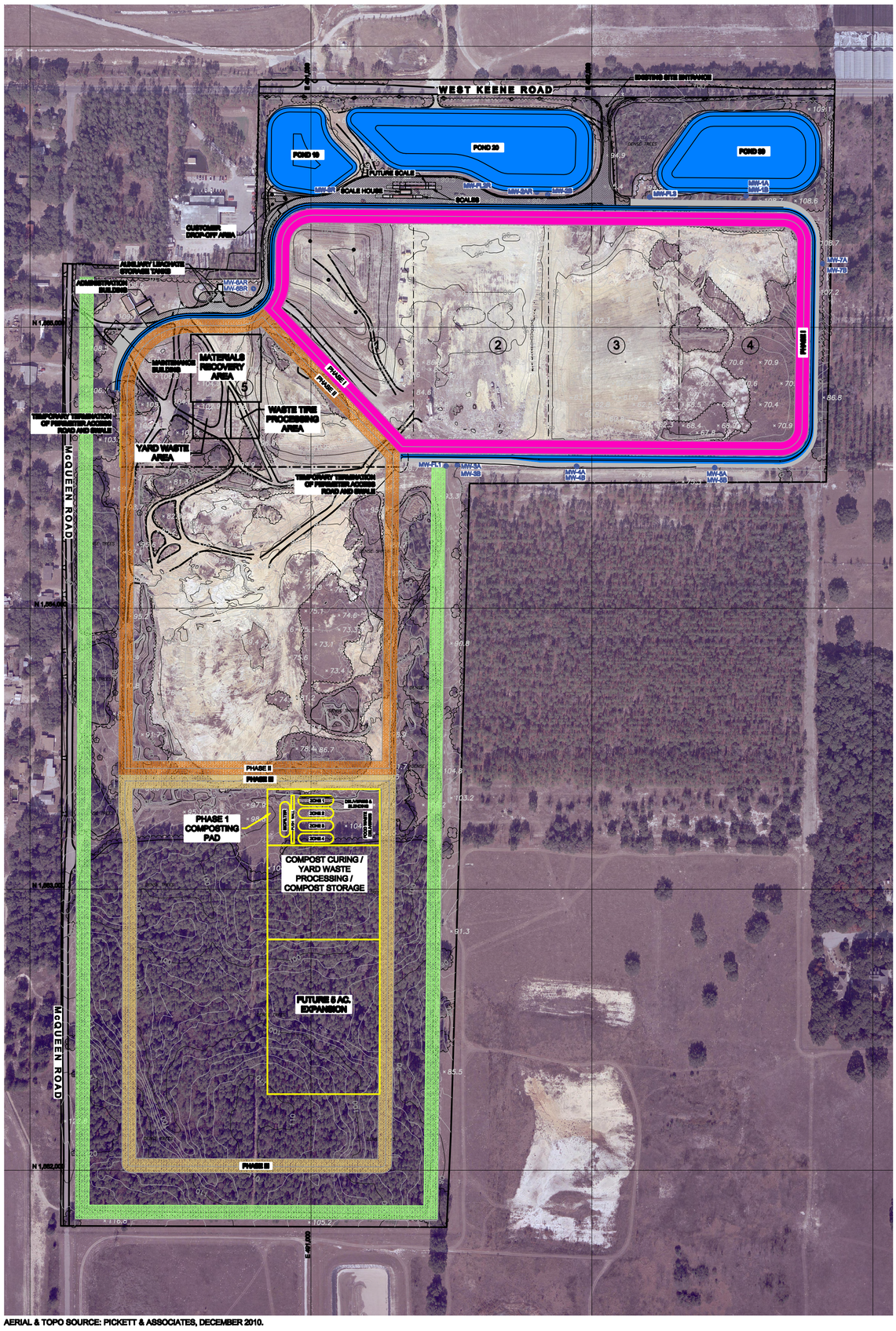
PROJECT NO. 09-574.020

SITE LOCATION MAP

FIGURE

1

FEBRUARY 2011



AERIAL & TOPO SOURCE: PICKETT & ASSOCIATES, DECEMBER 2010.

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 60 — TOP OF PREPARED SUBBASE
- 80 — EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- 86.3 — SPOT ELEVATION
- MW-FL3 — EXISTING GROUNDWATER MONITORING WELL
- 3 — CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

N

0 100 200
DISTANCE IN FEET

FIGURE 2

PROJECT NO. 09-574.020

SITE PLAN

VISTA LANDFILL, CLASS III FACILITY
APOPKA, FLORIDA

DATE	REVISIONS	REVISED	CHECKED

	BY	DATE
DESIGNED	JG	8/2010
DRAWN	TBS	8/2010
CHECKED	DL	8/2010

FILE: 09-574.020-SITE.dwg

hsagolden engineering environmental solutions
100 EAST PINE STREET, SUITE 605
ORLANDO, FL 32801
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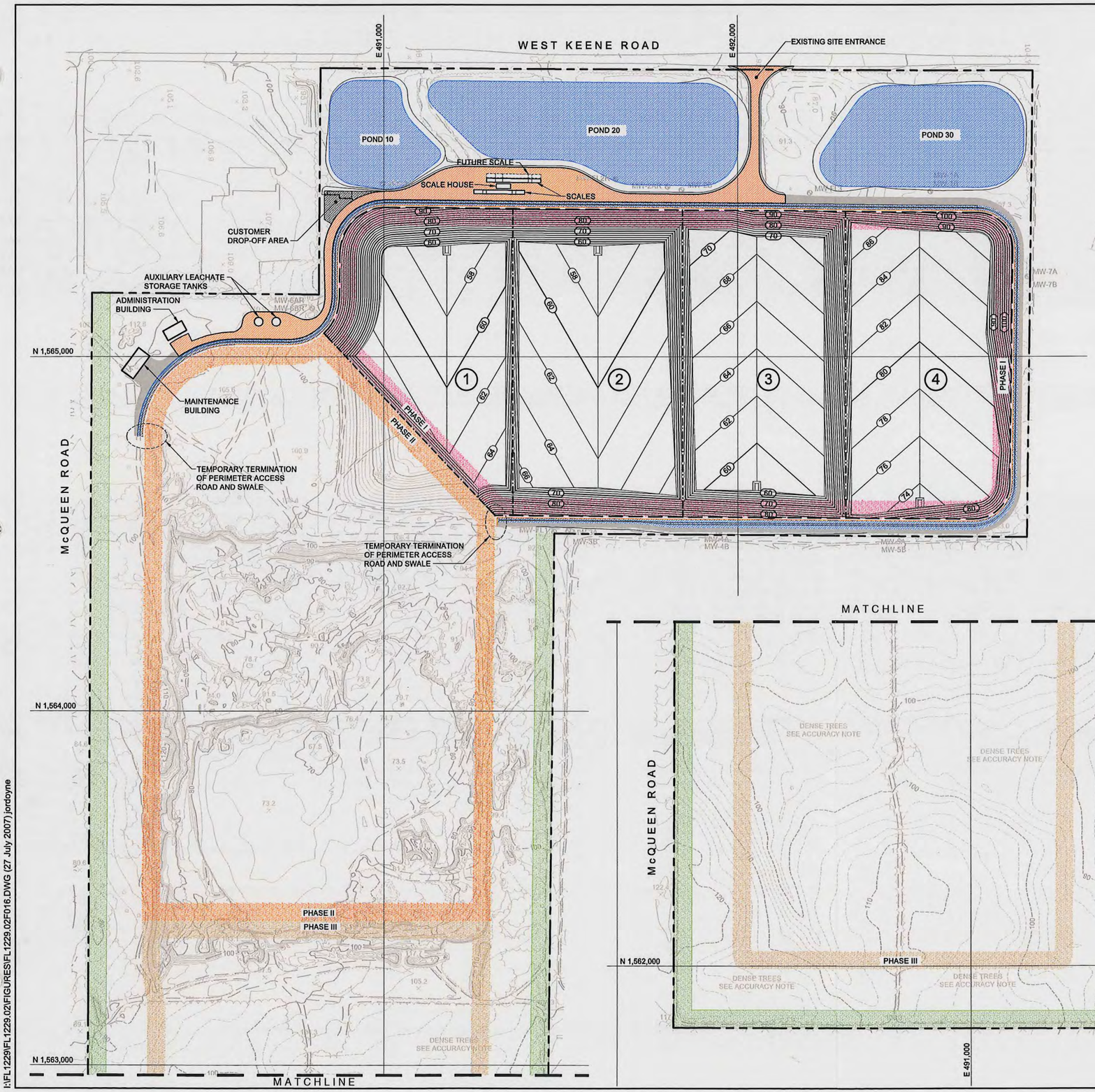
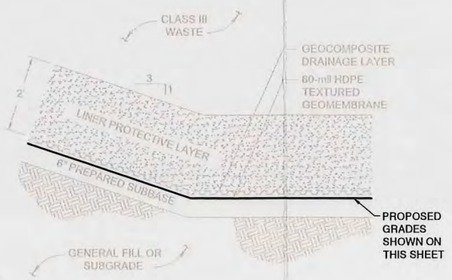
HSAGOLDEN.COM





LINER SYSTEM KEY DETAIL

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XREF: FL1229 02X037

NORTH

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SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- TOP OF PREPARED SUBBASE
- EXISTING GROUND CONTOUR (SEE NOTE 1)
- TREE LINE
- UNIMPROVED / DIRT ROAD
- IMPROVED / PAVED ROAD
- FENCE
- SPOT ELEVATION
- EXISTING GROUNDWATER MONITORING WELL
- CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL. IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

LANDFILL DEVELOPMENT PHASING PLAN I

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F016
PROJECT NO.	FL1229.02	FIGURE NO.	3A

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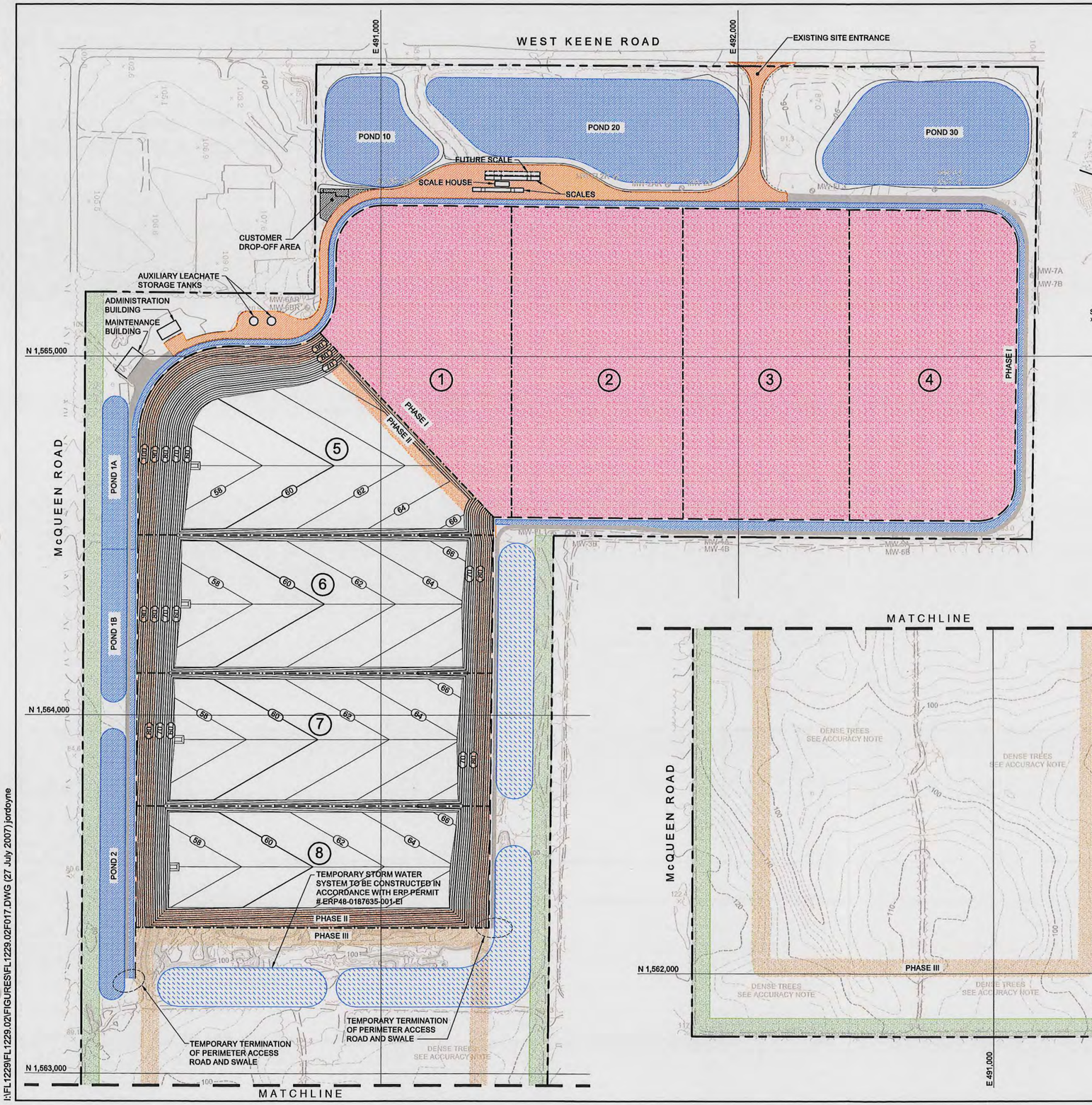

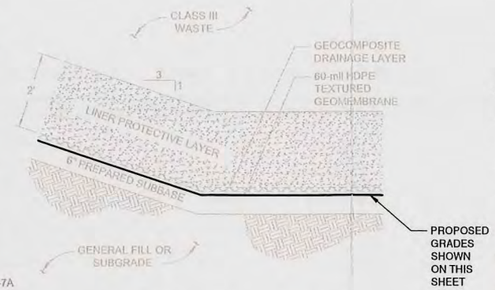

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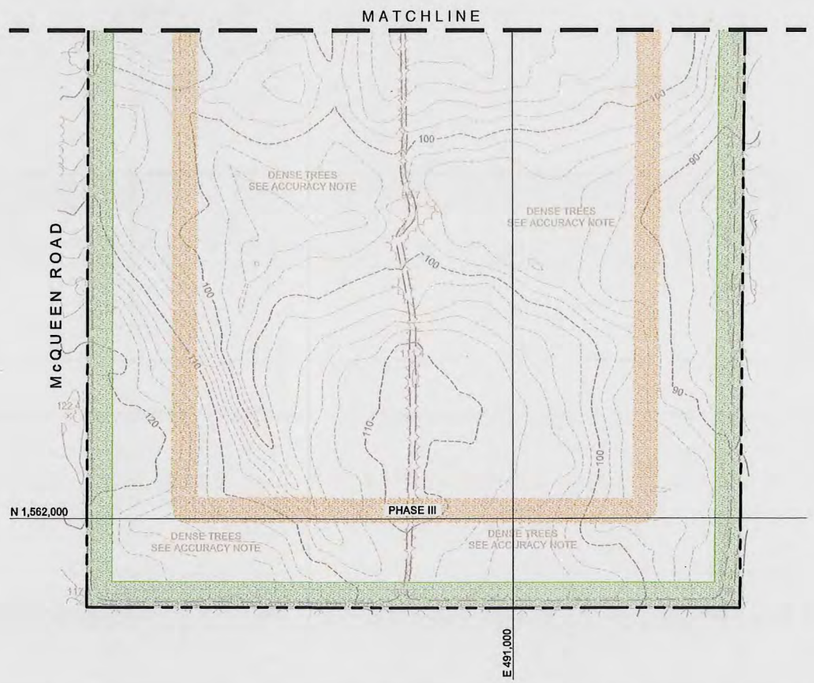

NORTH

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SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- LIMIT OF WASTE
- INTERCELL BOUNDARY
- 60 — TOP OF PREPARED SUBBASE
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- 3 — CELL NUMBER
- PAVED ACCESS ROAD
- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT
- TEMPORARY STORM WATER SYSTEM

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
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3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

LANDFILL DEVELOPMENT PHASING PLAN II

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F017
PROJECT NO.	FL1229.02	FIGURE NO.	3B

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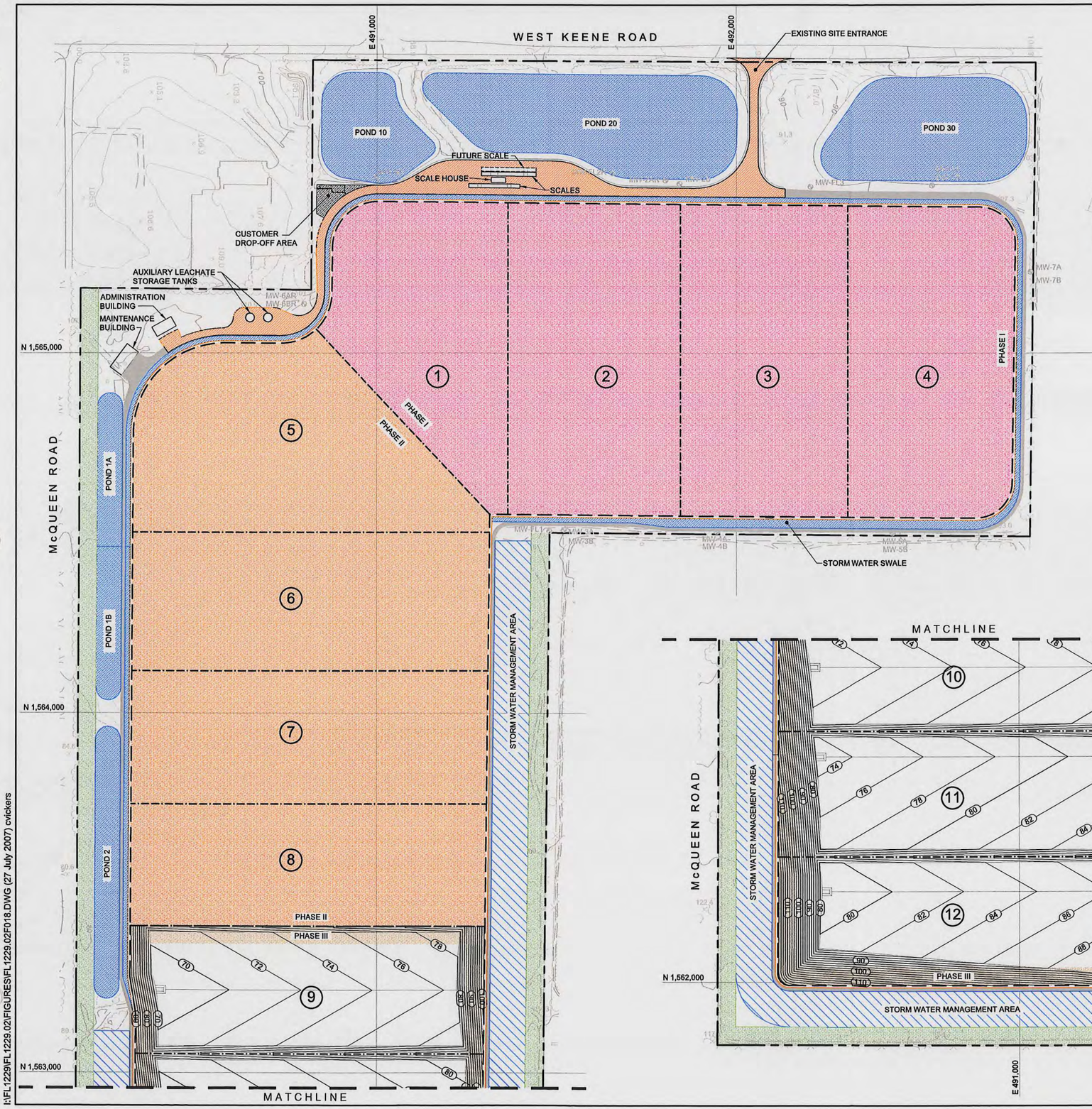

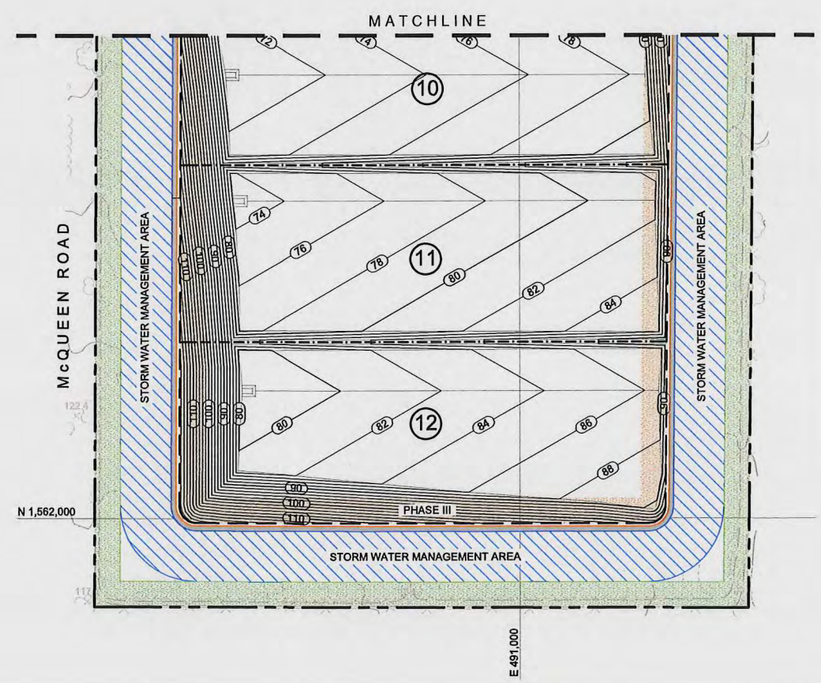

LINER SYSTEM KEY DETAIL

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XREF: FL1229\02\FIGURES

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SCALE IN FEET

LEGEND

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- CELL NUMBER
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- GRAVEL ACCESS ROAD
- UNDISTURBED LANDSCAPE BUFFER
- STORM WATER POND OR SWALE
- STORM WATER MANAGEMENT AREA
- PHASE I LINER FOOTPRINT
- PHASE II LINER FOOTPRINT
- PHASE III LINER FOOTPRINT

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.
2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.
3. DATE OF PHOTOGRAPHY: 18 MARCH 2007
4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

LANDFILL DEVELOPMENT PHASING PLAN III

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F018
PROJECT NO.	FL1229.02	FIGURE NO.	3C

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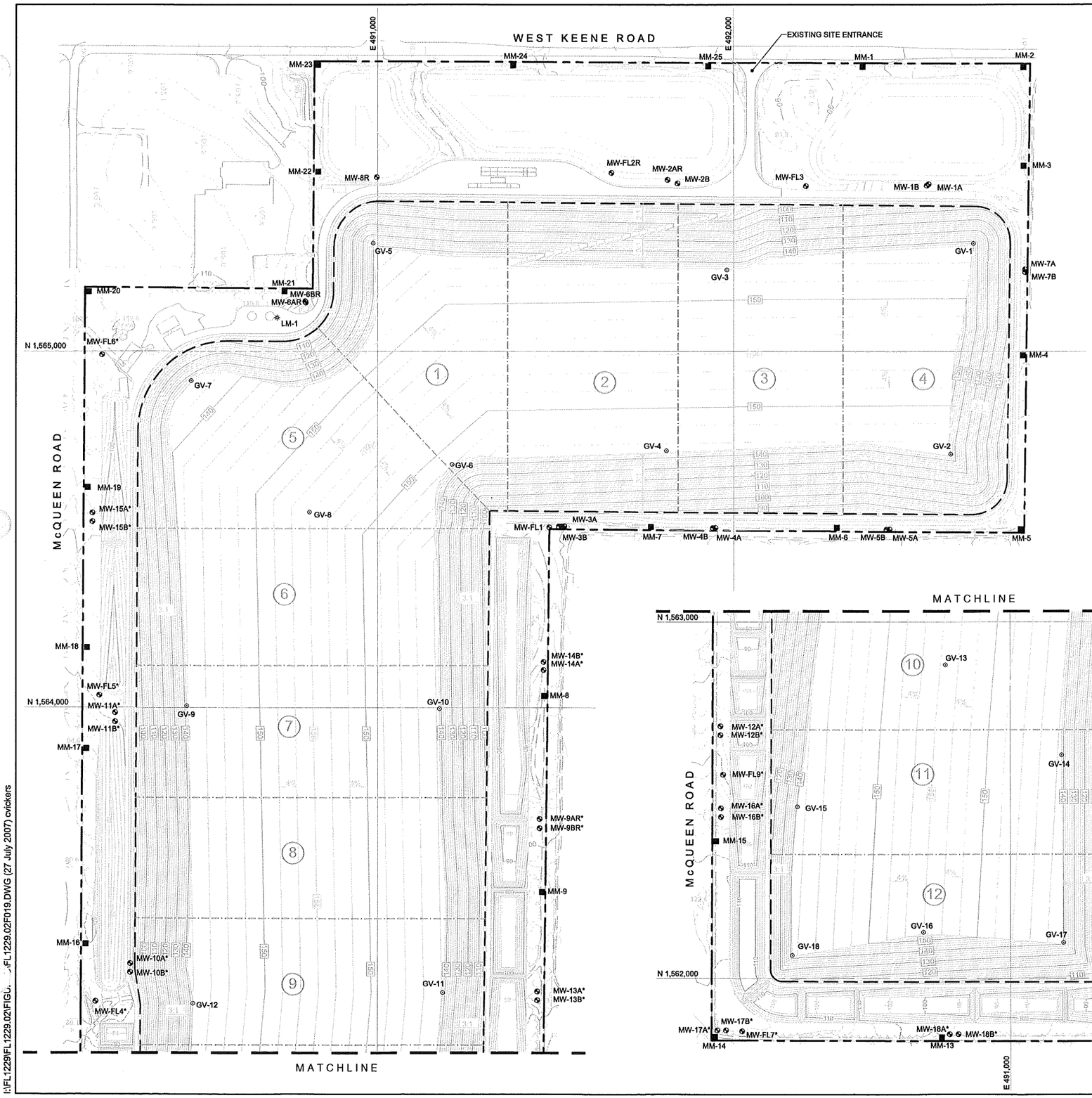

NORTH

150 75 0 150

SCALE IN FEET

LEGEND

	APPROXIMATE PROPERTY BOUNDARY
	LIMIT OF WASTE
	INTERCELL BOUNDARY
120	FINAL COVER SYSTEM CONTOUR
80	EXISTING GROUND CONTOUR (SEE NOTE 1)
	TREE LINE
	UNIMPROVED / DIRT ROAD
	IMPROVED / PAVED ROAD
	FENCE
86.3	SPOT ELEVATION
3	CELL NUMBERS
MW-8	EXISTING GROUNDWATER MONITORING WELL
MW-FL5*	PROPOSED GROUNDWATER MONITORING WELL
GV-9	PROPOSED GAS VENT PROBE
LM-1	PROPOSED LEACHATE MONITORING POINT
MM-19	PROPOSED GAS MONITORING PROBE

MAPPING NOTES:

1. CONTOURS - NINETY (90) PERCENT OF THE ELEVATIONS DETERMINED FROM THE SOLID LINE CONTOURS OF THIS TOPOGRAPHIC MAP HAVE AN ACCURACY WITH RESPECT TO TRUE ELEVATION OF ONE-HALF (1/2) CONTOUR INTERVAL OR BETTER AND THE REMAINING TEN (10) PERCENT OF SUCH ELEVATIONS ARE NOT IN ERROR BY MORE THAN ONE CONTOUR INTERVAL IN DENSELY WOODED AREAS WHERE HEAVY BRUSH OR TREE COVER FULLY OBSCURES THE GROUND AND THE CONTOURS ARE SHOWN AS DASHED LINES, THEY HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM THE STEREOSCOPIC MODEL, WHILE MAKING FULL USE OF SPOT ELEVATIONS OBTAINED DURING GROUND CONTROL SURVEYS AND ALL SPOT ELEVATIONS MEASURED PHOTOGRAMMETRICALLY IN PLACES WHERE THE GROUND IS VISIBLE.

2. THE TOPOGRAPHIC MAP WAS COMPILED BY 3001 INC. USING PHOTOGRAMMETRIC METHODS. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. PRIOR TO USE AS A BASIS FOR DESIGN / CONSTRUCTION, IT SHOULD BE FIELD VERIFIED.

3. DATE OF PHOTOGRAPHY: 18 MARCH 2007

4. GRID COORDINATES ARE BASED ON FLORIDA EAST STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83). ELEVATIONS ARE BASED IN NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

GENERAL NOTES

5. GAS MONITORING DATA IS BASED UPON DRAWINGS TITLED "KEENE ROAD DISPOSAL CLASS III LANDFILL EXPANSION" PREPARED FOR BUTTREY DEVELOPMENT FOUR, LLC AND PREPARED BY BISHOP & BUTTREY, INC., DATED MAY 2004 AND REVISED JANUARY 2005.

6. PROPOSED GROUNDWATER MONITORING DATA IS BASED UPON DRAWINGS TITLED "CLASS III LANDFILL PERMIT RENEWAL, KEENE ROAD SOUTH" PREPARED FOR WASTE MANAGEMENT OF FLORIDA AND PREPARED BY S2LI, DATED JANUARY 2006.

ENVIRONMENTAL MANAGEMENT PLAN

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F019
PROJECT NO.	FL1229.02	FIGURE NO.	4

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Attachment A

Vista Landfill, Class III Facility Personnel List

(2/9/2011)

- Irv Slike
- Sheree Grant
- Linda Hahnert
- Alvin Gussie
- Daniel Galarza
- Debbie Mangold
- Leslie Holmes
- Henry Boruch
- Eric Proctor
- Brian Tschantre, Jr.

Florida DEP Solid Waste Management Facility Operator Courses

Holmes, Leslie
Waste Management - Pine Ridge LF
5400 Rex Road
Winter Garden, FL 34787

Phone: 4078770701

Class I, III Landfill Operator

Status: **Current**

- Initial Date: 10/18/2009
- Current Period: 10/18/2009 - 10/17/2012 - (Initial Period) Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	05/11/2006	16
			Total:	Prior
			Hours Needed:	

Period: **10/18/2009 - 10/17/2012 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	10/18/2009	Initial
			Total:	0
			Hours Needed:	16

Status: **Current**

- Continuing Education (CE) Minimum 3 Year Requirements:

  16 hours Class I II III Landfill / Construction and Demolition Debris
  8 hours Transfer Station / Material Recovery Facility
  4 hours Spotter

- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
- Initial hours are not counted toward continuing education.
- An Initial course can be taken as a continuing education course only if it was not taken as the operator's or spotter's initial training. No CE credit will be given for the same course taken within the same 3-year period.
- If you have any questions, please contact djenkins@treeo.ufl.edu or mkeilhauer@treeo.ufl.edu or call (352) 392-9570 extensions 227 or 230.

Florida DEP Solid Waste Management Facility Operator Courses

Holmes, Leslie
Waste Management - Pine Ridge LF
5400 Rex Road
Winter Garden, FL 34787

Phone: 4078770701

Construction and Demolition Debris Landfill Operator

Status: **Current**

- Initial Date: 10/18/2009
- Current Period: 10/18/2009 - 10/17/2012 - (Initial Period) Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	05/11/2006	16
			Total:	Prior
			Hours Needed:	

Period: **10/18/2009 - 10/17/2012 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	10/18/2009	Initial
			Total:	0
			Hours Needed:	16

Status: **Current**

- Continuing Education (CE) Minimum 3 Year Requirements:

  16 hours Class I II III Landfill / Construction and Demolition Debris
  8 hours Transfer Station / Material Recovery Facility
  4 hours Spotter

- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
- Initial hours are not counted toward continuing education.
- An Initial course can be taken as a continuing education course only if it was not taken as the operator's or spotter's initial training. No CE credit will be given for the same course taken within the same 3-year period.
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Florida DEP Solid Waste Management Facility Operator Courses

Mangold, Debra
Waste Management @ Keene Road
255 W Keene Rd
Apopka, FL 32703

Phone: 4078862920

Spotter / Waste Screener

Status: **Current**

- Initial Date: 10/16/2009
- Current Period: 10/16/2009 - 10/15/2012 - (Initial Period) Hours Required: 4 Hours Needed: 4

Period: **Prior Courses**

Course	Course Name	Provider	Completion Date	Hours
203	8-Hour Initial Training Course for Spotters at Class I, II, III Facilities, Waste Processing Facilities and C&D Facilities	Kohl Consulting, Inc.	05/09/2006	8
			Total:	Prior
			Hours Needed:	

Period: **10/16/2009 - 10/15/2012 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
203	8-Hour Initial Training Course for Spotters at Class I, II, III Facilities, Waste Processing Facilities and C&D Facilities	Kohl Consulting, Inc.	10/16/2009	Initial
			Total:	0
			Hours Needed:	4

Status: **Current**

- Continuing Education (CE) Minimum 3 Year Requirements:

  16 hours Class I II III Landfill / Construction and Demolition Debris
  8 hours Transfer Station / Material Recovery Facility
  4 hours Spotter

- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
- Initial hours are not counted toward continuing education.
- An Initial course can be taken as a continuing education course only if it was not taken as the operator's or spotter's initial training. No CE credit will be given for the same course taken within the same 3-year period.
- If you have any questions, please contact djenkins@treeo.ufl.edu or mkeilhauer@treeo.ufl.edu or call (352) 392-9570 extensions 227 or 230.

Florida DEP Solid Waste Management Facility Operator Courses

Galarza, Daniel
Waste Management Indian River
1327 74TH AVE SW
VERO BEACH, FL 32968

Phone: 5615628445

Class I, III Landfill Operator

Status: **Expired**

- Initial Date: 10/27/2007
- Current Period: 10/27/2010 - 10/26/2013 Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**
No courses taken.

Period: **10/27/2007 - 10/26/2010 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	10/27/2007	Initial
			Total:	0
			Hours Needed:	16

Period: **10/27/2010 - 10/26/2013**
No courses taken. Hours Needed: 16

Status: **Expired**

- Continuing Education (CE) Minimum 3 Year Requirements:
  - 16 hours Class I II III Landfill / Construction and Demolition Debris
  - 8 hours Transfer Station / Material Recovery Facility
  - 4 hours Spotter
- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
- Initial hours are not counted toward continuing education.
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Florida DEP Solid Waste Management Facility Operator Courses

Galarza, Daniel
Waste Management Indian River
1327 74TH AVE SW
VERO BEACH, FL 32968

Phone: 5615628445

Construction and Demolition Debris Landfill Operator

Status: **Expired**

- Initial Date: 10/27/2007
- Current Period: 10/27/2010 - 10/26/2013 Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**
No courses taken.

Period: **10/27/2007 - 10/26/2010 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	10/27/2007	Initial
			Total:	0
			Hours Needed:	16

Period: **10/27/2010 - 10/26/2013**
No courses taken. Hours Needed: 16

Status: **Expired**

- Continuing Education (CE) Minimum 3 Year Requirements:

  16 hours Class I II III Landfill / Construction and Demolition Debris

  8 hours Transfer Station / Material Recovery Facility

  4 hours Spotter

- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
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Florida DEP Solid Waste Management Facility Operator Courses

Proctor, Eric
Waste Management @ Pine Ridge Landfill
255 W Keene Rd
Apopka, FL 32703

Phone: 4078862920

Class I, III Landfill Operator

Status: **Expired**

- Initial Date: 07/22/2007
- Current Period: 07/22/2010 - 07/21/2013 Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**
No courses taken.

Period: **07/22/2007 - 07/21/2010 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	07/22/2007	Initial
			Total:	0
			Hours Needed:	16

Period: **07/22/2010 - 07/21/2013**
No courses taken. Hours Needed: 16

Status: **Expired**

- Continuing Education (CE) Minimum 3 Year Requirements:
  - 16 hours Class I II III Landfill / Construction and Demolition Debris
  - 8 hours Transfer Station / Material Recovery Facility
  - 4 hours Spotter
- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
- Initial hours are not counted toward continuing education.
- An Initial course can be taken as a continuing education course only if it was not taken as the operator's or spotter's initial training. No CE credit will be given for the same course taken within the same 3-year period.
- If you have any questions, please contact djenkins@treeo.ufl.edu or mkeilhauer@treeo.ufl.edu or call (352) 392-9570 extensions 227 or 230.

Florida DEP Solid Waste Management Facility Operator Courses

Proctor, Eric
Waste Management @ Pine Ridge Landfill
255 W Keene Rd
Apopka, FL 32703

Phone: 4078862920

Construction and Demolition Debris Landfill Operator

Status: **Expired**

- Initial Date: 07/22/2007
- Current Period: 07/22/2010 - 07/21/2013 Hours Required: 16 Hours Needed: 16

Period: **Prior Courses**
No courses taken.

Period: **07/22/2007 - 07/21/2010 - (Initial Period)**

Course	Course Name	Provider	Completion Date	Hours
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III and C&D Sites)	Kohl Consulting, Inc.	07/22/2007	Initial
			Total:	0
			Hours Needed:	16

Period: **07/22/2010 - 07/21/2013**
No courses taken. Hours Needed: 16

Status: **Expired**

- Continuing Education (CE) Minimum 3 Year Requirements:
  - 16 hours Class I II III Landfill / Construction and Demolition Debris
  - 8 hours Transfer Station / Material Recovery Facility
  - 4 hours Spotter
- **Expired:** If you have exceeded the 3 year training period without achieving the minimum continuing education, you must start over by taking an approved initial course and pass exam. There is not a grace period.
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Attachment B

GAS MONITORING REPORT

Facility Name: _____

ANALYST: _____ DATE: _____

GAS INSTRUMENT TYPE: _____ SERIAL NO.: _____

PRESSURE INSTRUMENT TYPE: _____ SERIAL NO.: _____

WATER LEVEL INSTRUMENT TYPE: _____ SERIAL NO.: _____

WEATHER CONDITIONS: _____ BAROMETRIC PRESSURE: _____

CALIBRATION	Response	Adjustment	Acceptable	Int.
SPAN GAS 2.5% (by vol.)				
SPAN GAS 50% (by vol.)				

MONITOR POINT	TIME	PRESSURE (inches	METHANE (% by Vol. air)	METHANE (% LEL)	LIQUID LEVEL (FT. TOC)	COMMENTS

COMMENTS: BH = Bar Hole completed by hammering a bar (3 feet long x ½ inch dia.) into the ground then removing. The subsequent void is then measured for methane by inserting the instrument probe into the void and Aspirating sample gas through the meter. No liquid level possible for a Bar Hole.

Signature: _____

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Attachment C

LANDFILL INSPECTION
AND
DAILY FIELD ODOR SURVEY FORM

Facility Name: Date: _____
Facility Address: Time: _____
Surveyor: _____

Are there any reasons for odor, such as a significantly large amount of trash being dumped, uncovering of trash that was covered the night before, odor producing leachate storage methods, new gas well installations or waste excavations? _____

If odors are possible, are they due to landfill gas or from landfill operations? _____

Are there odors detected from other nearby sources or activities going on that may generate nuisance odors? Describe them: _____

Weather Conditions

Wind Speed and Direction: _____ Rainfall: _____ Temp: _____
Barometric Pressure: _____ Humidity: _____

Odor Surveying Points

Survey Point ID/ Location	Odor Intensity S = Strong M = Medium SL = Slight N = None	Odor Description EG = rotten egg LFG = landfill gas NW = New Waste O = Other (describe)	Comments & Observations
1.			
2.			
3.			
4.			
5.			
6.			
7.			

DAILY – Condition of Landfill

Slopes and Berms: _____ Haul Road Condition: _____ Landfill Perimeter: _____
Litter and Debris: _____ Flagging: _____ Erosion: _____

WEEKLY - Cover

Weekly Cover applied at active area (s) (Y)___ (N)___ Week ending:_____

QUARTERLY – Closed Areas Quarter Ending _____

Final Cover: erosion _____ vegetation _____ differential settlement _____ ponding _____
Surface Water Control Structures: _____

Signature: _____

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Attachment D

ODOR COMPLAINT FORM

FACILITY NAME: _____
FACILITY ADDRESS: _____
_____

RECEIVED BY: _____

DATE: _____
TIME: _____

Contact Information of the Complainant

Name: _____
Address: _____
Address2: _____
Phone: _____

Odor Information

Date Detected: _____
Time Detected: _____
Location Detected: _____
Grid Coordinates: _____

Description of Complaint

Type of Odor: _____

Intensity of Odor: _____

Weather Conditions when odor was detected: _____

Were odors noticed at this location in past: _____

Weather Conditions (At the time odors were detected)

Wind Direction and Speed: _____ Rainfall: _____ Temperature: _____
Barometric Pressure: _____ Humidity: _____

Remarks

(Include information such as special waste being received, wash down of transfer station floor occurring, new gas well installation, location of current working face, etc.) _____

Follow-up Contact with Complainant

Was follow-up contact made with the complainant? _____

If so, answer the following questions:

When was contact made? Date: _____ Time: _____

By whom and how was contact made? _____

How was the contact made? (Letter, Phone Call, etc.) _____

What issues were discussed with the complainant? _____

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Attachment E

ODOR COMPLAINT TRACKING CHART

FACILITY NAME: _____ **MONTH:** _____

REPORT COMPLETED BY: _____ **YEAR:** _____

	Date Received	Were Odors Detected During Daily Survey? Y or N	Survey Location(s) Odors were Detected	Call Logged By:	Complainant Name	Time and Date Odors were Detected	Grid Coordinates of Odor Detection	Wind Direction & Speed at Time of Odors	Remarks	Follow-up Conducted (Visit or Call?)
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

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Attachment F

EXHIBIT B - Landfill Facility Shutdown Checklist

In the days before landfall of any storm, it is imperative that we follow key procedures to "shutdown" our facilities. Listed below are the key items to be accomplished. Based on your site, there may be other items specific to your site. You should use the space at the bottom provided at the bottom of each day to identify the specific items and track their completion.

Follow all steps of the Consolidated Hurricane Plan and the items listed below:

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
1	LF DM takes full responsibility for fuel inventory management. Fuel deliveries will be scheduled as far as possible in advance based on daily usage and storage capacity. Make sure to account for the possible need to supply employees with gasoline both immediately before and after the storm. MAFM working with Procurement will assist with logistics and deliveries.	Day 7	DM must monitor fuel supplies daily and ensure that tanks are topped off just prior to the storm.	LF DM		
2	Perform a general site assessment. Walk around the site and, at a minimum review/check: • Check all erosion issues. • Check side slopes. • Check drainage issues. • Check cap/cover issues. • Clean/Repair all storm water swales and down falls. • Check fence for overhanging trees and trim as necessary. Dispose of branches – do not leave in yard. • Check metal buildings for loose	Day 7	See Guidelines for Landfill Hurricane Preparations at the back of this exhibit. See Exhibit O - Hazardous Materials Checklist. See Exhibit V - Provisions & Safety Supplies.	LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	siding or loose roof panels and repair as needed. • Check all office roofs to be sure that the drainage systems are clear. • Inspect garage doors and check wind rating from manufacturer. If doors are the older type with low wind ratings, determine if some type of supports could be fabricated to keep doors from being blown out. • Inspect storm drains to insure they have been maintained and are currently functional. Repair as needed. • Check water pumps (washracks, etc) and treatment locations for proper mounting and protection from wind damage to filtration systems. Fix as required. • If oil water separator is present and receives flows from any areas other than those areas under roof, the valves associated with these areas should be closed prior to landfall • Check storage and condition of all Hazardous Materials. See Hazardous Materials Checklist (Exhibit O) and complete. Move materials to safe location if necessary. • Check to ensure that scalehouse and other temporary buildings are properly anchored.					

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	• Insure that facilities with on-site well water serving buildings can power the pumps with a generator in the event of power loss or have portable toilets available in case of pump damage. Make plans as necessary. • Inspect hurricane supplies to insure they are complete. Check all equipment for proper operation. • Inspect storm ponds. Take any necessary actions. • Perform general housekeeping. **CLEAN THE YARD** of items that are not needed. Organize. Make note of items requiring tie-down or anchoring. • Note any other items required to be attended to prior to the storm. Use common sense.					
3	Review Emergency Plan as outlined in the site operating permit. In addition to following the steps of this plan, follow your Site Operating Permit completely.	Day 7	See Site Operating Permit	LF DM		
4	Inspect supplies to protect buildings, computers, etc. Each site should have a stock pile of goods (sheet plastic, plywood, etc) that was purchased in the spring. Review the list and purchase any supplies necessary.	Day 7	See Exhibit K - Hurricane Materials Worksheet	LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
5	Review current inventory levels of all critical items needed to keep equipment running (parts lubricants, etc). Schedule to have any extra inventory delivered and lubricant tanks topped off within next three days.	Day 7		LF DM		
6	Make contact with local electricians. Inform them that you may need to use their services after the storm to hook-up emergency generators. Get names and contact numbers for after the storm and keep with you at all times.	Day 7		LF DM		
7	Survey your leachate storage capacity, discuss with the Market Area if there is a need to pump additional leachate. Develop plan to pump out.	Day 7		LF DM		
8	Review the Equipment and Employee Evacuation Plan that was developed for the site. Discuss with all local management employees make any final changes necessary and discuss with MAGM.	Day 7	Review Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
9	Based on the review of all of the steps above, create a specific work plan/punch list of items that must be accomplished before landfall.	Day 7		LF DM		
10	Other items specific to the site:	Day 7				

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
11	If there is a need to pump/transport additional leachate, contact service providers and begin pumping/transporting.	Day 6		LF DM		
12	Follow-up on walk around inspection and punch list. Ensure that all items are being completed.	Day 6		LF DM		
13	Any other items specific to the site:	Day 6				
14	Follow-up on facility walk around inspection and punch list. Clean-up/store/secure any loose debris, materials and equipment that could become wind-blown.	Day 5		LF DM		
15	Notify all major customers and host community as to what the current plans are for closing the landfill. Scale house attendants should communicate to each truck driver what our current site closure estimate is.	Day 5	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
16	Review the landfill SPCC and SWPPP plans discuss as necessary with the MA Environmental Protection Manager.	Day 5		LF DM		
17	Verify critical inventories (parts, lubricants) are in place and all lubricants have been topped off.	Day 5		LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
18	Begin daily briefings with all employees. Discuss all on-going preparation plans, current status of personal preparations, work schedules, etc.	Day 5	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
19	Any other items specific to the site:	Day 5				
20	Check status of all issues found in the facility walk around inspection and punch list. Ensure activities are on track to completion.	Day 4	See Guidelines for Landfill Hurricane Preparations at the back of this exhibit	LF DM		
21	Conduct daily briefing with all employees. Discuss all on-going preparation plans, current status of personal preparations, work schedules, etc.	Day 4	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
22	Notify all major customers and host community as to what the current plans are for closing the landfill. Scale house attendants should communicate to each truck	Day 4	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	driver what our current site closure estimate is.					
23	Survey your leachate storage capacity, discuss with the Market Area if there is a need to pump additional leachate.	Day 4		LF DM		
24	Any other items specific to the site:	Day 4				
25	Check status of all issues found in the facility walk around inspection and punch list. Ensure activities are on track to completion.	Day 3	See Guidelines for Landfill Hurricane Preparations at the back of this exhibit	LF DM		
26	Finish all "clean-up" activities on the site. All supplies should in indoors or otherwise secured.	Day 3		LF DM		
27	Begin to install plywood or other coverings over windows and doors. Begin the process of "boarding up".	Day 3		LF DM		
28	Meet with all employees. Identify all employees who plan to evacuate area and determine their final timeline for departure. Review Wallet card, WM ID badge, communication protocols. DO NOT ALLOW any employee to evacuate without a Wallet Card, Photo ID, and safe transit	Day 3	See Exhibit D – Equipment and Employee Evacuation Plans See Exhibit F – Hurricane	LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	letter from Group Legal (if available). Also, be sure to update Exhibit F – Employee Phone/Address tree with contact information for employees who intend to evacuate the area.		Preparedness Contact Information, Section 14 – Employee Phone/Address Tree			
29	Notify all major customers and host community as to what the current plans are for closing the landfill. Scale house attendants should communicate to each truck driver what our current site closure estimate is.	Day 3	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
30	Any other items specific to the site:	Day 3				
31	Complete activities identified in walk around inspection and punch list.	Day 2	See Guidelines for Landfill Hurricane Preparations at the back of this exhibit	LF DM		
32	Begin to monitor wind speeds. The site will start to shut down when wind speeds begin to exceed a safe level (note this is typically 40 MPH). Notify all major customers and host community as to what the current plans are for closing the landfill. Scale house attendants should communicate to each truck driver what our current site closure estimate is. Note: if wind speeds are approaching 40 MPH it is critical that the site begins to perform the DAY 1 activities below.	Day 2	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
33	Stage any equipment not being used in its designated parking location.	Day 2	See Exhibit D – Equipment and Employee Evacuation Plans	LF DM		
34	Any other items specific to the site:	Day 2				
35	Review all activities on the list above. Insure completion.	Day 1		LF DM		
36	**Secure YELLOW IRON and other equipment. Take the following steps:** - Fully fuel (top-off) all equipment. - Move equipment to your pre-determined staging area. - Park equipment a minimum of 25 feet apart (for fire protection). - Do not park near or under power lines. - Do not park near gravel or loose rock. - Position to minimize exposure of all hydraulic cylinders. - Turn off all power and master	Day 1		LF DM		

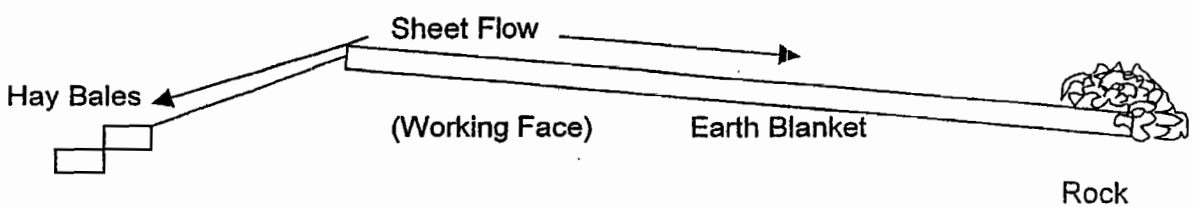
Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	switch. - Lock cab if possible.					
37	Secure all fueling equipment: Insure that all tanks are protected from possible water entry. Secure blow-off caps to insure that wind does not lift and allow water entry. Test all tanks for water using stick and paste. Record results (this will be used to provide a benchmark after the storm). Make sure all fueling nozzles are secured and locked.	Day 1		LF DM		
38	Double check and ensure that all containment area valves have been closed/locked.	Day 1		LF DM		
39	Finish boarding up the facility. Sandbag all shop doors to prevent water penetration under the doors.	Day 1		LF DM		
40	Notify all major customers and your host community as to what your current plans are for closing the landfill. For instance, you will be closing the landfill once the wind speed reaches 40 MPH. Make sure that your scale house attendants communicate to each truck driver what our current site closure estimate is.	Day 1		LF DM		
41	Hardware and files: Hardware: Fully unplug (electrical, Ethernet, etc) all computers and place on top of desks to elevate them off of the floor. Cover/wrap all computers in plastic. Move them to locations away from windows if possible.	Day 1		LF DM		

Item	Activity / Task	Complete By Date	Comments	Assigned To:	Completed By Initials	Date Completed
	Files: Secure as best as possible cover/wrap all file cabinets in plastic.					
42	Charge all batteries and spare batteries for laptops and cell phones. Take your laptop and spare batteries/chargers with you when you leave.	Day 1		LF DM		
43	Turn off all electrical breaker boxes to your buildings (only). Do NOT turn off electricity to your flares, pumps, etc unless you have made provisions for generator power and the generators are hooked-up and working. Your goal here is to protect buildings from electrical fires. If you only have one panel that controls the building and the Flares/pumps, etc. then you should leave the electricity on.	Day 1		LF DM		
44	Take this manual with you when you leave.	Day 1		LF DM		
45	Lock all buildings and secure all gates as you are leaving.	Day 1		LF DM		
46	Any other items specific to the site:	Day 1		LF DM		

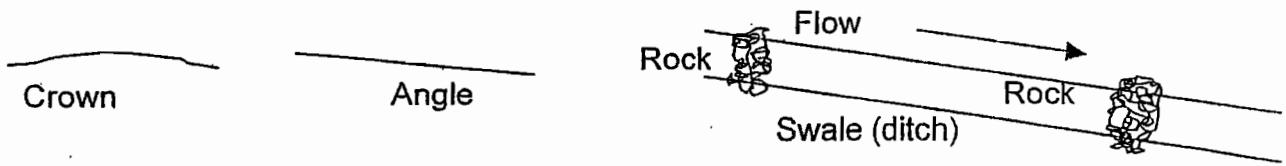
Guidelines for Landfill Hurricane Preparations
(Working Face, Roads, Slopes, and Drainage Features)

Preface: A hurricane may present conditions that can adversely effect landfill operations. The main threats are high wind, heavy rain and flooding. It is the intent of this document to provide basic guidelines that, when properly implemented, can greatly reduce the effects of these potential impacts.

Working Face: The working face of the landfill should be protected from excess water intrusion from heavy rains. This can be done by providing proper grading and cover that promotes the shedding of water off of the working face toward drainage features. Cover should be applied a minimum or 6" thick (1 foot preferred) or as required by permit conditions at the site. Cover material should be compacted into place (walked-in) so that the soil is tightly packed. If a tarp is used it should be anchored or covered to prevent being removed by high winds. A back-up tarp may be needed if the tarp in use becomes damaged or washed/ blown away by the storm. The working face should be developed and covered to minimize steep slopes that are subject to erosion during heavy rain and to eliminate points of entry for rain and surface water. Consideration should be given to the potential for erosion areas that may develop. In steep areas benching, rock, hay bales, or other measures to discourage erosion should be installed.



Access Roads: Roadways should be graded to promote drainage and limit erosion. A slight crown or angle should be applied to the road to allow sheet flow off of the road way into drainage swales (ditches). This is epically critical on steep roads to prevent a river effect down the roadway. The drainage swales (ditches) should have periodic erosion barriers to limit the speed of flow of water within them. This is best accomplished installing gabions or check dams to absorb and dissipate the energy of the flowing water. Some examples of this are the placement of rock, hay bales, benches, concrete or other control devices placed across the swale to slow the flow of drainage.



Slopes/ Drainage Features: Sloped areas are subject to erosion when exposed to heavy rains. Ongoing efforts to establish healthy vegetation on sloped areas are needed to prevent and control the potential effects from erosion. Surface treatments such as geo-matting, sod and hydro-seeding should be considered in advance of storm events. Establishing and maintaining designed drainage features also plays an important role in keeping sloped area intact. Benching, down chutes, and down drains provide a means of conveying water from the top of the hill down. These features should be checked to ensure that they are in proper working order. If areas are bare (no vegetation) consideration should be given to the potential impact of heavy rain on the area. The placement of additional cover material, uphill diversion berms or hay bales may help protect these areas from excess erosion. A good rule of thumb is to focus on areas that have shown evidence of erosion in the past. These areas are likely to be impacted to a greater degree during a hurricane.

Drainage Features: In addition to the drainage features discussed above, other drainage features may be present at landfills. These include storm water swales, storm water ponds, outfalls and other control devices. On an ongoing basis all of these features should be maintained. The primary concern is the blockage of these features with silt, debris or vegetation. The entire storm water system should be inspected to identify and remove any such blockage so that excess storm water that may accompany a hurricane. Again, focus should be on areas that have been problematic in the past.

Rock/ Dirt Stockpile: Rock and dirt should be stockpiled for use following a storm. These materials may be needed to repair roadways, slopes and swales impacted by erosion associated with the storm. Keep in mind that the availability of cover material may also be impacted by a hurricane. Road closures, lack of fuel or damage to hauling contractors may prevent the delivery of cover material for several days or longer. The quantity of material needed is site specific and dependent on several factors. When planning stockpile needs consider the amount of material that has been needed in the past to repair roads and side slopes following heavy rain. Also consider daily cover needs. A sufficient quantity of rock or crushed concrete and soil should be available to repair expected road and slope damage. Stockpiles should be located in areas that are not subject to flooding or surface flow impact so that they can be accessed and used following the storm.

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Attachment G

GUIDANCE FOR THE MANAGEMENT AND DISPOSAL OF CCA-TREATED WOOD

Top: This load is almost solely CCA-treated wood. It came from a marine construction contractor.

Bottom: This load is from a construction company that builds trusses and floor joists. It contains treated wood. Green colored sawn boards are treated. Other sawn boards may be untreated. Additional testing may be needed to confirm treatment.

Prepared by:

Florida Center for Solid and Hazardous Waste Management and Florida Department of Environmental Protection

with assistance from:

University of Florida College of Engineering and University of Miami College of Engineering

This project and the preparation of this booklet was funded in part by a Hazardous Waste Management State Program support grant (CFDA 66.801) from the U. S . EPA through a contract with the Bureau of Solid and Hazardous Waste of the Florida Department of Environmental Protection. The total cost of the project was $15,000, of which 100% was provided by the U.S. EPA.

BACKGROUND

Chromated Copper Arsenate (CCA) is a chemical wood preservative containing chromium, copper and arsenic. These chemicals protect the wood from rotting due to insects and microbial agents. As a result, the use of CCA to pressure treat wood can prolong the service life of the wood 20 to 40 years beyond that without the preservative.

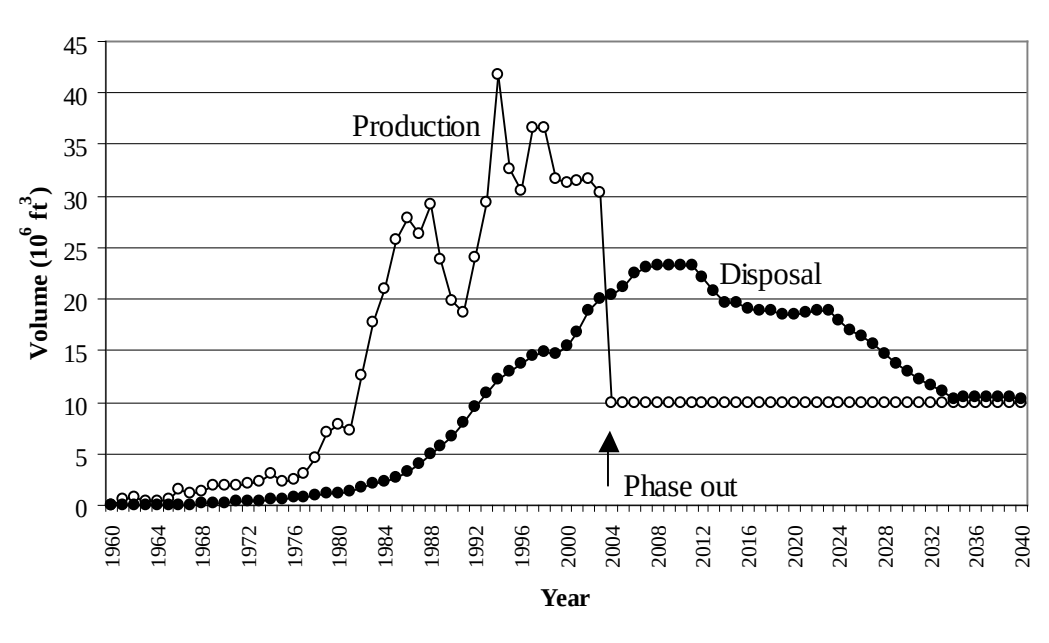
CCA has been used to treat wood since the 1940s, and since the 1970s CCA-treated wood has been used extensively in residential applications. Wood treated with CCA produces no odors or vapors, and you can paint or seal its surface easily. Wood products treated with CCA include lumber, timber, utility poles, posts and plywood. Because of its ease of use and the effectiveness of its treatment, CCA-treated wood was the most widely used type of treated wood in the country and represented about 80 percent of the wood preservation market through 2002.

In the late 1990s the Department became concerned about the large quantity of arsenic that was being imported into the state in the CCA chemicals and the CCA-treated wood. Due to population growth, this wood was needed to supply the high demand for residential housing in Florida. The Department was also concerned about how this CCA-treated wood might be managed when it is removed from service. Research conducted by Dr. Helena Solo-Gabriele, University of Miami, showed that the amount of this wood being disposed of after it reached the end of its service life was expected to increase significantly in the near future (Solo-Gabriele, et al, 2003a, Solo-Gabriele, 2003b). In addition, while not clearly confirmed by ground water data from Florida's unlined disposal facilities, research by Dr. Tim Townsend from the University of Florida indicated that CCA-treated wood and ash from burning this wood could pose a significant leaching threat to ground water if disposed of in unlined disposal facilities in Florida (Townsend, et al., 2001 and 2004). The research also showed that the ash from burning wood waste containing as little as five percent CCA-treated wood could be considered a characteristic hazardous waste due to the high arsenic concentrations in the ash.

These concerns led to communications by the Department with regulatory agencies in other states, with members of the wood treating industry in Florida and with the US Environmental Protection Agency (EPA). On March 17, 2003, the EPA signed an order in response to a voluntary request by wood preservative pesticide producers for cancellation of registration and termination of uses of certain CCA-treated wood products. This agreement required that use of CCA-treated wood for most identified residential uses cease by December 31, 2003. EPA published this notice of cancellation order on April 9, 2003 (EPA, 2003).

The Department is still faced with the problem that the amount of CCA-treated wood being disposed of will continue to increase in the years to come, and may pose an increasing environmental risk if disposed of in unlined facilities. If treated wood is made into mulch and then used in a residential setting, it may also pose unacceptable human health or environmental risks. Consequently, in 2003 the Department convened two Technical Advisory Groups (TAGs) to help study these issues. One TAG focused on potential ground water impacts and the other focused on operational issues. The TAGs consisted of voluntary members from the scientific, engineering and regulated communities who were familiar with the management problems associated with CCA-treated wood in Florida. One of the recommendations of the Operation TAG was for the

D I S C L A I M E R
The information contained in this document is intended for guidance only. It is not a rule and does not create any standards or criteria which must be followed by the regulated community. While the management of treated wood in accordance with this guidance is not expected to result in contamination of ground water or surface water or to pose a significant threat to human health, compliance with this document does not relieve the owner or operator from the responsibility for complying with the Department's rules nor from any liability for environmental damages caused by the management of these materials.



The projected amount of CCA-treated wood that will be disposed of in year 2010 is much greater than what it was in the year 2000.

Department to develop a guidance document on the management and disposal of CCA-treated wood.

PURPOSE

The purpose of this document is to develop guidance for the regulated community and the Department on the management and disposal of CCA-treated wood in Florida. It contains recommendations, which are of an advisory nature, for the collecting and recycling of treated wood. It also contains specific Best Management Practices (BMPs) that are designed to reduce the amount of treated wood disposed of at unlined facilities and to minimize the processing of treated wood into mulch at processing facilities. If the owner/operator of a facility employs and properly implements the BMPs contained in this document, the Department will presume that the owner/operator is making a reasonable effort to prevent significant quantities of CCA-treated wood from being disposed of or processed at the facility and will not take enforcement action should disposal or processing of some CCA-treated wood at the facility actually occur.

OVERVIEW AND APPLICABILITY

Solid waste disposal facilities in Florida are regulated by the Solid Waste Management Facilities rule, Chapter 62-701, Florida Administrative Code (F.A.C.). This rule currently allows CCA-treated wood to be disposed of in permitted Class I, II or III landfills and in permitted construction and demolition (C&D) debris disposal facilities. However, the studies cited above, as well as advice from EPA (EPA 2004b), have prompted the Department to initiate rulemaking to amend Chapter 62-701, F.A.C., in coordination with the development of this guidance document, to require that operators of unlined facilities implement a program to remove CCA-treated wood from the waste stream

prior to final disposal or use. Currently Florida's unlined disposal facilities would include most of the Class III landfills and C&D debris disposal sites in the state. Use of this guidance as part of such a program will help owners and operators comply with Department rules as well as minimize future liability for pollution or injury.

In addition, both the Department (DEP, 2002) and the EPA (EPA, 2004a) have determined that CCA-treated wood should not be recycled as mulch or used as fuel in a wood-fired boiler unless that wood-fired facility is specifically authorized by the Department to accept CCA-treated wood. The Department is also modifying Chapter 62-701, F.A.C. to specifically prohibit the use of CCA-treated wood as mulch, compost, or a soil amendment. Owner/operators of facilities that process wood wastes for disposal or use should follow this guidance to reduce any future liability for injury to people or the environment, as well as to comply with Department rules regarding CCA.

Finally, as is explained in the following section of this guidance, the Department recognizes the difficulty of identifying CCA-treated wood separately from other forms of wood treated with copper-containing preservatives. At this time there is no cost effective and efficient method to specifically identify arsenic in treated wood. The only practical solution to this dilemma at this time is to require the separation of wood waste which can be reasonably assumed to be treated with preservatives which might contain arsenic. Consequently, the advisory recommendations and the BMPs in this document will focus on managing all those forms of treated wood. [1]

HOW TO IDENTIFY TREATED WOOD

There are several types of wood preservative chemicals. The most common ones that have been or are used today in residential applications are CCA, alkaline copper quaternary (ACQ), and copper boron azole (CBA). Some wood in residential applications is also treated with borate alone. Other chemicals have also been used to treat wood for industrial applications. For example, pentachlorophenol (PCP) has been used in the past for telephone poles, but is becoming less popular today. Creosote is used to treat railroad ties and some construction pilings.

Treated industrial wood products can typically be identified based upon their large dimensions (e.g., railroad ties and utility poles). Thus, they are easier to visually identify and then remove from the waste stream. Treated wood used in residential applications, however, is largely composed of lumber, timbers and plywood in varying sizes and can be found in both treated and untreated forms. So how does one determine if these materials are treated?

The most common method for identifying treated wood among lumber, timber and plywood is to look at the color of the wood. Untreated wood and borate-treated wood typically have a light yellow color. The yellow color is the natural color of Southern Yellow Pine, the most common wood species used for building construction in Florida. Wood treated with copper, which includes CCA-, ACQ- and CBA-treated wood, varies in color from a very light green to an intense green color depending upon the amount of chemical impregnated into the wood. The figure to the left shows the color variations in wood resulting from different chemical treatment levels using CCA.

For CCA-, ACQ- and CBA-treated wood, a lower amount of chemical is added to wood intended for above ground and ground contact applications. A higher amount of chemical is added for wood intended for marine applications or serving as a load-bearing support for structures. The majority of the wood produced is treated using the lower amounts of chemical which imparts a light green color to the wood.

Once wood treated with copper has been in-service and has weathered, the green color is generally converted to a silver color. Unfortunately, untreated wood generally weathers to nearly the same silver color. This change in color

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[1] *Wood treated with other chemicals such as pentachlorophenol and creosote, while perhaps posing different environmental concerns, is not addressed by this guidance document.*

for treated wood occurs for wood containing the lower concentrations of chemical after only a year or two of weathering. As a result, sorting out CCA-treated wood from the waste stream based on the green color alone cannot ensure that all the treated wood is identified and removed.

Because of the difficulty in identifying treated wood based on its color alone, researchers are developing or have developed other methods to assist with this identification. Some of these methods may be useful to owner/operators who seek to improve their separation processes for treated wood. The rest of this Section will describe four of these methods and discuss the advantages and disadvantages associated with using them. A description of waste loads that typically contain treated wood is shown in the photos at the end of this guide.

Chemical Stains

Chemical stains refer to specially designed chemicals that can be applied directly to treated wood and show the appearance of a particular chemical in the wood by changing color, i.e., "staining" the wood. These stains can be easily used in the field to sort treated wood but are labor intensive since stain has to be applied to each piece of wood to be identified. The color change will usually occur within a few seconds and the costs of individual tests are low, on the order of a few cents per sample.

There are several stains that can be used to identify copper-treated wood. They were developed by the wood treatment industry to check the depth of penetration of the CCA preservative into wood. These stains include chrome azurol, PAN indicator[2] and rubeanic acid. They result in a distinctive color change where the stain is applied if copper is present in wood. PAN indicator is the preferred stain for sorting wood within the waste stream due to its short reaction time of about 12 seconds. When it reacts, it produces a color ranging from magenta to red. Untreated wood turns orange in color.

It is important to note, however, that these stains will also test positive if the wood is treated with the new copper-based alternatives, such as ACQ and CBA. Thus a positive result using PAN indicator will indicate that the wood is copper-treated but not necessarily arsenic-treated. Research is currently on-going to develop a stain specifically for arsenic.

While the PAN indicator is copper specific rather than arsenic specific,

Stain effects on untreated wood (left) and treated wood (right).

because of its low cost and ease of use it is currently the method of choice for assisting owner/operators to sort out treated wood. More information about the PAN stain indicator can be found on page 12.

Arsenic Test Kits

These tests refer to test kits developed for the analysis of arsenic in drinking water that have been modified for the analysis of arsenic in wood. The method requires the collection of a sawdust sample of the wood which is immersed in water. A series of chemicals are added to the wood/water mixture which convert arsenic dissolved in the water to arsine gas. This gas then reacts with a test strip to produce a distinctive color change on the strip. The method requires 45 minutes per sample for processing. Because the use of strong reagents and the formation of arsine gas (a highly poisonous form of arsenic that is dangerous to inhale), this test is not recommended for use by those who are inexperienced with the handling of chemicals.

X-Ray Technologies

The use of X-ray technologies for sorting wood waste has been evaluated at the pilot scale showing very promising results. These technologies, such as the hand-held XFR units by Innov-X and NITON, were found to identify the presence of arsenic in treated wood within a fraction of a second. Moisture and coatings on the wood did not interfere with the ability of the X-ray systems to identify arsenic in the wood, and they are safe when properly used.

X-ray technologies come in both hand-held and on-line configurations. The widespread use of these technologies, however, is limited because of the high capital costs of the equipment. For example, Innov-X currently sells a hand-held unit for $21,000, but they can also be rented from NITON (www.niton.com) or Innov-X (www.innov-xsys.com).

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2 PAN stands for the chemical name of 1-(2-pyridylazo)-2-naphthol, an orange-red solid with molecular formula $C_{15}H_{11}N_3O$.

Laser Technologies

Like X-ray technologies, laser systems, such as the laser induced breakdown spectroscopy (LIBS), have been evaluated at the pilot scale with very promising results. An experimental LIBS system has been tested for sorting wood waste by determining how well it can detect chromium in CCA-treated wood. However, the effectiveness of the system to identify treated wood was hampered by high moisture content in the wood and the presence of coatings on the wood. It is believed that such interferences can be overcome with the use of more powerful lasers which are available.

Since the LIBS system measures chemicals at the surface of the wood, it was able to identify the presence of coatings during testing. Thus, this system may be helpful if separation of painted wood from a waste stream is required. Since this technology is still under development, it is not yet ready for widespread use as a tool for sorting treated wood.

RECOMMENDATIONS FOR GENERATING, COLLECTING AND RECYCLING TREATED WOOD WASTE

As described previously, the Department recognizes that it may be very difficult to selectively remove CCA-treated wood from other forms of treated wood. Consequently, the following recommendations are designed to address all treated wood, as much as is practical. These recommendations are also advisory in nature and are separate from the BMPs described in the section, "Best Management Practices for Treated Wood."

Generation and Collection

The best location to separate treated wood waste for proper management is at the generating source. Generators will be more knowledgeable of the type of wood that is being handled, and separation at the source is much more effective than trying to separate treated wood later at a disposal or processing facility.

The Department recommends the following guidelines be followed for the generation and collection of treated wood waste.

- **Dedicated roll-offs:** Dedicated, separate roll-offs should be used at job sites involving the construction or demolition of wooden decks, stairs, fences, play ground equipment, landscaping materials, docks and for any other large-scale uses of treated wood. Generators should place all treated wood scraps in these roll-offs for later disposal at permitted lined landfills or other facilities permitted to receive treated wood. As much as is practical, sawdust generated from cutting the treated wood should also be bagged and disposed of at a lined landfill. Bags of sawdust can be placed in the dedicated roll-offs for treated wood.

- **No on-site burning of treated wood:** Treated wood should not be burned at demolition or construction sites as part of the site cleanup efforts. The burning of CCA-treated wood releases toxic fumes and produces a residual ash which is toxic.

- **No on-site mulching of treated wood:** Treated wood, especially CCA-treated wood, should not be ground up on-site and used as landscaping mulch or soil amendment.

- **Curbside collection:** When feasible, local governments should ensure that treated wood from renovations of fences and decks by homeowners that is collected through a curbside pickup program is not mixed with vegetative wastes, but is instead taken to a lined landfill for disposal.

Recycling

At this time, there are no acceptable recycling alternatives for CCA-treated wood, other than reuse of discarded lumber, timbers and poles through reuse and salvage centers.

BEST MANAGEMENT PRACTICE (BMP) FOR TREATED WOOD

As is described in the section, "How to Identify Treated Wood," the Department recognizes that it may be very difficult to selectively separate CCA-treated wood from other forms of treated wood. Consequently, this BMP is designed to maximize the removal of all treated wood from the waste stream. By following this guidance document, the Department will assume that all reasonable measures are being taken by the owner/operator to prevent the disposal or processing of CCA-treated wood at the facility.

◂ *Materials Recovery Facilities (MRFs)*

This Section applies to MRFs regulated under Rule 62-701.710, F.A.C. and C&D MRFs regulated under Rule 62-701.730(13), F.A.C. Typically, wood is separated from the waste stream at these facilities, size reduced, and used as landscaping mulch, boiler fuel or, when mixed with soil, initial cover at Class I landfills. In other cases the wood is disposed of in either Class III landfills or C&D debris disposal facilities. To ensure that significant quantities of treated wood are not managed in these ways at MRFs, the Department recommends that the following procedures be implemented by the owner/operator of the facility.

Initial scale house inspection/driver interview: Incoming trucks should be inspected visually to look for dedicated loads[3] of treated wood, especially from contractors specializing in the demolition and construction of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. For additional information, the scale house operator may also ask the drivers what they are hauling. All dedicated loads should be diverted at the scale house for disposal at a lined disposal facility or properly managed at the MRF before disposal at a lined disposal facility.

Floor spotters and picking line workers: By rule, the MRF must have at least one trained spotter on duty whenever waste is being received. It is recommended that the MRF employ at least one floor spotter per sorting train at the facility. The floor spotter should observe loads as they are tipped onto the tipping floor and pull out larger pieces of treated wood that are listed in the table below. The picking line workers should pull out the smaller pieces of treated wood listed in the table not removed by the floor spotters. Separated treated wood should be placed in a roll-off container for disposal at a lined disposal facility.

Training requirements: The owner/operator should implement a training plan designed to help floor spotters and picking line workers identify treated wood. This training plan is in addition to the trained spotter requirements contained in Rule 62-701.710(4)(c), F.A.C. Teaching aids like those shown in the photos of typical waste loads (page 14) may be used. A teaching tool "example board" like that shown on page 13 should be posted near the picking line.

Spot-checking program: If wood is mulched at the MRF, the owner/operator must implement a monthly spot-checking program to evaluate how effectively treated wood is being removed from the recovered wood waste stream. This program can include the PAN indicator test (page 12) to identify the presence of copper-treated wood. The program can also include more sophisticated testing procedures to look for arsenic-treated wood. The details of any spot-checking program will have to be developed case-by-case, with the purpose of helping the owner/operator improve operations. The results of the spot-checking program need not be reviewed by Department staff for compliance purposes, and detections of treated wood in the mulch will not in themselves be indicative of a violation of Department standards.

Types of Wood That Are Typically Treated With CCA

Lumber, timber and plywood with a green color
Wood and wood posts from fences
Wood and wood posts from docks
Wood and wood posts from decks and outdoor stairs
Wood 4 inches by 4 inches or larger in diameter
Dimensional lumber labeled (with end tags) as treated wood
Wood from playground equipment
Lumber used in landscaping flower beds, gardens, etc.

[3] *"Dedicated loads" are defined as loads of predominantly or exclusively treated wood that would typically be generated by deck, dock and fence contractors.*

Recordkeeping: The owner/operator should maintain records of the following: (1) volumes or weights of treated wood removed and disposed of in a lined disposal facility; (2) the name of the facility used for disposal; (3) treated wood training records for the floor spotter and picking line workers; and (4) results of the monthly spot-checking program, if required. These records must be kept with the other operational records of the facility and maintained as required by Rule 62-701.710(9), F.A.C.

Yard Trash Processors and Other Authorized Mulching Operations

Yard trash processing facilities that receive and process only yard trash as defined in Rule 62-701.200(143), F.A.C. need not follow this Guide for their operations. The Department recommends that facilities that mulch or compost any clean wood[4] as defined in Rule 62-701.200(16), F.A.C., including yard trash processing facilities and mulching facilities at landfills, implement the following procedures.

No mulching of treated wood: The owner/operator (or spotter in the case of a landfill mulching operation) must make reasonable efforts to remove any treated wood listed in the table on page 7 from the wood waste stream prior to processing. Because of the difficulty of identifying it after-the-fact, extra care should be taken to assure that decorative wood mulches are free of treated wood. Any removed treated wood should be placed directly into a separate container and taken for disposal to a lined disposal facility.

4 Clean wood means wood, including lumber, tree and shrub trunks, branches, and limbs, which is free of paint, glue, filler, pentachlorophenol, creosote, tar asphalt, other wood preservatives or treatments. While this definition specifically excludes treated wood, the Department expects that a facility that accepts clean wood will inadvertently accept some treated wood that will need to be properly managed.

No burning: Treated wood must not be burned in open piles, air curtain incinerators or other uncontrolled conditions.

Recordkeeping: The owner/operator must maintain records of the volumes or weights of treated wood removed and disposed of and the name of the landfill used for disposal. These records must be kept with the other operational records of the facility and maintained as required by the facility's permit or applicable rules.

Class I Landfills, Lined Class III Landfills, and Lined C&D Facilities

The Department recommends that owners and operators of Class I landfills, lined Class III landfills, and lined C&D facilities implement the following:

No mulching of treated wood: If mulching occurs at the facility, the operator should take adequate steps to ensure that treated wood is not being processed into mulch for off-site uses or for on-site uses outside of the lined disposal area. Because of the potential to increase leaching rates, the Department does not recommend size reduction of treated wood. However, treated wood may be processed and used as initial cover at the disposal area provided it is only used on interior slopes and meets the other requirements for initial cover contained in Chapter 62-701, F.A.C.

No burning: Treated wood must not be burned in open piles, air curtain incinerators or other uncontrolled conditions.

Management of treated wood: Treated wood which is separated from yard trash or other clean wood should be stored in a separate container or directly disposed of in a lined area. If the lined disposal facility is co-located with other unlined facilities, the owner/operator should include specific conditions in its operation plan to assure that the treated wood is disposed of only in lined areas.

◂ *Unlined Class III Landfills and C&D Debris Disposal Facilities*

To ensure that significant quantities of treated wood are not improperly managed at unlined Class III landfills and C&D debris disposal facilities, the Department recommends that the following procedures be implemented. However, if a Class III landfill or a C&D debris disposal facility is lined, then it may manage treated wood in accordance with the section on "Class I Landfills, Lined Class III Landfills, and Lined C&D Facilities" of this document.

Initial scale house inspection/driver interview: Incoming trucks should be visually inspected to look for dedicated loads[5] of treated wood, especially from contractors specializing in the demolition and construction of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. For additional information, the scale house operator may also ask the drivers what they are hauling. All dedicated loads should be diverted at the scale house for disposal at a lined facility or properly managed at the unlined facility before disposal at a lined facility.

No burning: Treated wood must not be burned in open piles, air curtain incinerators or other uncontrolled conditions.

Signage: Facilities must install signs in the area of incoming traffic flow notifying customers that treated wood will not be accepted for disposal at the facilities, and that the only approved method of disposal is at a lined disposal facility.

Spotters: A trained operator or spotter must inspect the load and pull out larger pieces of treated wood that are listed in the table on page 7. In some cases the load may need to be spread out with compaction equipment or bulldozers in order for adequate spotting to occur. Separated treated wood should be placed in a roll-off container for disposal at a lined disposal facility.

Training requirements: The owner/operator should implement a training plan designed to help operators and spotters identify treated wood. This training plan is in addition to the trained operator and spotter requirements contained in Chapter 62-701, F.A.C. Teaching aids such as that shown on page 13 may be used.

Spot-checking program: If wood is mulched at the facility, the owner/operator must implement a monthly spot-checking program to evaluate how effectively treated wood is being removed from the wood waste stream. This program can include the PAN indicator test described on page 12 to identify the presence of copper-treated wood. The program can also include more sophisticated testing procedures to look for arsenic-treated wood. The details of any spot-checking program will have to be developed case-by-case, with the purpose of helping the owner/operator improve operations. The results of the spot-checking program need not be reviewed by the Department staff for compliance purposes, and detections of treated wood in the mulch will not in themsleves be indicative of a violation of Department standards.

Record Keeping: The owner/operator should maintain records of the following: (1) volumes or weights of treated wood removed and disposed of at a lined disposal facility; (2) the name of the facility used for disposal; (3) treated wood training records for the operator and spotter; and (4) results of the monthly spot-checking program, if required. These records must be kept with the other operational records of the facility and maintained as required by the facility's permit or applicable rules.

◂ *Waste-to-Energy (WTE) Facilities*

Generally, little treated wood goes to WTE facilities. The emissions from the de minimis amounts in the waste stream are believed to be adequately handled by each facility's air pollution control equipment. However, the impacts from large-scale burning of treated wood in WTE facilities have not been tested, and it is not known how much treated wood can be safely burned. Therefore, the use of WTE facilities for large-scale bulk disposal of treated wood is not recommended.

[5] *"Dedicated loads" are defined as loads of predominantly treated wood that would typically be generated by deck, dock and fence contractors.*

FREQUENTLY ASKED QUESTIONS

Q1. What do those labels/end tags mean? Can I use them when I sort?

A1. Yes. There is a lot of useful information on the labels attached to the end of dimensional wood. Labels identify the type of chemical that was used to treat the wood (CCA, ACQ, CBA, etc.), the level of treatment (pounds of chemical per cubic foot of wood, for example 0.25, 0.40, 0.80, 2.5, etc.) and the location of the treating plant. If the wood has a label then it is probably treated and according to this guidance should be separated out for disposal at a lined disposal facility.

Q2. Are pallets ever made from treated wood?

A2. Pallets are very rarely made from treated wood. For the most part, pallets can be safely ground up into wood chips for use as mulch or as fuel in a wood-fired boiler. As with other types of wood, inspection of pallets should follow the recommended guidelines.

Q3. Do I need to remove the arsenic-free treated wood products? Is there any harm from them?

A3. Compared with CCA, these other products pose little or no significant risk to the environment or to human health[6]. However, because of the difficulty in differentiating CCA-treated wood from other types of treated wood, this guidance recommends you remove all treated wood from the waste stream.

Q4. What precautions do I need to take when handling treated wood? Should my pickers who handle this type of material take more precautions than others?

A4. All pickers should wear eye protection, dust masks and gloves. Workers handling wood preserved with CCA should be sure to wash their hands before eating or smoking. CCA-treated wood splinters in the hands and fingers of workers are reported to be very problematic and should be removed as soon as possible. It is important to make sure that the entire splinter is removed. Removal may require medical attention.

Q5. How do I store this material?

A5. Treated wood, including CCA-treated wood, should be placed directly into a separate container for storage prior to disposal in a lined disposal facility. Simply storing the treated wood in a pile outdoors could continue to pose an environmental threat.

Q6. How do I find out where the lined disposal facilities are?

A6. The waste program staff at your District office of the Florida Department of Environmental Protection will know where the lined disposal facilities are located in your part of the state. See the contact information on page 16.

Q7. Can I refuse to accept loads of CCA-treated wood or any other treated wood?

A7. There is nothing in Florida state laws or rules that would require you to accept any particular kind of waste. Unless you are contractually obligated to accept this waste stream by your haulers or local government, you can refuse to accept loads of treated wood.

[6] *The new copper-based arsenic-free wood products (ACQ and Copper Azole) do leach about twice as much copper as CCA-treated wood. However, the higher levels of copper that leach out of ACQ and Copper Azole are not nearly as toxic as the arsenic that leaches out of CCA-treated wood. There is some concern about how much copper the new preservatives like ACQ and Copper Azole may leach into aquatic systems.*

REFERENCES

DEP (Department of Environmental Protection), 2002, Tedder, R. B. and McGuire, C., "Management of Components of Yard Trash: Dirt, Ash and Mulch," Florida Department of Environmental Protection Memorandum SWM-05.6, Solid Waste Section, Tallahassee, Florida, April 4.

EPA (U.S. Environmental Protection Agency), 2004a, Springer, R. and Jones, J., "Wood Mulch Derived from Waste Lumber Preserved with Chromated Copper Arsenate (CCA)," EPA Memorandum, Office of Solid Waste, Washington, D.C., January 6.

EPA (U.S. Environmental Protection Agency), 2004b, Springer, R., "Recommendation on the Disposal of Waste Lumber Preserved with Chromated Copper Arsenate (CCA)," EPA Memorandum, Office of Solid Waste, Washington, D.C., April 12.

EPA (U.S. Environmental Protection Agency), 2003, "Response to Requests to Cancel Certain Chromated Copper Arsenate (CCA) Wood Preservative Products and Amendments to Terminate Certain Uses of other CCA Products," Notice of a Cancellation Order, 68 FR 17366, April 9.

Solo-Gabriele, H., Sakura-Lemessy, D., Townsend, T., Dubey, B., and Jambeck, J., 2003a, "Quantities of Arsenic Within the State of Florida," Florida Center for Solid and Hazardous Waste Management Report #03-06, Gainesville, Florida.

Solo-Gabriele, H., 2003b, "Revised CCA Treated Wood Disposal Forecast," August 6.

Townsend, T., Stook, K., Tolaymat, T., Song, J. K., Solo-Gabriele, H., Hosein, N. and Khan, B., 2001, "New Lines of CCA-Treated Wood Research: In-Service and Disposal Issues," Florida Center for Solid and Hazardous Waste Management Report #00-12, Gainesville, Florida.

Townsend, T. G., Dubey, B., and Solo-Gabriele, H., 2004, "Assessing Potential Waste Disposal Impact From Preservative Treated Wood Products," Environmental Impacts of Preservative Treated Wood, Florida Center For Environmental Solutions, Orlando, Florida, February 8-9, pp. 169-188.

PAN STAIN INDICATOR

Principle: PAN stands for the chemical name of 1-(2-pyridylazo)-2-naphthol, an orange-red solid with a molecular formula $C_{15}H_{11}N_3O$. It is used to determine the presence of almost all metals excluding alkali metals. The reaction with the metals in CCA-treated wood produces a magenta to red color. Untreated wood turns orange in color. It is important to note that the stain is not specific to arsenic within CCA. It reacts with the copper, so that wood treated with any copper-based preservative (such as ACQ and Copper Azole) will also test positive using this stain.

Safety: Gloves and safety goggles should be used during the application of the stain. The stain should be applied in a fashion that would prevent inhalation. The stain should not be ingested and should be kept in a safe place that would prevent children or animals from ingesting the solution. A material safety data sheet (MSDS) is also available on this product that supplies additional safety information. You may also want to contact the chemical supplier of the stain for additional safety instructions. Receipt of the stain kit normally requires that the recipient sign a liability waiver.

Reagents: The PAN Indicator solution (a.k.a."stain") can be purchased as a pre-mixed solution or the basic chemical ingredients can be purchased and mixed at a laboratory. The pre-mixed solution is more convenient but usually more expensive, in particular if large quantities of the stain are needed. If large quantities of stain are needed, a more economical option would involve purchasing the basic chemical ingredients and mixing these ingredients in a laboratory. The pre-mixed solution can be purchased from Spectrum Chemicals. More information on obtaining these ingredients is shown in the following table.

Company	Phone Number	Cat. # for PAN	Cat. # for Methanol	Solution
Spectrum	***800-813-1514***	***P1000-04 (25g)***	***M1240 (20L)***	P-358-51
Sigma	800-325-3010	***01036-25G (25 g)***	***179337-20L***	
Fisher Acros	800-766-7000	***AC14631-0100 (10g)***	***A411-20 P-358-51***	

Procedure for Use

1. Using a dropper bottle, apply the stain to the wood. If the wood is relatively clean, the stain can be added directly to the wood. If the wood is soiled we recommend that a small area of the wood be carefully cut away to expose a clean area (approx 1 square centimeter). The stain works best if the wood is dry.

2. If testing mulch, it may be easiest to use a spray bottle. When using a spray bottle, be careful to spray the solution downwind to avoid inhalation.

3. Wait for color development (about 15 seconds). Color development is faster if applied to the transverse direction of the wood instead of the radial direction.

4. Note the color. If the sample turns a magenta color, then the wood is positive for copper. If the wood turns orange in color, then the wood is negative for most metals and is considered untreated.

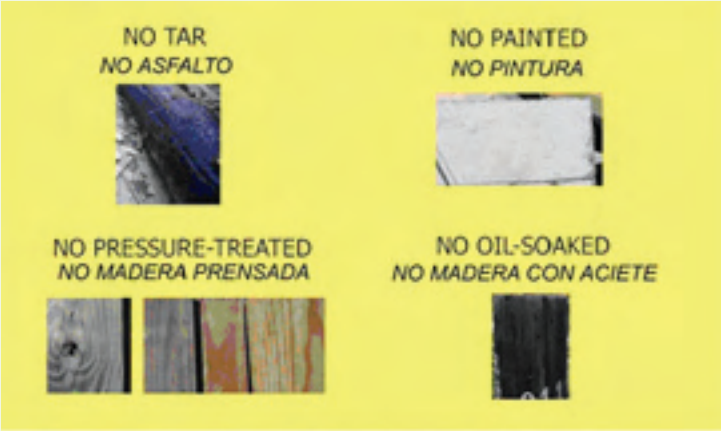
Interferences

1. Stain will not work properly on colored mulches or mulches that are very soiled.

2. Stain will sometimes react as positive with paint and nails on wood, even though the wood may be untreated.

TEACHING TOOLS FOR SORTING WITHOUT CHEMICAL TESTING

Materials Recycling Facilities (MRFs) and other facilities that will sort their waste wood can use signs like these to help sorters distinguish between wood that can be recycled and wood that should be sent to a lined disposal facility. Signs include Spanish and English text.



The top example can be used to explain how to sort wood based on its treatment.

This example can be used to explain how to sort wood based on the structure in which it was used.

PICTURES OF TYPICAL WASTE LOADS THAT CONTAIN TREATED WOOD

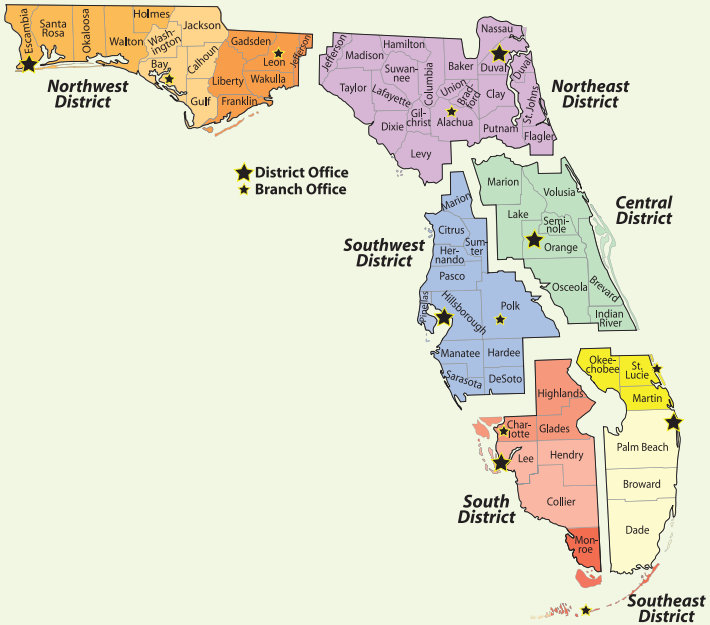
Top: Loads of yard waste may contain CCA-treated wood from fencing, fence posts or landscaping timbers. This piece of wood is likely treated due to its green hue and large dimensions.

Bottom: This load is a mix of yard waste, CCA-treated fencing and CCA-treated landscaping timbers. Treated wood can be identified based on the fact that it is sawn and is characterized by a green hue. The dimensional lumber in the bottom is obviously treated. It is difficult to tell for the highly weathered sawn boards.

Top: Loads from the demolition of outdoor structures will typically contain CCA-treated wood. Pole at the upper left is treated. Complete recovery of untreated wood from this pile will likely require testing in addition to visual separation.

Bottom: The green colored pole in the front of this pile is treated. Complete recovery of untreated wood from this pile will likely require testing in addition to visual separation.

Florida Department of Environmental Protection District Offices



This book is dedicated to the memory of William W. (Bill) Hinkley 1945-2005

WHERE CAN I GET MORE INFORMATION?

The waste program staff at your District office of the Florida Department of Environmental Protection can provide additional information including a list of lined disposal facilities that are located in your area of the state. The appropriate contacts and District boundaries are shown below.

FDEP Information Line,
Phone: (800) 741-4DEP
Fax: (850) 245-8810

FDEP Headquaters
2600 Blair Stone Road
Tallahassee, Fl 32399-2400
http://www.dep.state.fl.us/waste/

FDEP District Offices:

Northwest District Office
160 Governmental Center, Room 308
Pensacola, Fl 32502
(850) 595-8300

Southwest District Office
13051 N. Telecom Parkway
Temple Terrace, Fl 33637
(813) 632-7600

South District Office
P.O. Box 2549
2295 Victoria Avenue,
Suite 364
Fort Myers, Fl 33901
(239) 332-6975

Northeast District Office
7825 Baymeadows Way Suite 200B
Jacksonville, Fl 32256
(904) 807-3300

Central District Office
3319 Maguire Boulevard, Suite 232
Orlando, Fl 32803
(407) 894-7555

Southeast District Office
400 North Congress Avenue
Suite 200
West Palm Beach, Fl 33401
(561) 681-6600

Additional information on CCA-treated wood can be found at the Florida Center for Solid and Hazardous Waste Management's website for CCA research: www.ccaresearch.org.

Attachment 5:

Updated Closure Plan

Closure Plan

Vista Landfill, Class III Facility
Apopka, Florida

Prepared for:

WASTE MANAGEMENT, INC. OF FLORIDA

Vista Landfill, LLC
242 West Keene Road
Apopka, Florida 32703

Prepared by:

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HSA Golden Project No. 09-574.020

February 2011

David L. Leggett
2-17-2011

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CLOSURE PLAN

The Vista Landfill, Class III Facility (Vista Landfill) closure and long-term care requirements are identified in Rules 62-701.600 and 62-701.620 Florida Administrative Code (F.A.C.). This updated document is based on Geosyntec Consultants July 2007 Closure Plan.

1.0 Closure

Waste Management Inc. of Florida (WMIF) will submit an updated closure plan and closure permit application to the Florida Department of Environmental Protection (FDEP), in compliance with the applicable requirements of Rule 62-701.600(3), F.A.C., at least 90 days prior to the date when wastes will no longer be accepted at the Vista Landfill.

If unforeseen circumstances do not allow notification within 90 days prior to ceasing to receive wastes, then Vista Landfill will provide notice as soon as the need to close the Facility becomes apparent. The updated and approved Closure Plan will be incorporated into and made part of the permit.

1.1 Final Cover

The partial closure approach for the landfill (i.e. close-as-you-go) is proposed to minimize leachate generation in the landfill. Partial closure will be accomplished concurrent with waste placement in the landfill. Areas that have reached final elevations will receive the final cover system within 180 days of reaching the final elevation, or a 12-inch thick intermediate cover will be placed over the area.

The landfill will have side slopes graded at 3H:1V, and top slopes graded at four percent to maximize runoff and minimize erosion. Drainage swales will be constructed on the final cover system to collect and divert surface runoff via down drains to the stormwater ponds and ditches at the toe of the landfill. This will help to minimize erosion at the surface of the final cover system. The maximum final elevation of the landfill before settlement will be 156 feet NGVD. The plans and details for the proposed final cover system are provided in the Permit Drawings. The various components of the final cover system are discussed in the remainder of this section.

1.1.1 Final Cover System Components

The final cover system on the landfill top slopes graded at four percent is indicated on the Permit Drawings and consists of, from top to bottom:

- 0.5-foot thick vegetative layer;
- 1.5-foot thick cover protective layer;
- 40-mil thick smooth linear low density polyethylene (LLDPE) geomembrane; and
- Six-inch thick cover layer over the compacted waste

The final cover system on the 3H:1V side slopes of the landfill as indicated on the Permit Drawings consists of, from top to bottom:

- 0.5-foot thick vegetative layer;
- 1.5-foot thick cap protective layer
- Double-sided geocomposite drainage layer;
- 40-mil thick textured LLDPE geomembrane; and
- Six-inch thick cover layer over the compacted waste

1.1.2 Final Cover System Materials

1.1.2.1 Vegetation

The surface of the final cover system will be vegetated either by seeding or sodding. The grass seed will have a high tolerance to drought. The sod will be of firm texture, having a compacted growth and good root development.

1.1.2.2 Vegetative and Cap Protective Layers

The upper six inches of the final cover system will consist of loosely placed vegetative layer and will be vegetated to minimize erosion. The cover protective layer below the vegetative layer will consist of 18 inches of soil. The cover protective layer will be compacted in the upper six inches during construction to inhibit root penetration into the drainage layer underlying the cap protective layer on the side slopes.

1.1.2.3 Geocomposite Drainage Layer

A geocomposite drainage layer consisting of a geotextile filter, a geonet drainage layer, and a geotextile friction layer will be placed beneath the cover protective layer on the 3H:1V side slopes. The geotextile filter, the geonet drainage layer, and the geotextile friction layer are bonded together to form the double-sided geocomposite drainage layer. The function of the proposed geotextile filter is to prevent soil particles of the overlying cap protective layer from penetrating and clogging the underlying geonet drainage layer. The purpose of the drainage layer is to remove the stormwater reaching the geonet and to minimize the potential of pore water pressure build-up in the overlying cap protective layer. The purpose of the geotextile friction layer is to increase the interface friction between the geomembrane and the geonet and thereby increase the stability of the final cover system.

1.1.2.4 Geomembrane

A geomembrane is proposed as a component of the final cover system to reduce infiltration of stormwater through the final cover system into the waste. The specified geomembrane is a 40-mil thick textured LLDPE geomembrane. The texturing is necessary to increase the stability of the final cover system. Specified property values for the final cover geomembrane are provided

in the "Technical Specifications" (Previously Submitted – No Change). The specified geomembrane meets the requirements of Rule 62-701.600(5)(g)(4), F.A.C.

1.1.3 Final Cover System Construction Procedure

The surface of the intermediate cover will be graded and compacted to prepare a minimum six-inch smooth base for the final cover geomembrane. The geomembrane and the geocomposite drainage layer will be terminated at the toe of the waste slope along the landfill perimeter. At the termination point, the final cover geomembrane will be welded to the geomembrane in the bottom liner system to seal the landfill. The geocomposite drainage layer will discharge into the drainage swales. The details of the final cover geomembrane and the geocomposite drainage layer termination are presented in the Permit Drawings.

1.1.4 Final Cover System Stability

A potential failure surface within the final cover system on the side slopes of the landfill was evaluated using veneer slope stability analysis discussed in the calculation package titled "Final Cover Veneer Slope Stability Analysis" (Previously Submitted – No Change).

A parametric or sensitivity analysis was performed to establish the minimum interface friction angle (δ) such that the calculated veneer stability factor of safety is equal to or greater than 1.5, an acceptable requirement in accordance with the stet-of-practice for landfill covers. The parametric analysis was performed by calculating the factor of safety for various values of interface friction angles.

The results of the parametric stability analyses indicate that the minimum interface friction angle required to achieve a factor of safety of 1.5 is typical of the soil-geosynthetic and geosynthetic-geosynthetic interface friction angles reported in the literature. Prior to construction of the final cover system, the interface friction angles between the actual soil and geosynthetic materials will be verified by performing site-specific interface shear strength testing.

1.1.5 Final Cover Drainage System Design

The final cover drainage system of the side slopes is designed to control seepage forces in the vegetative layer and is necessary for the stability of the vegetative layer. The final cover drainage system primarily consists of a geocomposite drainage layer placed on top of the geomembrane barrier layer of the final cover system. The geocomposite collects the water that percolates through the overlying vegetative layer and coveys the water to the drainage swales. Details of the final cover drainage system are presented in the Permit Drawings. Computations for maximum hydraulic head in the geocomposite drainage layer are discussed in the calculation package titled "Final Cover System Performance Evaluation" (Previously Submitted – No Change).

1.2 Certification of Closure

A Certification of Closure Construction Completion (CCC), signed and sealed by a professional engineer registered in the State of Florida, will be submitted to the FDEP within 30 days after closure completion of the Vista Landfill. This certification will document compliance with the requirements identified in Rule 62-701.600(6) F.A.C., and any minor deviations from the currently permitted plans.

A similar Certification will also be submitted to the FDEP's Environmental Resources Permitting Section to document the construction and compliance with currently permitted stormwater management plans.

A final topographic survey shall be performed by a Florida Registered Land Surveyor to verify that the final contours and elevations of the facility are in accordance with the plans as approved in the permit, and be submitted to the FDEP within 180 days after closure.

Waste Management Inc. of Florida understands that the disposal facility will not be officially closed until after Certification of Closure Construction Completion is submitted to the FDEP and the FDEP responds, within 30 days, with a letter of acknowledgement. The date of the FDEP's letter of acknowledgement of a certified copy of the declaration to the public for the landfill will be the official date of landfill closing and will initiate the long-term care period.

1.3 Declaration to the Public

After closing operations are approved by the FDEP, the facility owner or operator shall file a declaration to the public in the deed records, in the office of the county clerk, in the county in which the facility is located. The declaration shall include a legal description of the property on which the facility is located and a site plan specifying the area actually filled with Class III wastes. The declaration shall also include a notice that any future land owner or user of the site should consult with the FDEP prior to planning or initiating any activity involving the disturbance of the facility's cover, monitoring system, or other control structures. A certified copy of declaration shall be filed with the FDEP.

Permanent survey monuments will be installed to mark the boundaries of the landfilled property. The location and elevation of all markers shall be shown on a site plan, submitted with the subject declaration.

2.0 Stormwater Management

The proposed stormwater management facilities have been designed and shall be constructed in accordance with the approved Grading and Drainage Plan, and ERP Permit # ERP48-0171289-001-EM. A modification of this permit is in progress. In general, drainage swales will be incorporated in the final cover system on the side slopes of the landfill, as indicated in the Permit Drawings, to collect and convey surface water runoff at non-erosive velocities and limit the

length of sheet flow in the final cover, to minimize the formation of erosion rills and gullies in the vegetative layer. The down drain pipes will convey stormwater from the landfill top slopes to the stormwater ponds and ditches at the toe of the landfill. The down drain pipes will be 15, 18, or 24 inches in diameter double wall corrugated HDPE pipes (smooth inside) buried within the two foot thick vegetative layer of the final cover.

2.1 Design Criteria

The total runoff from the site and offsite areas generated by a 100-year frequency, 24-hour duration storm event shall be detained. The facilities shall be designed to evacuate a daily volume equivalent to one inch of runoff from the total area contributing to the stormwater facilities.

3.0 Site Clean-Up

All debris, refuse, junk, poles, piling and cables shall be removed from all disturbed lands as a part of the reclamation process. All structures shall be disassembled and removed, except where their reuse is consistent with post-reclamation land use goals and such reuse is approved by FDEP.

4.0 Water Quality

All waters on the reclaimed site shall meet all applicable federal, state, regional, and local water quality standards, laws, ordinances, rules and regulations, unless it can be demonstrated that pre-disposal operations water quality failed to meet such standards.

5.0 Seeding and Mulching

A dense stand of grass shall be established by sodding of the side slopes and seeding and mulching of the flat or top areas. Included with this task are fertilizing, watering, and periodic maintenance mowing as required to produce and maintain a healthy stand of grass. Seeding work shall be performed only after planting and other work affecting ground surface have been completed, unless the owner is specifically requested to do otherwise for purposes of stabilization, etc., prior to project completion.

6.0 Long-term Care

Waste Management Inc. of Florida will continue to monitor and maintain the integrity and effectiveness of the final cover as well as other appurtenances of the facility, control erosion, fill subsidences, comply with the groundwater monitoring plan, and maintain the stormwater system pursuant to the FDEP permit for 30 years from the date of closing, in accordance with the approved closure permit.

Before the expiration of the long-term care monitoring and maintenance period, the FDEP may extend the time period if the groundwater monitoring system indicates that the facility continues

to impact groundwater at concentrations which may be expected to result in violation of FDEP water quality standards or criteria; if site specific conditions make it likely that any contamination which may emanate from the disposal area would not be detected within five years; if the final cover does not have well established vegetation or is showing signs of continuing significant erosion problems; or if the permittee has not performed all required monitoring or maintenance.

WMIF may apply to the FDEP Central District for a permit modification to reduce the long term care period or eliminate some aspects of long term care. The FDEP will grant such modification if reasonable assurance is provided to the FDEP that there is no threat to human health or the environment and if the landfill:

(a) Has been constructed and operated in accordance with approved standards;
(b) Was closed with appropriate final cover, vegetative cover has been established, and a monitoring system has been installed;
(c) Has a 10-year history after closure of no violations of water quality standards or criteria detected in the monitoring system, and no increases over background water quality for any monitoring parameters which may be expected to result in violations of water quality standards or criteria; and
(d) Has had no detrimental erosion of cover, and subsidence of waste has ceased

WMIF may apply to the FDEP Central District for a modification to their groundwater monitoring plan to remove a parameter from the list specified in subsection 62-701.510(8), F.A.C. The FDEP will grant such modification upon a demonstration that leachate and groundwater have consistently been sampled and analyzed for the parameter, and the parameter has never been detected in the leachate or in any groundwater well during the active life of the landfill.

7.0 Replacement of Monitoring Devices

If the monitoring wells or other devices required by the Groundwater Monitoring Plan are destroyed or fail to operate for any reason, the facility owner or operator shall immediately, upon discovery, notify the FDEP in writing. All inoperative monitoring devices shall be repaired or replaced with functioning devices within 60 days of the discovery of the malfunctioning unit unless the facility owner or operator is notified otherwise in writing from the FDEP.

7.1 Long Term Monitoring

Once Vista Landfill is closed, groundwater and gas monitoring will continue for a period for up to 30 years with reports submitted to the FDEP on a semiannual basis. The owner may apply for a reduction in this period provided no problems have occurred, pursuant to Rule 62-701.620(3).

7.2 Maintenance

Regular maintenance of all reclaimed areas shall be performed by the operator or a designated agent in order to ensure that the reclamation standards are achieved and the approved reclamation plan is accomplished. The maintenance shall include monitoring for a minimum of five years after planting, replacement of any planted areas that fail to survive in accordance with the established standards, the removal of non-native species that have not been approved by FDEP, and the maintenance of all required slopes, embankments, ponds, fences, gates, signs, and stormwater facilities.

Cracks or eroded sections in the surface of any filled and covered area shall be properly repaired, and a regular maintenance program shall be followed to eliminate pockets or depressions that may develop as refuse settles. The slopes and drainage structures shall be inspected at least monthly and after major storm events for evidence of settling, erosion, washout, and siltation.

7.3 Revegetation

Revegetation of all disturbed areas shall be conducted in a manner so as to achieve permanent revegetation which shall minimize soil erosion and surface water runoff, conceal the effects of surface mining and recognize the requirements for appropriate habitat for fish and wildlife. Should washes, rills, gullies, or the like develop after revegetation and before a five-year maintenance period, such eroded areas shall be repaired, the slopes stabilized, and revegetated.

Good quality topsoil shall be applied as the soil cover material for all reclaimed areas. Revegetation efforts shall commence within 30 days after completion of regrading and shall be completed within 120 days.

7.4 Stabilization Report

Every five years after issuance of a permit for long-term care, the permittee shall submit a report to the FDEP that addresses stabilization of the landfill. The submittal shall include the technical report required in paragraph 62-701.510(9)(b) F.A.C. and shall also address subsidence, barrier layer effectiveness, storm water management, and gas production and management.

7.5 Right of Access

The landfill owner or operator shall process or acquire a sufficient interest in, or a right to use, the property for which a permit is issued, including the access route onto the property to carry out the requirements of the rule. The permittee shall retain the right of entry to the landfill property for the long term care period, after termination of solid waste operations, for inspection, monitoring, and maintenance of the site.

7.6 Long Term Care Completion

Following completion of the long-term care period for Vista Landfill, the owner or operator shall notify FDEP that a certification, signed and sealed by a professional engineer, verifying that long term care has been completed in accordance with the closure plan has been placed in the operating record.

8.0 Financial Assurance

As a condition of the Vista Landfill permit, WMIF shall provide the FDEP with proof of financial assurance, issued in favor of the State of Florida, in the amount of the closing and long-term care cost estimates for the facility. This proof of financial assurance shall be submitted to the FDEP as part of the permit application process and updated annually by March 1st, on form 62-701.900 (28) either by recalculation or inflation adjustment.

8.1 Deferred Financial Assurance

WMIF may delay submitting part of financial assurance for a solid waste disposal unit (cell) for the Vista Landfill under these conditions:

1. The solid waste disposal unit for which a permit is being sought has not received solid waste for storage or disposal;
2. The permit being sought does not authorize operation of the solid waste disposal unit, or requires specific separate approval by the FDEP prior to operation being authorized;
3. The permittee identifies the type of financial mechanism it intends to use, and provides reasonable assurance as part of the permit application that it is capable of obtaining and using the identified mechanism; and
4. The permittee submits Form 62-701.900(29), Financial Assurance Deferral Application as part of the permit application.

Attachment 6:

Enforcement History

Compliance History for Waste Management Inc. of Florida and Affiliates between 1/1/1990 and 11/11/2010

Date of Violation	Enforcement Status	Issuing Agency	Type of Action	Nature of Violation	Disposition	Fine or Penalty
Bayside of Marion, Inc. Ocala, Florida						
1997-11-23	Closed	FDEP	Letter of Non-compliance	Uncovered waste.	Resolved, no penalty	$ -0-
Central Disposal Pompano Beach, Florida						
1991-04-09	Closed	Broward County Dept. Of Natural Resources	NOV	Not submitting a contamination assessment report.	Settlement agreement entered into 8/20/91.	$370
1993-05-13	Closed	FDEP	NOV	Test results indicated that gas turbines exceeded permitted values for sulfur dioxide.		
1995-09-06	Closed	FDEP	NOV	Violation inspection on 8/9/95 revealed the facility accepted yard trash co-mingled with solid waste requiring disposal in a lined Class I landfill	No further action is required.	$ -0-
1998-06-23	Closed	Palm Beach Co. ECHB	Administrative Order	Alleged violations of solid waste permit	Order signed.	$250
1998-08-13	Closed	Palm Beach Co. ECHB	Administrative Order	Alleged violations of solid waste permit	Order signed.	$300
1999-10-25	Closed	Broward County	NOV	Emanating objectionable odors	Settlement Agreement.	$30,000
2005-10-20	Closed	Broward County Environmental Protection Dept.	Warning Notice	Alleged violations of the Broward County Code cited on October 17, 2005: Objectionable odors detected beyond the landfill property boundaries; Mulch used as initial cover instead of a half-and-half mixture of mulch and clean soil and side slopes were not stabilized as there was erosion of intermediate cover and exposed waste; Several whole waste tires were observed in the landfill active working face.	Corrective actions taken. Resolved through follow-up inspection by County representatives.	$ -0-
2010-04-07	Open	Broward County Environmental Protection Department	NOV	NOV 10-0010. Alleged violation of Broward County Code 27-27(a)(1) and (2) relating to a self-reported leachate release caused by accidental rupture of leachate force main during ditch maintenance.	No environmental impacts were found. NOV was finalized and calls for preventive/corrective actions and penalties. WMIF to sign NOV and make payment in lat e 2010. Corrective actions required by the NOV must be completed in 2011.	$9,199
Clay County Transfer Station Clay County, Florida						
2006-10-23	Closed	FDEP	Warning Letter	Placement of unauthorized waste (white goods) in a transfer trailer going to a Class I landfill	Short form consent order.	$2,750
2008-06-04	Closed	FDEP	Warning Letter	Structural damage to the push wall and inadequately charged fire extinguishers.	Short form consent order executed 1-12-2009.	$1250
Delta Recycling Davie Davie, Florida						
2008-08-22	Closed	SW Florida Water Management District	Consent Agreement	It was discovered that the water use well on site was not permitted through the South Florida Water Management District. Applications were submitted to obtain a permit. As a result, the SFWMD issued a Consent Agreement for withdrawing and/or utilizing water without	Consent Agreement signed and paid on 9-9-2008.	$500

				obtaining a consumptive use permit.		
Delta Recycling Pompano Pompano Beach, Florida						
2005-2-2	Closed	South Florida Water Management District	NOV	Consumptive use of water for landscape irrigation without permit authorization from SFWMD in accordance with Rule 40E-2.041, F.A.C. (Unauthorized water use was commenced by Delta Transfer Corp. prior to the acquisition of Delta's capital stock by WMIF).	Consent Agreement. Penalty paid.	$2,500
2007-09-12	Closed	Broward County Environmental Protection Department	NOV	On May 31, 2007 and August 9, 2007, the site allegedly received waste that it was not approved to accept under its current solid waste management license. The unauthorized waste was considered to be Class III materials.	Joint Motion for a Final Order and the Agreed Final Order are being finalized. Demand for payment of penalty has not been received yet.	$4,300
Delta Recycling Riviera Beach Riviera Beach, Florida						
2007-06-25	Closed	Palm Beach County Dept. of Health	Warning Notice	On June 22, 2007, during a facility inspection, PBCHD personnel observed the following alleged violations of the site's solid waste permit: The facility was observed accepting prohibited materials such as municipal solid waste for processing, processing and storage of solid waste was not being conducted indoors in an enclosed building or being conducted outdoors with a groundwater monitoring plan in place, and processing and storage of solid waste being conducted on a damaged concrete pad.	Consent order entered into and penalty paid to PBCHD.	$1,750
Florida Resource Management (facility now closed) Riviera Beach, Florida						
1995-08-03	Closed	FL DHRS	NOV	Inspection on 7/18/95 detected noisome odors on property downwind of the facility.	Written response included site Plan and operational modifications designed to address odor complaints.	$ -0-
1998-03-30	Closed	FL DHRS	NOV	Airborne particulate matter observed offsite.	AP-12-98-2-98 Settled 6/98 without an admission of any wrongdoing on part of Company.	$ -0-
1998-06-01	Closed	PBCHD	NOV	Allegations regarding C&D operations.	SW-4-98-1-98 Settled 8/13/98 without an admission of any wrongdoing on part of Company.	$ -0-
Fort Walton Beach Transfer Station Fort Walton Beach, Florida						
1994-08-26	Closed	FDEP	NOV	Inspection on 8/18/94 noted improperly maintained tipping area.	Consent order signed and penalty paid.	$6,350
Franklin County Transfer Station Callaway, Florida						
2005-09-16	Closed	FDEP	Warning Letter OGC No. 05-2434-19-SW	8/4/2005 inspection showed: Solid waste not contained within waste collection areas, failure to clean (at least on a weekly basis) all waste processing/storage areas, leachate discharge outside leachate collection system area, no operator or spotter on duty, failure to control	Letter of agreement signed. Fine assessed.	$6,500 plus $500 costs

				objectionable odors. A 10/16/2005 follow-up inspection confirmed that all requests in warning letter have been addressed. These include: (1) provide proper cleanup around waste processing facility collection area; (2) maintain leachate collection system with proper backup pumping system; and (3) maintain trained spotter on duty when facility operating.		
Gulf Coast Landfill Fort Myers, Florida						
2008-05-26	Closed	Lee County DoH	NOV	The summary letter indicated the following issues: (1) well head enclosure and treatment system enclosure were not locked; (2) the hose bib at the well head was threaded (a non-threaded hose bib is required); (3) no water main flushing or isolation valve exercising program in place.	Items corrected. Issue closed.	$ -0-
Gulf Disposal Fort Myers, Florida						
2008-10-16	Closed	City of Fort Myers	NOV	The City of Fort Myers issued an NOV alleging exceedances of water quality standards for leachate discharged to its treatment plant.	Re-sample revealed acceptable levels; POTW issued variances for several parameters.	$ -0-
Hillsborough Transfer Station Tampa, Florida						
2002	Closed	FDEP	Warning Letter WL02-0002SW27SWD	Alleged the following: Used oil spilling out into a Class I roll-off; C&D waste stored outside of Building B and the leachate collection system; excessive litter/debris along the property fence near Building A and in the stormwater ditches between Buildings A & B; metal ballast light casings behind Building A; Class I roll-offs were not covered and were located outside the leachate collection system. Class I roll-offs are in significant disrepair, causing leachate to discharge out of the containers outside of the leachate collection system; a large roll-off containing Class I waste located along the property fence near the oil containment tank was not covered and was stored in an unauthorized area; back wall of building B is in significant disrepair, causing waste to spill outside of the building and leachate collection system; both Buildings A & and B were in significant disrepair; severe erosion of the surface area where metal scraps are temporarily being stored; a crack in the surface area between Buildings A and B resulted in a hole; cracks in the pavement for both Buildings A and B; Yard Trash Area is severely eroded resulting in storage of the yard waste in ponded	Short Form Consent Order.	$48,700

				stormwater; C&D waste spilling over and mixed with Class III waste due to an inadequate concrete separation wall in Building B; a large amount of debris and waste blocking/clogging the leachate collection system in Buildings A and B; accumulation of leachate in the Building A leachate collection system to the brink of overflow; failure remove litter and debris from the stormwater system between Buildings A and B; cracks and a hole present in fuel containment wall on the northwest corner/side.		
2005-03-31	Completed	FDEP	Warning Letter WL05-0006SW29SWD	As a result of compliance inspections conducted October 7, 2004 and February 4, 2005, the following violations are alleged: - A five gallon metal bucket containing a "Flammable Liquid" was not stored under a roof on spill pallets with plastic drums, and was not managed such that discharge of potential contaminants to the environment were prevented, as required by the facility's Operating Plan (2/4/05). - Failure to perform a hazardous waste determination on the material in the metal bucket to determine how to properly dispose of the material. - Waste was observed located outside of the building and leachate collection system (10/7/04 & 2/4/05). - Used oil was observed leaking from an axle located outside the maintenance building (2/4/05). - Waste tires were improperly stored on the ground outside the building (2/405). - Batteries were improperly stored (2/4/2005).	Short Form Consent Order	$15,700
2006-09-21	Closed	FDEP	NOV	As a result of a compliance inspection conducted June 21, 2006, the following violations are alleged: (1) Leachate collection and removal system in C&D building not maintained as required. Drains and conveyances not kept clean so leachate flow is not impeded. Operations Plan not followed regarding maintenance of LCS. All Specific Conditions in the permit not being followed (2) Prohibited materials not removed from the waste stream. Operations Plan not followed regarding proper spotting of waste. All Specific Conditions in the permit not being followed	Penalty paid. Final Order issued 11/29/06.	$10,500
2008-05-15	Closed	FDEP	NOV	As a result of a compliance inspection conducted 2/12/2008, the following violations	Penalty paid. Short form consent order signed by WMIF on 9/5/08.	$5,750

				are alleged: 1. Unauthorized wastes present in pushed, spotted loads and not removed from the waste stream in accordance with the site operating permit and Operations Plan. 2. Containers for storing Class I (MSW) wastes removed from the waste stream did not have covers or were not situated under cover within the LCS in accordance with the site operating permit and Operations Plan.		
Immokalee Landfill **Immokalee (Collier County), Florida**						
2005-09-28	Closed	FDEP	Warning Letter OGC No. 05-2826-11-SW	A 6/29/2005 inspection showed waste stored in water. A 9/16/2005 inspection showed waste stored in water, no spotter at the C&D working face, inadequate initial cover on the Class I waste and unauthorized waste (Class I and Class III waste including mattress, clothes, gas tank, brown goods and garbage) not removed from the C&D waste.	Consent Order signed. WM shall immediately cease waste disposal/storage in an area subject to frequent and periodic flooding or in any natural or artificial body of water, including groundwater, on the Property; shall maintain adequate initial cover; shall schedule an inspection within 65 days of Consent Order to verify that: (1) all C&D has been removed from the water; (2) proper disposal or recycling of all C&D and prohibited wastes has been accomplished; and (3) adequate cover has been applied.	$5,500 plus $500 costs (costs split equally w/Naples Landfill for related issues).
Jacksonville Hauling **Jacksonville, Florida**						
2002-11-08	Closed	FDEP	Warning Letter	Alleged improper disposal of lead contaminated debris.		$ -0-
Medley Landfill **Medley, Florida**						
1991-10-16	Closed	FDEP	NOV	Site inspection on July 17, 1991 documented the discharge of leachate from the side slopes of the old unlined cell into the storm waste management system.	Consent Order signed and penalty paid.	$13,100
1993-11-30	Closed	Miami-Dade Environmental Resources Mgmt	NOV	Cease and desist order re: unpermitted material being landfilled at construction/demolition site.	Follow-up inspection determined facility was in compliance.	$ -0-
1993-12-08	Closed	Miami-Dade Environmental Resources Mgmt	NOV	Wastewater sampling on 11-18-1993 detected cyanide at an exceeded level.	Letter response indicated revised laboratory procedure to correct nitrite interference.	$ -0-
2002-07-22	Closed	Miami-Dade Environmental	NOV	Alleged leachate leaking into stormwater swale on southwest side of active cell. Alleged odors.	Corrective Action Notice 10/17/2002	$ -0-

		Resources Mgmt				
2003-05-01	Closed	Miami-Dade Environmental Resources Mgmt	Uniform Civil Violation Notice	Alleged failure to submit first quarter operating report for 2003 by April 15, 2003.	Report submitted; penalty paid.	$100
2006-11-14	Closed	Miami-Dade Environmental Resources Mgmt	Warning Letter	An inspection and records review indicates alleged violations of the Title V permit: The enclosed flare was shutdown for greater than an hour 117 times from January 1, 2003 to June 30, 2006; The enclosed flare temperature records were not kept in a form suitable to verify compliance; Records relating to the disposal of asbestos-containing material contained GPS coordinates for disposal locations but did not show the depth and the area; The annual stack test report conducted on April 11, 2006 was received 47 days after the 45 day submittal window; The temperature of the utility flare was recorded at 1164°F during the annual performance test which is less than the 1400°F temperature requirement noted in the permit; The submitted first and second quarter NSPS monitoring records did not include a map indicating exceedance locations and the surface emissions monitoring pattern; The Annual Statement of Compliance and the Annual Operating Report for year 2005 were submitted on March 7, 2006, whereas the due date was March 1, 2006.	Awaiting the agency investigation to conclude and the determination of any agency action that will be taken.	Agency investigation led to issuance of an NOV dated 3-27-2007.
2007-03-27	Closed	Miami-Dade Environmental Resources Management	NOV	After submittal of various documents provided in response to the Warning Notice dated November 14, 2006, DERM maintains the site is in violation of three of the originally-identified seven items, specifically: failure to maintain verifiable flame temperature monitoring records for the enclosed flare, inadequate maintenance of asbestos disposal mapping data, and the submittal of the April 11, 2006 enclosed flare stack test report was forty-seven days late.	Facility provided further information regarding the enclosed flare temperature monitoring records, causing that violation to be rescinded. Two violations remained and the penalty was reduced to $13,000. The penalty was paid to DERM, resolving the NOV. A consent order was not required to be signed or entered into.	$14,000, later **reduced to $13,000**
2008-08-06	Closed	Miami-Dade Environmental Resources Management	Warning Notice	On 7-1- 2008 DERM took a sample from the Leachate Treatment System. The sample indicated levels of oil and grease above the allowable limit. DERM collected a re-sample on 7-11-2008 with all readings within allowable limits. The Warning Notice was issued on 8-6-2008.	A response was required to explain the high levels of oil and grease and to state any actions that will be taken to prevent this from recurring. The response was submitted on 9-3-2008. To date, no further action has been taken by DERM.	$ -0-
2009-03-11	Closed	Miami-Dade Environmental Resources Management	Warning Notice	On November 21, 2008 samples from the Leachate Treatment system were analyzed as required by the sites IWP permit. The lab that analyzed the sample failed to perform the proper test method for metals. As a result DERM issued a warning notice on March 11,	DERM required that the proper test method be used and the report be resubmitted. The proper analysis was conducted and the report for the forth quarter of 2008 and the first quarter of 2009 were resubmitted on March 17, 2009. To date, no further	$ -0-

				2009.	action has been taken by DERM.	
Naples Landfill Naples (Collier County), Florida						
2005-09-30	Closed	FDEP	Warning Letter OGC No. 05-2826-11-SW	A 3/10/2005 inspection showed C&D waste stored in water, no spotter at the C&D working face, and prohibited materials (Class I and Class III waste including mattresses, furniture, electronic items and garbage) not removed from the waste stream. A 9/27/2005 inspection showed C&D waste stored in water, no spotter on the C&D working face, and prohibited materials (Class I and Class III waste including mattresses, furniture, electronic items and garbage) not removed from the waste stream.	Consent Order signed. WM shall immediately cease waste disposal/storage in an area subject to frequent and periodic flooding or in any natural or artificial body of water, including groundwater, on the Property; shall maintain adequate initial cover; shall schedule an inspection within 65 days of Consent Order to verify that: (1) all C&D has been removed from the water; (2) proper disposal or recycling of all C&D and prohibited wastes has been accomplished; and (3) adequate cover has been applied.	$4,500 plus $500 costs (costs split equally w/Immokalee Landfill for related issues).
2008-04-11	Closed	EPA Region 4	Compliance Order CAA-04-2008-1768	Year 2006 Statement of Compliance not submitted to EPA.	Submitted SOC via email.	$ -0-
Okeechobee Landfill, Inc. Okeechobee, Florida						
2003-10-20 and 2004-02-19	Open	FDEP	Warning Letters WL03-0184SW47SED and WL04-0010AS47SED	During facility inspection on 10/20/03 the following alleged violations were observed: Intermediate cover on south slope adjacent to working face eroded such that garbage was visible and leachate was entering stormwater system. Tires in working face. Leachate ponds filled to capacity. Offsite objectionable odor. Gas pressure interfering with liner system. Offsite objectionable odor.	Settlement agreement 3/10/2005. Penalty paid.	$12,500
2004-11-24	Closed	FDEP	Warning Letter WL04-0031AS47SED	Offsite objectionable odor.	Short Form Consent Order.	$4,500
2005-05-11	Closed	FDEP	Warning Letter WL05-0006AS47SED	Offsite objectionable odor	Short Form Consent Order.	$2,250
2005-06-03	Closed	FDEP	Warning Letter WL05-0017AS47SED	Alleges failure to report all items of noncompliance within annual statement of compliance for 2004.	SFCO OGC File # 06-1046	$1,250
2008-04-29	Closed	FDEP	Stipulated Penalty Demand Letter	Pursuant to the existing Settlement Agreement, FDEP alleged a verified objectionable odor complaint on 4/11/2008. The settlement agreement calls for a payment of $500 for each verified objectionable odor complaint while the agreement remains open. Not a new enforcement action.	Penalty paid.	$500
2009-08-25	Closed	FDEP	Stipulated Penalty Demand Letter	Pursuant to the existing Settlement Agreement, FDEP alleged a verified objectionable odor complaint on 7/27/2009 and 8/20/2009. The settlement agreement calls for a payment of $500 for each verified objectionable odor	Penalty paid.	$1,000

				complaint while the agreement remains open. Not a new enforcement action.		
2010-08-18	Closed	FDEP	Stipulated Penalty Demand Letter	Pursuant to the existing Settlement Agreement, FDEP alleged a verified objectionable odor complaint on 8/5/2010. The settlement agreement calls for a payment of $500 for each verified objectionable odor complaint while the agreement remains open. Not a new enforcement action.	Penalty paid.	$500
WM of Panama City (f/k/a Argus Services, Inc.) (formerly a/k/a Panama City Hauling) Panama City, Florida						
2003-01-07		FDEP	Warning Letter	Allegedly transporting wastes without having an EPA ID Number; accepting hazardous waste without proper manifest; improper management of hazardous waste during transport; improper disposal of hazardous waste; inadequate personnel training; violation of DOT transporter regulations.		
Panama City Landfill Panama City, Florida						
1996-06-24	Closed	FDEP	Administrative Order	Alleged non C&D material disposed o f at C&D facility	Material removed. Consent Order signed.	
Pinellas MRF Clearwater, Florida						
2005-03-31	Closed	FDEP	Warning Letter WL05-0005SW29SWD	Allegedly not rejecting unacceptable material (Jan. 26, 2005); allegedly not properly handling unacceptable materials (9/29/04 & 1/26/05); allegedly allowing waste outside building and LCS (9/29/04 & 1/26/05); allegedly not properly containing/managing used oil (1/26/05); allegedly not maintaining separation between C&D and Class III material inside building (9/29/04 & 1/26/05).	Short Form Consent Order.	$16,000
2005-11-18	Closed	FDEP	NOV OGC File 05-2302	Alleged that LCS not functioning as designed; tipping floor in disrepair; waste outside building and LCS; unacceptable wastes not removed from permitted waste streams; spill response in OPs Plan not followed; waste types not segregated as specified in OPs Plan; storm water system not functioning as designed; litter older than one day.	Executed Final Order.	$10,500
Quincy Transfer Station Leon County, Florida						
2006-08-04	Closed	FDEP	Warning Letter	Failure to have certified operator or spotter on-site during operating hours	Short form consent order	$1,500
Reuter Recycling of Florida Pembroke Pines, Florida						
2009-01-28	Completed	Broward County Water and Wastewater	NOV	On January 29, 2009 Reuter Recycling received an NOV alleging failure to comply with waste hauler discharge requirements and not	The response was submitted on 2-11-09. To date no invoice has been received and Broward County has taken no further	$ -0-

		Operations Division		following established SRF policies and procedures (a spill containing portable toilet waste occurred at the BCWWS Septage Receiving Facility). NOV required an explanation and stated an invoice in the amount $214.78 for the clean up would be sent after Broward County received the response.	action.	
Rosemary Hill Landfill Greencove Springs, Florida						
1994-10-05	Closed	FDEP	NOV	Field inspection on 9/21/1994 revealed the discharge of turbid water without a permit.	Letter response from County indicated corrective measures were taken.	$ -0-
Southern Sanitation Service Pompano Beach, Florida						
1993-09-17		Broward County Wastewater Management	NOV	Laboratory analysis determined wastewater discharge parameter limits were exceeded at the 12th Avenue location.		
1994-08-12		Broward County Wastewater Management	NOV	Laboratory analysis determined wastewater discharge parameter limits were exceeded at the 21st Avenue location.		
1997-03-07		Broward County Wastewater Management	NOV	Repeated samples not taken for October 1996. Self-monitoring sample collected late on 2/3/1997 for period ending 1/31/1997. Wastewater discharge limits exceeded for oil, grease and phenolics.	System taken off-line.	
1998-07-01		PW-OES	NOV	Alleged exceedance of wastewater discharge standards.	System taken off-line.	
1999-01-22		Broward County Wastewater Management	NOV	Self-monitoring documents due on 12/15/1998 were not received until 12/24/1998.	Penalty assessed.	$80
1999-03-26		Broward County Wastewater Management	NOV	Failure to submit monthly report to the Department by the 15th of the month.	Compliance notification dated 4/14/1999 stated that compliance had been verified and the matter closed.	
1999-04-19		Broward County Wastewater Management	NOV	Self-monitoring documents due on 3/15/1999 were not received until 3/31/1999.	Penalty assessed.	$220
1999-04-19		Broward County Wastewater Management	NOV	Violation of Broward County sewer use ordinance. Exceedance of wastewater effluent limits.	Penalty assessed.	$174.34
1999-07-26		Broward County Wastewater Management	NOV	33% or more exceedances of Technical Review Criteria daily concentration maximum in the period 1/1/1999 to 6/30/1999 for the parameters of phenol and zinc. 66% or more exceedances of concentration of daily maximum in the period 1/1/1999 to 6/30/1999 for the parameters phenol and zinc.	Within 10 days of receipt of NOV, a written response due.	$200
Springhill Regional Landfill Campbellton, Florida						
2009-01-12	Closed	USEPA	Compliance Order	Failure to submit 2007 Title V Statement of Compliance (SOC) to EPA Region 4.	SOC submitted. No penalties.	$ -0-

Trail Ridge Landfill, Inc. Baldwin, Florida						
1-27-2009	Open	SJRWMD	Draft Consent Order 2008-11	Alleges discharge of sediment from Maxville Borrow Pit adjacent to landfill and subsequent fill and degradation of off-site wetlands. Proposes penalty and mitigation.	Currently negotiating .	
9-23-2010	Open	FDEP	Warning Letter WL10-010SW16NED	Alleges failure to properly notify FDEP of an emergency situation related to erosion, malfunction of storm water system, and potential discharge of leachate to the storm water system.	Pending resolution.	
WM of Collier County Naples, Florida						
2008-08-27	Closed	FDEP	Non-compliance letter	NPDES compliance inspection performed at WM of Collier County, Naples, FL by SAIC on behalf of FDEP on August 27, 2008. Non-Compliance letter dated October 3, 2008 and received October 9, 2008 alleges the following potential violations: (1) Overspray from truck wash bay onto uncovered area of pavement with potential exposure to stormwater contact (2) Fluid leak/spill and heavy petroleum staining/accumulation in across-street parking lot. (3) Rusty sheet metal not stored under cover and cutting residue on ground with potential exposure to stormwater contact.	Repairs implemented. Issue closed	$ -0-
WM of the Florida Keys (Key Largo Transfer Station) Key Largo, Florida						
2005-10-14	Closed	FDEP	Warning Letter	A field inspection was conducted by FDEP and there was no certified operator or spotter at the facility. Rule 62-701.710(4)(c)1, F.A.C. requires a trained operator to be on duty whenever the facility is operating. Rule 62-701.710(4)(c)(2), F.A.C. requires at least one trained spotter on duty at all times that waste is received at the site.	Consent Order finalized and penalty paid.	$1,250
WM of Leon County Tallahassee, Florida						
1994-06-30	Closed	FDEP	NOV	Inspection on 6/22/94 noted tipping area not maintained and unpermitted modifications to the stormwater drainage plan	Settlement offer signed and penalty paid.	$1,150
WM of Palm Beach County Boynton Beach, Florida						
2004-06-22	Closed	PBC DERM	NOV	A field inspection conducted at the facility on June 14, 2004 indicated that the following violations may exist: -Failure to demonstrate financial responsibility to pay for corrective action and third party liability resulting from a	COI and CFR now onsite; inspections of tank interstices now being documented; tanks repainted 6/28/04.	$150

				discharge. The above-ground storage tanks must be insured. - Failure to perform release detection at least once per month. The interstitial space on both tanks must be checked. -Failure to repair any component of a storage tank system that has discharged or could discharge. Tanks must be painted.		
WM of Pasco County Springhill, Florida						
2005-08-31	Closed	FDEP	Warning Letter WN05-83-PWS-51-SWD	Alleged failure to submit the required bacteriological sample result and operating report for potable water well for the month of July 2005 by the August 10 deadline	SFCO, penalty paid.	$300
2007-07-23	Closed	FL Dept of Health	NOV	Operation of septic (port-o-let) hauling service without required permit from Hernando County.	Compliance notification dated 8/20/2007 stated all requirements were met and that the matter was resolved. No penalties of any kind.	$ -0-
WM of Pinellas County Clearwater, Florida						
1997-02-27	Completed	FL Dept. of Health	NOV	Transportation and storage of biomedical waste without a license.	Settlement agreement signed. No penalty.	
2005-01-21	Completed	Pinellas County Dept. of Environmental Management	NOV	Alleged discharge of petroleum products and refuse leachate to the County right-of-way at multiple locations on 11/1/2004, 12/3/2004 and 12/30/2004. Failure to immediately notify the County of the discharge and instructions to contain and/or clean up discharge.	Site received notice from the agency on 5/23/2005 that all stipulated remedial actions cited had been satisfied. The action is closed.	
WM of Sarasota (f/k/a General Sanitation/Englewood Sanitation) Sarasota, Florida						
2002-02-13	Completed	Sarasota County	Citation	Allegedly placing motor oil in a truck body.	Issue closed.	$500
2002-05-16	Completed	Sarasota County	Citation	2 citations for allegedly placing containers of used motor oil in the truck with the trash.	Issue closed.	$1,000
2008-07-14	Completed	Sarasota County DoH	NOV	Inspection of septic system performed by County Dept. of Health on 7/14/08; Notice of Ordinance Violation received 8/6/08. NOV alleges "sewage to ground surface" on 7/14/08.	System repaired. Issue closed.	$ -0-
WM of Tampa Tampa, Florida						
1994-01-07	Completed	SW Florida Water Management District	NOV	Inspection on 12/15/1993 revealed differences between drawing and constructed conditions; general manager not duly authorized agent; differences between drawing and design specification; conveyance swales; incorrect distance between open septic tank and RE.	Corrective construction completed. Penalty paid.	$4,000

Attachment 7:

Financial Assurance - Closure Cost Estimate Update

Financial Assurance

Vista Landfill, Class III Facility
Apopka, Florida

Prepared for:

WASTE MANAGEMENT, INC. OF FLORIDA

Vista Landfill, LLC
242 West Keene Road
Apopka, Florida 32703

Prepared by:

100 East Pine Street, Suite 605
Orlando, Florida 32801

HSA Golden Project No. 09-574.017

February 2011

David L. Leggett
2-17-2011

David L. Leggett, P.E.
Principal Engineer
Florida PE 70882
HSA Golden
100 East Pine Street, Suite 605
Orlando, Florida 32801

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APPENDICES

Appendix A FDEP Form 62-701.900(28)
Appendix B Third-Party Quotes

1.0 General

This section describes the basis of the calculations utilized in the development of the attached Financial Assurance recalculation spreadsheets for the Vista Landfill permit renewal, submitted as Appendices to this section. The FDEP Financial Assurance Cost Estimate Form No. 62-701.900(28) is included as Appendix A. Engineer's calculations and third party quotes are attached, or described below. The area for closure costs and long term costs is based on the Phase 1 footprint of 35.3 acres of Cells 1 through 4. Soil for earthwork is available on-site in a borrow pit in Phase II of the landfill. Since the closure soil is from an onsite source, based on a 2-8-2011 phone call with George Cheryan of FDEP Central District, to be conservative, a cost of $2.00/CY was added to all the earthwork quotes. The quotes shown in Appendix B assume on-site soil is available.

1.1 Closure Cost Estimates

Item 1 - Monitoring Wells: The groundwater monitoring well system for Phase 1 of the Vista Class III landfill has already been installed. Therefore, no additional cost is included as part of the closure cost estimate.

Item 2 - Slope and Fill: During Phase I, on-site soils will be used for six inches of intermediate cover. The volume is 28,500 cubic yards for a six-inch thick cover layer over 35.3 acres. The quoted cost per cubic yard includes on-site excavation, hauling, placement, spreading and compaction. A cost of $2.00/CY has been added to the quotes to be conservative. However, the quote from ERC includes excavation (assumed to be at $1.00/CY), therefore, a $2.00/CY safety factor cost was added for the onsite soils. The total unit cost for all of the items ($5.85/CY) includes the $2.00/CY and is based on a quote from ERC (see Appendix B).

Item 3 - Cover Material (barrier layer): The final cover system for Phase 1 is (from bottom to top):

> 40-mil PE textured geomembrane;
> geocomposite drainage layer on 3:1 side slope only; and
> 18 inch of cover protective soil layer ("off-site clay").
>
> The cost of $4.50/SY for 40-mil geomembrane (35.3 ac or 170,000 SY) and $5.40/SY for geocomposite drainage layer (16 ac or 72,400 SY) was obtained from Geo-Synthetics, Inc.
>
> Cover protective soil will consist of material obtained from on-site. Cost for cover protective soil includes excavation, hauling, placement, spreading and compaction. Cost for geosynthetics includes material and installation costs.
>
> 18 inches soil over 35.3 acres is 85,000 CY.
>
> The unit cost of $5.85 ($2.00 + $3.85) per cubic yard total cost for the cover item listed above is based on a quote from ERC (see Appendix B) to cover soil and application.

Item 4 - Vegetative Soil Cover: The vegetative soil cover is a six-inch layer over 35.3 acres, or 28,475 CY. The cost per CY includes hauling from on-site, placing and spreading. The quote of $5.85/CY ($2.00 off-site material + $1.925 "delivery" + $1.925 "spread") is from ERC (see Appendix C).

Item 5 - Vegetative Layer: The final cover area will be hydroseeded. The material and installation combined unit cost of $2,400 per acre is based on a quote from ERC (see Appendix B).

Item 6 - Stormwater Control System: Only a portion of the final stormwater control system is necessary for Phase I construction likely to occur within the next five years. The necessary items include earthwork for drainage swales, inlet structures and HDPE corrugated pipe downchutes. The earthwork estimate includes excavation, backfilling and compaction. The costs are based on a quote from ERC (see Appendix C) plus the $3.00/CY safety factor.

Item 7 - Gas Controls Passive: A total of six passive gas vents are proposed for Phase 1 development. Each will be 15-feet long. The estimated cost is $50 per foot. They total cost for gas controls will be $4,500.

Item 8 - Gas Controls Active Extraction: As described in the last quarter gas monitoring report, the gas wells at Vista Landfill (cell 1) have been converted to active extraction wells by tying in to the Keene Road Landfill active gas system. No costs have been added at this time.

Item 9 – Security System: Perimeter fencing, gates, and signs will be repaired, if necessary for closure. A $5,000 lump sum has been estimated.

Item 10 – Engineering: The total cost for engineering services for final closure is estimated to be $93,000 and is listed below:

Closure permit plan and report: $25,000
Final Survey: $10,000
Certification report by P.E.: $18,000
Drawings and Specifications: $40,000

Item 11 – Professional Services: It is estimated that 3% of construction costs will be needed for contract/construction management i.e., 0.03 x $2,245,733.75 = $67,372.01.

It is estimated that 7% of construction costs will be needed for construction quality assurance and testing including geosynthetic components i.e., 0.07 x $2,245,733.75 = $157,201.

Item 12 – Contingency: Contingency is estimated as 10% of closure cost.

Item 13 – Site Specific Cost: Mobilization is estimated to be 3% of construction cost, not including professional services i.e. 3% of $2,245,733.75 = $67,372.01.

1.2 Annual Long-Term Care Cost Estimates

Item 1 – Groundwater Monitoring: There are 18 groundwater monitoring wells that are installed in Phase 1 and are to be sampled on a semi-annual basis. The cost for each well is estimated to be $571.17, and includes all labor, equipment and lab analysis. The estimated cost is:

18 wells @$571.17/well x 2 = $20,562.12/year

Item 2 – Surface Water: The landfill is designed to have no discharge from the 100-year storm event. No surface water monitoring costs are included.

Item 3 - Gas Monitoring: Twelve (12) landfill gas soil monitoring probes are proposed for Phase 1 development of the Vista Class III Landfill. All wells will be sampled quarterly in accordance with Chapter 62-701, FAC. The cost to sample each well is estimated to be $50 per event, and includes all labor, equipment and laboratory analyses. The estimated cost for ground water monitoring is as follows:

12 wells@$50/well = $600 x 4 times per year = $2,400/year

Item 4 – Leachate: One leachate sample will be collected from Phase 1 annually. The cost is estimated to be $1,738, including labor, equipment and laboratory analyses.

Item 5 – Leachate Collection Maintenance: *Leachate collection pipes:* It is estimated that the pipes in each cell will require one cleaning within the 30-year monitoring period. The cost of $250/cell for cleaning was obtained from ERC (see Appendix B).

4 cells@$1000/cell = $4,000/30 years = $133.33/year.

Leachate Pumps: It is estimated that the pumps will require annual maintenance of $275/cell and each cell will require one replacement pump during the 30-year monitoring period. The estimated annual cost is $1,900 as listed below:

Annual maintenance = 4 cells@$275/cell = $1,100/year
Leachate pump replacement cost = 4 pumps@$6,000/pump/30 years = $800/year.

Leachate disposal: After closure, a leachate production rate was obtained from the previously approved HELP model analysis (i.e. Case 4) included in the calculation package titled "Leachate Collection System Analysis" of the 2007 application by Geosyntec Consultants. The estimated cost after closure is:

Leachate production rate: 0.75 cf/ac/year x 7.48 gal/cf x 35.3 acres = 200 gallons of leachate/year

Leachate disposal = 200 gal/year @ $0.12/gal for treatment at City WWTP = $24/year.

Total leachate system maintenance = $2,057 /year.

Item 6 - Maintenance of Groundwater Monitoring Wells: Estimate that 3 ground water monitoring wells will require abandonment and replacement within the 30-year monitoring period. The estimated total cost for ground water monitoring well maintenance is $300/year, and is itemized below:

Abandonment cost: $100 /year.
Replacement cost: $200/year.

Item 7 - Gas System Maintenance: No gas extraction system will be installed for the Vista Class III Landfill. Therefore, landfill gas system maintenance will not be required.

Item 8 - Landscape: Grass will require mowing quarterly at a cost of $100 per acre/quarter (cost obtained from ERC). The estimated total cost for landscaping is as follows:

Mowing/maintenance: 4 times/year x 35.3 acres @ $100/acre = $14,120/year.

Item 9 - Erosion Control and Cover Maintenance: As indicated on the attached FDEP form.

Item 10 - Storm water Management System Maintenance: As indicated on the attached FDEP form.

Item 11- Security System Maintenance: As indicated on the attached FDEP form.

Item 12 - Utilities: Estimate that the power requirements for site equipment (i.e., pumps, lights, blowers, etc.) will be $1,020 /month for 12 months. Therefore, the total estimated cost for utilities is $12,800 /year.

Item 13 - Leachate Collection/Treatment Systems Operation: Estimate that the leachate system operation will be monitored on a weekly basis by an on-site technician for a total of 3 hours/week for 52 weeks/year. The hourly rate for the on-site technician was estimated to be $50 /hour. The estimated cost for leachate collection system operation is as follows:

3 hours/week x 52 weeks/year @ $60/hour = $9,360/year.

Item 14 – Administrative: Estimate that the lump sum administrative/overhead costs for Phase 1 will be $14,000/year.

Item 15 – Contingency: A contingency of 10% of the total long term annual care cost was utilized which results in a cost of $8,901.25/year.

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Appendix A

Print Form | Reset Form

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(28), F.A.C.

Form Title: Closure Cost Estimating Form For Solid Waste Facilities

Effective Date: January 6, 2010

Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: Vista Landfill LLC WACS ID: 87081

Permit Application or Consent Order No.: SO48-0165969-015 Expiration Date: 4-19-2011

Facility Address: 242 West Keene Road, Apopka, Florida 32703

Permittee or Owner/Operator: Vista Landfill, LLC

Mailing Address: 242 West Keene Road, Apopka, Florida 32703

Latitude: 28 ° 38 ' 24.5 " Longitude: 81 ° 30 ' 41.7 "

Coordinate Method: State Plane Datum: NAD 83/90

Collected by: T. Jeffery Young, PSM, CP Company/Affiliation: Pickett Surv. & Photogram.

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing
Phase 1/1	7.39	11/14/2008	5 years	5 years		
Phase 1/2	9.54	1/25/2010	5 years	5 years		
Phase 1/3	9.23	Proposed	5 years	5 years		
Phase 1/4	9.14	Proposed	5 years	5 years		
Class III MRF						

Total disposal unit acreage included in this estimate: Closure: 35.3 Long-Term Care: 35.3

Facility type: (Check all that apply)
- ☐ Class I
- ☒ Class III
- ☐ C&D Debris Disposal
- ☒ Other: Class III MRF

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

- ☐ Letter of Credit*
- ☒ Insurance Certificate
- ☐ Escrow Account
- ☐ Performance Bond*
- ☐ Financial Test
- ☐ Form 29 (FA Deferral)
- ☐ Guarantee Bond*
- ☐ Trust Fund Agreement

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

III. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☒ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____

Number of Years of Long Term Care Remaining: × _____

Inflation Adjusted Long-Term Care Cost Estimate: = _____

Signature by: ☐ **Owner/Operator** ☒ **Engineer** (check what applies)

David L. Leggett 2-17-2011
Signature

David L. Leggett, P.E., Principal Engineer
Name & Title

2-17-2011
Date

407-649-5475
Telephone Number

100 East Pine Street, Suite 605
Address

Orlando, Florida 32801
City, State, Zip Code

dleggett@hsagolden.com
E-Mail Address

IV. ESTIMATED CLOSING COST (check what applies)

☒ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most exp
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY	28,500	$5.85	$166,725.00
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	$166,725.00
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY	85,000	$5.85	$497,250.00
Synthetics - 40 mil	SY	170,000	$4.50	$765,000.00
Synthetics - GCL	SY			
Synthetics - Geonet	SY	72,400	$5.40	$390,960.00
Synthetics - Other (explain)				
			Subtotal Cover Material:	$1,653,210.00
4. Top Soil Cover:				
Off-Site Material	CY	28,475	$2.00	$56,950.00
Delivery	CY	28,475	$1.93	$54,814.38
Spread	CY	28,475	$1.93	$54,814.38
			Subtotal Top Soil Cover:	$166,578.75
5. Vegetative Layer				
Sodding	SY			
Hydroseeding	AC	35.3	$2,400.00	$84,720.00
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	$84,720.00
6. Stormwater Control System:				
Earthwork	CY	10,000	$6.00	$60,000.00
Grading	SY			
Piping	LF	300	$20.00	$6,000.00
Ditches	LF			
Berms	LF			
Control Structures	EA	2	$3,000.00	$6,000.00
Other (explain)				
			Subtotal Stormwater Control System:	$72,000.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA	6	$750.00	$4,500.00
Pipe and Fittings	LF			
Monitoring Probes	EA			
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	$4,500.00
8. Active Gas Extraction Control:				
Traps	EA			
Sumps	EA			
Flare Assembly	EA			
Flame Arrestor	EA			
Mist Eliminator	EA			
Flow Meter	EA			
Blowers	EA			
Collection System	LF			
Other (explain)				
			Subtotal Active Gas Extraction Control:	
9. Security System:				
Fencing	LF			
Gate(s)	EA	1	$5,000.00	$5,000.00
Sign(s)	EA			
			Subtotal Security System:	$5,000.00
10. Engineering:				
Closure Plan Report	LS	1	$25,000.00	$25,000.00
Certified Engineering Drawings	LS	1		
NSPS/Title V Air Permit	LS	1		
Final Survey	LS	1	$10,000.00	$10,000.00
Certification of Closure	LS	1	$18,000.00	$18,000.00
Other (explain) Plans & Specs	LS	1	$40,000.00	$40,000.00
			Subtotal Engineering:	$93,000.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor					
On-Site Engineer					
Office Engineer					
On-Site Technician					
Other (explain)	0.3	$224,57	0.7	$224,57	$224,573.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1		
(included)			Subtotal Professional Services:	$224,573.00

Subtotal of 1-11 Above:	$2,470,306.75

12. Contingency 10 % of Subtotal of 1-11 Above $247,030.67

Subtotal Contingency: $247,030.67

Estimated Closing Cost Subtotal: $2,717,337.42

Description	Total Cost
13. Site Specific Costs	
Mobilization 3% of Subtotal of 1-10 above	$67,372.01
Waste Tire Facility	
Materials Recovery Facility	
Special Wastes	
Leachate Management System Modification	
Other (explain)	
Subtotal Site Specific Costs:	$67,372.01

TOTAL ESTIMATED CLOSING COSTS ($): $2,784,709.44

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☒ 30 Years ☐ Other, ___ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all entries left blank.

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2	18	$571.17	$20,562.12
Annually	1			
			Subtotal Groundwater Monitoring:	$20,562.12
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Surface Water Monitoring:	
3. Gas Monitoring [62-701.400(10)]				
Monthly	12			
Quarterly	4	12	$50.00	$2,400.00
Semi-Annually	2			
Annually	1			
			Subtotal Gas Monitoring:	$2,400.00
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1	1	$1,738.00	$1,738.00
Other (explain) _____				
			Subtotal Leachate Monitoring:	$1,738.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF			
Sumps, Traps	EA	1	$1,900.00	$1,900.00
Lift Stations	EA			
Cleaning	LS	1	$133.33	$133.33
Tanks	EA			

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY			
Sludge Removal	CY			
Aeration Systems				
Floating Aerators	EA			
Spray Aerators	EA			
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon	1	$24.00	$24.00
		Subtotal Leachate Collection / Treatment Systems Maintenance:		$2,057.33
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF			
Replacement	EA	1	$200.00	$200.00
Abandonment	EA	1	$100.00	$100.00
		Subtotal Groundwater Monitoring Well Maintenance:		$300.00
7. Gas System Maintenance				
Piping, Vents	LF			
Blowers	EA			
Flaring Units	EA			
Meters, Valves	EA			
Compressors	EA			
Flame Arrestors	EA			
Operation	LS	1		
		Subtotal Gas System Maintenance:		
8. Landscape Maintenance				
Mowing	AC	35.3	$400.00	$14,120.00
Fertilizer	AC			
		Subtotal Landscape Maintenance:		$14,120.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	500	$1.00	$500.00
Regrading	AC			
Liner Repair	SY	1	$7,500.00	$7,500.00
Clay	CY			
		Subtotal Erosion Control and Cover Maintenance:		$8,000.00
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	$2,500.00	$2,500.00
		Subtotal Storm Water Management System Maintenance:		$2,500.00
11. Security System Maintenance				
Fences	LS	1	$800.00	$800.00
Gate(s)	EA	1	$335.00	$335.00
Sign(s)	EA	2	$20.00	$40.00
		Subtotal Security System Maintenance:		$1,175.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	$12,800.00	$12,800.00
			Subtotal Utilities:	$12,800.00
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	156	$60.00	$9,360.00
Materials	LS	1		
	Subtotal Leachate Collection/Treatment Systems Operation:			$9,360.00
14. Administrative				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR			
Other	LS	1	$14,000.00	$14,000.00
			Subtotal Administrative:	$14,000.00
			Subtotal of 1-14 Above:	$89,012.45
15. Contingency	10	% of Subtotal of 1-14 Above		$8,901.25
			Subtotal Contingency:	$8,901.25

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
			Subtotal Site Specific Costs:	
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	$97,913.70
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	$2,937,410.85

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.

David L. Leggett 2-17-2011 Signature	HSA Golden 100 E. Pine Street, Suite 605 Mailing Address
David L. Leggett, P.E. Name and Title (please type)	Orlando, Florida 32801 City, State, Zip Code
2-17-2011 Date	dleggett@hsagolden.com E-Mail address (if available)
70882 Florida Registration Number (please affix seal)	407-649-5475 Telephone Number

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant	Mailing Address
Name and Title (please type)	City, State, Zip Code
E-Mail address (if available)	Telephone Number

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Appendix B

David Leggett

From: Jerry L. Pinder [Jerry.Pinder@ercflorida.com]
Sent: Wednesday, February 09, 2011 4:16 PM
To: David Leggett
Subject: RE: quotes needed

David,

I'm still on site at Vista, finishing the Vista Gas system, and also constructed the Cell 2 at Vista, and the 70 acre closure (bid shown below), and the gas system.

I attached the cost for the keene road closure for reference.

Thanks,

Jerry L. Pinder, President

ERC General Contracting Services, Inc.
890 Carter Road, Suite 170
Winter Garden FL 34787
Phone (407) 656-3900
Fax (407) 656-2128
Mobile (407) 468-1046
WWW.ERCFLORIDA.COM

From: David Leggett [mailto:dleggett@hsagolden.com]
Sent: Wednesday, February 09, 2011 2:15 PM
To: jerry.pinder@ercflorida.com
Subject: FW: quotes needed

David L. Leggett, P.E.
Principal Engineer
407.704.9891 (direct)

hsagolden
engineering environmental solutions
100 East Pine Street
Suite 605
Orlando, FL 32801
407.649.5475 (p)
407.649.6582 (f)
www.hsagolden.com

From: David Leggett
Sent: Tuesday, February 08, 2011 3:17 PM
To: 'Jerry Pinder'
Subject: quotes needed

Jerry,

I need quotes for the Vista landfill at 255 W Keene Road, Apopka, FL 32703 (by Thursday am if possible).

All soils are available on site approx 750' away (no cost for the soil) on-site excavation, placement, spreading, compaction needed.

Closure cost Item 2 on-site excavation, placement, spreading, compaction one foot over 35.3 acres — Closure Item 2
57,000 CY $_*[Jerry Pinder]* $3.85_/CY
Closure Cost Item 3 18" Cover protective soil over 35.3 ac 85,000 CY $_*[Jerry Pinder]* 3.85_/CY — Closure Item 3
Closure cost Item 4 vegetative soil cover 6" over 35.3 ac 28,475 CY $_*[Jerry Pinder]* 3.85_/CY — Closure Item 4
Closure Item 5 hydroseed 35.3 ac $*[Jerry Pinder]* 2,400__/ac — Closure Item 5
Closure Item 6 stormwater control 2-150' 18" corrugated HDPE pipes, 2 inlets, 10,000 CY earthwork placement $__/LS please break down into 3 pieces

[Jerry Pinder] pipe: $6,000, inlets: $2500, earthwork: 30,000. — Closure Item 6
Closure Cost Item 13 Mobilization $_*[Jerry Pinder]* 100000_/LS — Not used
Long Term Care Item 5 clean 6" leachate pipe 400' $_*[Jerry Pinder]* 1,000_/LS — Long Term Care Item 5
Long term care Item 9 Mowing 35.3 ac x 4 times per year Cost $_*[Jerry Pinder]* 400_/ac/quarter — Long Term Care Item 8

David Leggett

From: Bob Trexler [bobt@geo-synthetics.com]
Sent: Tuesday, February 08, 2011 2:00 PM
To: David Leggett
Subject: RE: Revised proposal from GSI

David,

Please see below, updated budgetary pricing as requested from GSI, for the Vista Landfill Project in Apopka, FL. Your new budgetary prices are as follows:

Price to supply and install approximately 35.3 acres/ 170,000 SY of 40 mil PE textured geomembrane will be at $4.50 per SY. — Closure Item 3

Price to supply and install approximately 16 acres/ 72,400 SY of a 200 mil geonet with an 8 oz non-woven geotextile heat bonded to both sides to create a geocomposite product will be at $5.40 per SY. — Closure Item 3

Please let me know if you have any additional questions.

Regards,

Bob Trexler
Geo-Synthetics, Inc.
9227 Memorial Pines Way
Spring, TX 77379
Office Phone: 281-257-2405
Cell Phone: 262-442-3101
FAX #: 281-257-4235
bobt@geo-synthetics.com
www.geo-synthetics.com

From: David Leggett [mailto:dleggett@hsagolden.com]
Sent: Tuesday, February 08, 2011 12:22 PM
To: Bob Trexler
Subject: FW: Revised proposal from GSI

Bob,

I need a quote (**by Wed PM if possible**) on geomembrane as follows:

Vista Landfill
242 W Keene Rd
Apopka, FL 32703 (Orange County)

35.3 acres 170,000 SY 40-mil PE textured geomembrane cost per SY
Approx. 16 acres 72,400 SY (part of same 35.3 acres) geocomposite drainage layer cost per SY

Email quote is sufficient.

David L. Leggett, P.E.
Principal Engineer
407.704.9891 (direct)

hsagolden
engineering environmental solutions
100 East Pine Street
Suite 605

David Leggett

From: Bob Trexler [bobt@geo-synthetics.com]
Sent: Monday, November 15, 2010 3:31 PM
To: David Leggett
Subject: RE: Revised proposal from GSI
Attachments: TM rev 0.pdf

David,

About all GSI would be able to offer as an annual repair cost for a project using our standard T & M Rates, copy attached.

We would send at a minimum, 1 Superintendent and 2 Technicians to the job site, which would also need to include the cost of travel to and from the jobsite, and their associated cost per day of completing any necessary repairs on the jobsite. For round #'s, I suggest that you calculate 3 working days and 2 travel days for each individual, per occurrence.

All of that being said, figure about $7,500.00 per repair occurrence, if necessary. Long Term Care Item 9

Please let me know if this is sufficient.

Regards,

Bob Trexler
Geo-Synthetics, Inc.
9227 Memorial Pines Way
Spring, TX 77379
Office Phone: 281-257-2405
Cell Phone: 262-442-3101
FAX #: 281-257-4235
bobt@geo-synthetics.com
www.geo-synthetics.com

From: David Leggett [mailto:dleggett@hsagolden.com]
Sent: Monday, November 15, 2010 2:13 PM
To: Bob Trexler
Subject: RE: Revised proposal from GSI

Bob,

Thanks for your help. I need one more thing from you. I need an annual cost for repair of 1,679 SY of liner (1% of total). Can you email that back to me by Wednesday? It doesn't have to be formal.

David L. Leggett, P.E.
Principal Engineer
407.704.9891 (direct)

hsagolden
engineering and environmental solutions
100 East Pine Street
Suite 605
Orlando, FL 32801
407.649.5475 (p)
407.649.6582 (f)

Vista Landfill Long Term Care Item 1

Groundwater sampling

60 hours @ 60/hr	$3600
MOB	425
Equipment + sample supplies	1,000
Lab	5,256
	$10,281/event

$\frac{10,281}{18 \text{ wells}}$ = $571.17/well

Long Term Care Item 4

4 hours @ $60/hr =	240.00
MOB	100.00
Lab	819.00
	$1,738/event

Long Term Care Item 3

4 hours @ 60/hr	$240
gas meter	$250
MOB	$100
	$590

590/12 = $50/well

David L. Leggett
2-10-2011

hsagolden engineering environmental solutions
100 East Pine St.
Suite 605
Orlando, FL 32801
Tel: 407 649-5475
Fax: 407 649-6582

PROJECT NO.: 09-574.020
DATE.: 2-10-2011
BY: David L. Leggett, PE

CALCULATION SHEET

SHEET 1 OF 1

Environmental Conservation Laboratories, Inc.

10775 Central Port Drive
Orlando, Florida 32824
(407) 826-5314 phone
(407) 850-6945 fax
NELAP #E83182

4810 Executive Park Ct, Suite 111
Jacksonville, FL 32216-6069
(904) 296-3007 phone
(904) 296-6210 fax
NELAP #E82277

102-A Woodwinds Industrial Court
Cary, NC 27511
(919) 467-3090 phone
(919) 467-3515 fax
NELAP #E87610

www.encolabs.com

February 8, 2011

HSA Golden
100 East Pine Street
Suite 605
Orlando, FL 32801

Re: **Vista Landfill – 18 Groundwater Samples for App. I & 1 Leachate for App. II**

Attention: Will Jacobs

Environmental Conservation Laboratories, Inc. is pleased to submit the following quotation for analytical services.

Sampling Supplies/Shipping Requirements

Shipping containers and bottles will be supplied by Environmental Conservation Laboratories, Inc. Samples must be iced from time of collection until received at the laboratory. Some analyses require special sample handling – please contact your Project Manager at the laboratory if you have any questions upon receipt of containers.

Quality Assurance

All of our facilities are accredited by NELAP and also maintain additional state certifications and approvals throughout the Southeast and Mid-Atlantic regions. Unit pricing includes adherence to and documentation of compliance with applicable Quality Assurance/ Quality Control protocols for each procedure performed. Our Quality Assurance/ Quality Control program ensures acceptable accuracy and precision for each analytical method. All published data is defensible, with quality control results provided with every report.

Analytical Requirements and Unit Pricing

Environmental Conservation Laboratories, Inc. anticipates receiving samples from HSA Golden from the proposed **Vista Landfill – 18 Groundwater Samples for App. I & 1 Leachate for App. II** project in the near future. These samples will be analyzed for the parameters listed in the Analytical Requirements and Unit Pricing section below.

Quantity	Matrix	Analytical Parameter	Rate	Extended
		Appendix I Listed Compounds		
		Florida Required Landfill Parameters		
18	Water	Ammonia Nitrogen	15.00	270.00
18	Water	Chloride	10.00	180.00
18	Water	Iron as Fe	7.00	126.00
18	Water	Mercury (included in Appendix II list Only)	15.00	270.00
18	Water	Nitrate Nitrogen	13.00	234.00
18	Water	Sodium as Na	7.00	126.00
18	Water	Total Dissolved Solids, TDS	10.00	180.00
		Appendix I Listed Costituents		
18	Water	Volatile Organic Compounds, VOC's	75.00	1350.00
18	Water	EDB & DBCP	35.00	630.00
18	Water	Metals: Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Ni,Se,Ag,Tl,V, and Zn	105.00	1890.00
		Cost per Sample	**292.00**	
		Anticipated Task Cost		**5256.00** – Long Term Care Item 1
		Leachate		
		Florida Required Landfill Parameters		
1	Leachate	Ammonia Nitrogen	15.00	15.00
1	Leachate	Bicarbonate	10.00	10.00
1	Leachate	Chloride	10.00	10.00
1	Leachate	Iron as Fe	7.00	7.00
1	Leachate	Mercury (included in Appendix II list Only)		
1	Leachate	Nitrate Nitrogen	13.00	13.00
1	Leachate	Sodium as Na	7.00	7.00
1	Leachate	Total Dissolved Solids, TDS	10.00	10.00
		Appendix I Listed Costituents		
1	Leachate	Volatile Organic Compounds, VOC's	75.00	75.00
1	Leachate	EDB & DBCP	35.00	35.00
1	Leachate	Extractable Organic Determinations as;	465.00	465.00
1	Leachate	Base Neutral Acid Extractables		
1	Leachate	Polynuclear Aromatic Hydrocarbons (low levels)		
1	Leachate	Organo-phosphorus Pesticides		
1	Leachate	Organo-chlorine Pesticides w/ PCB's		
1	Leachate	Chlorinated Herbicides		
1	Leachate	Metals: Sb,As,Ba,Be,Cd,Cr,Co,Cu,Pb,Hg,Ni,Se,Ag,Tl,Sn,V, and Zn	127.00	127.00
1	Leachate	Cyanide as CN, Total	30.00	30.00
1	Leachate	Sulfide, Total	15.00	15.00
		Cost per Sample	**819.00**	
		Anticipated Task Cost		**819.00** – Long Term Care Item 4

Comments/Special Considerations:

ADaPT included

Quote Expiration Date: February 8, 2011

This quote shall expire 120 days from the above date.

Terms and Conditions:

The information contained in this proposal is confidential and shall not be used or disclosed to any third party without prior written permission from Environmental Conservation Laboratories, Inc. In the absence of a written agreement, acceptance of samples is in accordance with Environmental Conservation Laboratories, Inc.'s attached Standard Terms and Conditions of Sale. All payment is due net thirty (30) days from invoicing date unless special arrangements have been requested and approved by ENCO.

Reporting Format

A final report summarizing all data and Quality Assurance/Quality Control results will be forwarded no later than one (1) day following completion of analyses. Additionally, ***numerous electronic reporting options are available*** – contact your Project Manager for details.

ENCO's standard Hardcopy Report includes the following minimum information:

Date of Sample Collection/Receipt/Extraction/Analysis
Analytical Data
Matrix Spike/Matrix Spike Duplicate Recoveries
Laboratory Check Sample Recoveries
MS/MSD Relative Percent Differences
Laboratory Blank Data
Surrogate Recoveries
Original Chain-of-Custody

Sample Disposal/Invoicing

Samples will be disposed of thirty (30) days after the report date, unless prior arrangements have been made with the laboratory. Samples will be held longer, upon request, on a fee per month basis.

To ensure successful completion of your project, I urge you to communicate any changes in the scope of work (i.e., methods, project start up dates, numbers of samples, matrices, etc.) to either myself or the laboratory as soon as possible. Should you require further information, please do not hesitate to contact me at (407) 826-5314.

Sincerely,
ENVIRONMENTAL CONSERVATION LABORATORIES, INC.

Russ Erickson

ENVIRONMENTAL CONSERVATION LABORATORIES, INC.
TERMS AND CONDITIONS

When a Client places an Order for any work to be done by Environmental Conservation Laboratories, Inc. ("ENCO"), the Order constitutes an acceptance by the Client of ENCO's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by ENCO in writing. A written agreement signed by both ENCO and Client may supersede some or all of these Terms and Conditions.

1. Orders, Samples, Services

The Client may place an Order by specifying a Scope of Work in writing or by telephone subsequently confirmed in writing. The Order shall not be valid unless it contains sufficient specification to enable ENCO, in its sole discretion, to carry out the Client's requirements. Samples must be accompanied by: a) adequate instruction on type of analysis requested, and b) complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. If any samples not accompanied by adequate disclosure cause interruption in ENCO's ability to process work due to contamination, the Client will be responsible for all costs associated with the contamination, including, but not limited to, clean-up and restoration of equipment and premises, and costs associated with ENCO's business interruption. All turnaround times must be mutually agreed upon and will be calculated from Sample Delivery Acceptance, which is the point in time when ENCO has determined that it can proceed with the defined work following receipt, inspection of samples, and resolution of any discrepancies in Chain of Custody forms and project guidance regarding work to be done. Sample delivery alone does not constitute acceptance by ENCO. Prior to Sample Delivery Acceptance at ENCO, the entire risk of loss of or damage to samples remains with the Client. In no event will ENCO have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from ENCO's premises. Client is responsible to ensure that sample shipments comply with all applicable material shipping and labeling laws and regulations. ENCO reserves the right to refuse or revoke Sample Delivery Acceptance for any sample which in ENCO's sole discretion: a) may pose a risk in handling, transport or processing; b) is of unsuitable volume; or c) holding times cannot be met. Unless otherwise specified by the Client and agreed to in writing by ENCO, sample materials will be held for 30 days following the date of the invoice for the work. After thirty days, any remaining materials will, in ENCO's sole discretion, be returned to the Client at the Client's expense or disposed of by ENCO.

2. Payment Terms

Services performed by ENCO will be in accordance with prices quoted and later confirmed in writing or as stated in its most recent Price List. Prices are subject to change periodically without notice. The prices quoted or stated in the Price List do not include any sales, use or other taxes unless specifically stated. All payment shall be made in currency of the United States of America. Checks drawn on foreign banking institutions are not accepted. Payment in advance is required for all Clients except those whose credit has been established with ENCO. For Clients with approved credit, payment terms are net 30 days from the date of invoicing by ENCO. All late payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is less) per month or portion thereof from the due date until the date of payment. All fees are the responsibility of the Client. ENCO will not bill a third party without a statement signed by the third party that acknowledges and accepts payment responsibility. Client remains responsible for payment of services billed to a third party. ENCO may suspend work and withhold delivery of data at any time in the event: a) Client fails to make timely payment of any of its invoices; or b) ENCO receives an unfavorable credit report on Client. Client shall be responsible for all costs and expenses of collection, including reasonable attorneys' fees. Client is responsible for work done prior to suspension of work.

3. Change Orders, Termination

Changes to the Scope of Work, price or result delivery date may be initiated by ENCO after Sample Delivery Acceptance due to any condition which conflicts with analytical or other protocols warranted in these Terms and Conditions. Changes to the Scope of Work may be initiated by the Client after Sample Delivery Acceptance. Such a change must be documented in writing and may result in a change in cost and turnaround time commitment. ENCO may in its sole discretion refuse to accept such changes, and ENCO's acceptance of such changes is contingent upon technical feasibility and operational capacity. Suspension or termination of all or any part of the work may be initiated by the Client. ENCO will complete all work in progress and Client is responsible for payment in full pursuant to these Terms and Conditions for all work completed.

4. Warranties, Liabilities, and Indemnification

Where applicable, ENCO will use analytical methodologies which are in substantial conformity with published test methods. ENCO has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures. Where, in ENCO's sole discretion, the nature or composition of the samples requires it, ENCO reserves the right to deviate from these methodologies to the extent necessary or appropriate, in ENCO's sole discretion. Client may request that ENCO perform according to a mutually agreed written Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, ENCO will proceed with analyses under its standard Quality Manuals then in effect, and ENCO will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP. ENCO shall start preparation and/or analysis within method-specified holding times provided that Sample Delivery Acceptance occurs within 48 hours of sampling or within ½ of the holding time for the test, whichever is less. Where resolution of inconsistencies leading to Sample Delivery Acceptance does not occur within this period, ENCO will use its best efforts to meet holding times and will proceed with the work provided that, in ENCO's judgment, the chain of custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with ENCO's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met. These warranty obligations are the sole and exclusive warranties given by ENCO in connection with any services performed by ENCO or any Results generated from such services, and ENCO gives and makes **NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED.** No representative of ENCO is authorized to give or make any other representation or warranty or modify this warranty in any way. Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by ENCO, will be limited to repeating any services performed, contingent on the Client's providing at the request of ENCO and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense.

ENCO's liability for any and all causes of action arising out of or related to this agreement or in connection with provision of services, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the service performed or $1,000. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall ENCO be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or not performed or by application or use of the reports prepared. Client agrees that these limitations appropriately reflect the business risk and are not unconscionable. In no event shall ENCO have any responsibility or liability to the Client for any failure or delay in performance by ENCO which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of ENCO. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond ENCO's reasonable control. The Client hereby agrees to indemnify and defend ENCO from any and all claims by any third party arising out of or related to that party's reliance upon the Results provided by ENCO, irrespective of ENCO's negligence or its failure to comply with its warranties or other obligations hereunder. Notwithstanding the Client's duty to indemnify and defend ENCO, the Client may not unreasonably withhold ENCO's right to defend its data.

5. Results, Work Product

Data or information provided to ENCO or generated by services performed under this agreement shall become the property of Client only upon receipt in full by ENCO of payment for the entire Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by ENCO for performance of work will be retained by ENCO, and Client shall not disclose such information to any third party. In the event that ENCO is required to respond to legal process related to services for Client, Client agrees to reimburse ENCO for hourly charges for personnel involved in the response and attorneys' fees reasonably incurred associated with the litigation and ENCO's response.

6. Miscellaneous Provisions

These Terms and Conditions, together with any additions or revisions which may be agreed to in writing and signed by ENCO, represent the entire agreement between the parties and provide the only remedies available. These Terms and Conditions shall supersede any previous communication, representations or agreements, either verbal or written, between the Client and ENCO. The invalidity or unenforceability, in whole or in any part, of any provision, term or condition hereof shall not affect the validity or enforceability of the remainder of these terms and conditions or their interpretations. No waiver by ENCO of any provision, term or condition hereof or of any obligation of the Client shall constitute a waiver of any subsequent breach or other obligation. These Terms and Conditions and any transactions or agreements to which they apply as well as any dispute between ENCO and the Client, whatever its basis, shall be governed by the laws of the State of Florida. The Client waives any defense of personal jurisdiction or forum non conveniens (inconvenient forum) and agrees to submit to personal jurisdiction of the courts of the State of Florida. The Client agrees that the sole and exclusive venue for any action filed in connection with any dispute arising between Client and ENCO shall be in a court of competent jurisdiction in Orange County Florida. **THE CLIENT EXPRESSLY WAIVES THE RIGHT TO TRIAL BY JURY IN ANY SUCH ACTION.**

Attachment 8:

Environmental Resources Permit

Department of Environmental Protection

Jeb Bush
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

David B. Struhs
Secretary

NOTICE OF PERMIT

CERTIFIED
7099 3400 0006 1320 1825

In the Matter of an
Application for Permit by:
Buttrey Development Two, LLC
P.O. Box 1029
Clarcona, Florida 32710-0016

Attention: John Buttrey, Owner

Orange County - ERP
DEP File Number: 48-0171289-001-EI
Keene Road Disposal Landfill

Dear Mr. Buttrey:

Enclosed is Permit Number ERP48-0171289-001-EI to construct a surface water management system for the Keene Road Class III Disposal Landfill located on Keene Road, Apopka, Orange County, Florida, issued pursuant to Section 373.118, 373.413, 373.416, and 373.426, *Florida Statutes* (F.S.) and Rules 62-4, 62-113, 62-302, 62-330, 62-343, 40C-4, 40C-40, 40C-41, and 40C-42, *Florida Administrative Code* (F.A.C.).

Pursuant to Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing this application.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this notice is filed with the Clerk of the Department.

Mediation under section 120.573 of the Florida Statutes is not available for this proceeding.

If there are any questions, please contact Gail Mowry of the Submerged Lands and Environmental Resource Program by telephone (407/893-3307), fax (407/893-3075), or internet (Gail.Mowry@dep.state.fl.us).

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Vivian F. Garfein
Director of District Management

Date: December 21, 2006

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk Date 12/21/2006

VFG/sw/glm

Enclosure: Permit No. Permit Number ERP48-0171289-001-EI

Copies furnished to: Ed Chesney, P.E., Bishop & Buttrey
Joan Budzynski, P.E., SJRWMD (Orlando)

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on 12/21/06 to the listed persons by Velmani Dias.

Rev. 4/91

Department of Environmental Protection

Jeb Bush
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

David B. Struhs
Secretary

PROJECT INFORMATION:
Permit Number: Permit Number ERP48-0171289-001-EI
Expiration Date: October 31, 2005
County: Orange
Latitude: 28° 38' 19"N;
Longitude: 81° 30' 45"W;
Section 28/Township 21 South/Range 28 East
Project: Keene Road Disposal Landfill

PERMITTEE:
Buttrey Development Two, LLC
P.O. Box 1029
Clarcona, Florida 32710-0016

Attention: John Buttrey, Owner

Orange County - ERP
DEP File Number: 48-0171289-001-EI

Dear Mr. Buttrey:

This permit is issued under the provisions of Part IV of Chapter 373, *Florida Statutes* (F.S.) and Chapters 62-4, 62-113, 62-302, 62-330, 62-343, 40C-4, 40C-40, 40C-41, and 40C-42, *Florida Administrative Code* (F.A.C.). The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Construct and Operate: A surface water management system associated the conversion of an existing borrow pit into a Class III Landfill. The surface water management system includes the construction of three dry retention ponds. The system is designed to retain the volume of runoff from the 100-year, 24-hour design storm with no off-site discharge.

Basin 10 will be served by a dry retention pond with bottom elevation of 70 feet N.G.V.D., top of bank of 96 feet N.G.V.D., and 5:1 side slopes (horizontal:vertical). Basin 20 will be served by a dry retention pond with bottom elevation of 70 feet N.G.V.D., top of bank of 84 feet N.G.V.D., and 5:1 side slopes. Basin 30 will be served by a dry retention pond with bottom elevation of 90 feet N.G.V.D., top of bank of 102 feet N.G.V.D., and 5:1 side slopes.

Basin 40 (Gallery) will be served by two exfiltration trenches, each 400-feet long by 15-feet wide by 15-feet deep. Trench 1 will be constructed of 400 linear feet of 18-inch diameter, perforated pipe, invert 74.96 feet N.G.V.D, and trench bottom elevation of 63.46 feet N.G.V.D. Trench 2 will be constructed of 400 linear feet of 18-inch diameter, perforated pipe, invert 68.96 feet N.G.V.D, and trench bottom elevation of 57.46 feet N.G.V.D.

A perimeter swale system will be located between the toe of the landfill and the perimeter to convey surface water runoff to the ponds. The swales will have side slopes of 3:1.

The existing borrow pit, which is still active, will have a finished bottom elevation of 70 feet N.G.V.D., top of bank of 100 feet N.G.V.D., side slopes of 5:1, and total storage capacity of 877 acre-feet.

Figures 1 through 10 will be attached to, and become a part of, this permit.

Other Permits: DEP Solid Waste Construct Permit

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violations of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control(and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

   (a) Have access to and copy any records that must be kept under conditions of the permit;

   (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

   (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any conditions or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   (a) A description of and cause of noncompliance; and
   (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of compliance with state Water Quality Standards (Section 401, PL 92-500)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

1. the date, exact place, and time of sampling or measurements;
2. the person responsible for performing the sampling or measurements;
3. the dates analyses were performed;
4. the person responsible for performing the analyses;
5. the analytical techniques or methods used;
6. the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

PERMIT ALTERATIONS

1. All construction, operation, and maintenance shall be as set forth in the plans, specifications and performance criteria contained in the Department's files and approved by this permit. Any alteration or modification to the stormwater system as permitted requires prior approval from the Department.

2. If any other regulatory agency should require revisions or modifications to the permitted project, the Department is to be notified of the revisions so that a determination can be made whether a permit modification is required.

3. Permittee must obtain a permit from the Department prior to beginning construction of subsequent phases or any other work associated with this project not specifically authorized by this permit.

SITE INSPECTION BY DEP STAFF

4. Department-authorized staff, upon proper identification, will have permission to enter, inspect, and observe the system to insure conformity with the plans and specifications approved by the permit. The plans are on file in the Central District Office of the Department of Environmental Protection.

WATER QUALITY

5. Turbidity must be controlled to prevent violations of water quality pursuant to Rule 62-302.530(70), *Florida Administrative Code*. Turbidity shall not exceed 29 Nephelometric Turbidity Units above natural background conditions. Turbidity barriers shall be correctly installed at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the proposed work. It is understood that "receiving waterbody" shall not be construed to mean the permittee's settling pond, dredge lake, or other parts of the permittee's closed water system. Turbidity barriers shall remain in place at all locations until construction is completed, soils are stabilized, and vegetation has been established.

   Upon final completion of the project and upon reasonable assurance that the project is no longer a potential turbidity source, the permittee will be responsible for the removal of the barriers.

SPECIFIC CONDITIONS:

CONSTRUCTION DETAILS

6. The permittee shall require the contractor to review and to maintain in good condition at the construction site a copy of this permit complete with all conditions, attachments, exhibits, and permit modifications issued for this permit. The complete permit copy must be available for review upon request by Department representatives.

7. Before any offsite discharge from the stormwater management system occurs, the retention and detention storage must be excavated to rough grade prior to building construction or placement of impervious surface within the area served by those systems.

   Adequate measures must be taken to prevent siltation of these treatment systems and control structures during construction or siltation must be removed prior to final grading and stabilization.

8. The attached construction commencement notice [Form 62-343.900(3) F.A.C.] must be received by the Department at least seven (7) days prior to the start of construction. The notice should include when construction will begin and approximately how long it will continue. If the construction term should exceed one year, an Annual Status Report for Surface Water Management System Construction is required to be submitted.

EROSION CONTROL MEASURES

9. Prior to and during construction, the permittee shall correctly implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (FDEP 1988), which are hereby incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan.

   If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specification in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (FDEP 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water courses.

SPECIFIC CONDITIONS:

10. The following measures shall be taken to minimize erosion:

    A. Swales and dry ponds: sodding of all side slopes; seeding and mulching of flat-lying bottom areas; and

    B. Berms and other disturbed flat-lying areas: seed and mulch.

    Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.

11. All wetland areas or water bodies which are outside of the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity and dewatering.

SUBMITTAL OF AS-BUILT PLANS

12. Within 30 days after completion of construction of the surface water management system, the permittee shall submit the attached form [Form 62-343.900(5) F.A.C.] and two sets of record drawings of the project as actually constructed thereby notifying the Department that the facilities area ready for final inspection and approval. The permit will be converted from a construction permit to an operation permit once the project is determined to be in compliance with the permitted plans and with conditions provided in Rule 40C-4.361, F.A.C.

13. The location of at least one bench mark (and it corresponding elevation) per stormwater pond should be placed in the vicinity of each inlet or outlet structure and will be clearly shown on the as-built plans provided to the Department.

INSPECTION REPORTS

14. Inspection reports for surface water management system shall be submitted to the Department two years after completion of construction and every two years thereafter on the attached form [Form 62-343.900(6) F.A.C.].

SPECIFIC CONDITIONS:

MAINTENANCE ACTIVITIES

15. The following maintenance activities shall be performed on

    A. All permitted systems:
        1. remove trash and debris;
        2. inspect inlets and outlets;
        3. remove sediments when the storage volume or conveyance capacity of the stormwater management system is below design levels; and
        4. stabilize and restore eroded areas.

    B. Retention and swale systems:
        1. mow and remove grass clippings;
        2. aerate, till, or replace topsoil; and
        3. re-establish vegetation on disturbed surfaces.

    C. Exfiltration systems:
        1. remove sediment and debris from sediment sumps.

16. If the system is not functioning as designed and permitted, operational maintenance must be performed immediately to restore the system. If operational maintenance measures are insufficient to enable the system to meet the design and performance standards of this chapter, the permittee must either replace the system or construct an alternative design. A permit modification must be obtained from the Department prior to constructing such an alternate design pursuant to section 40C-4.331, F.A.C.

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Vivian F. Garfein
Director of District Management

Date: December 21, 2001

Department of Environmental Protection

Jeb Bush
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

David B. Struhs
Secretary

ENVIRONMENTAL RESOURCE PERMIT
CONSTRUCTION COMMENCEMENT NOTICE

Project Name: _____ Phase: _____

I hereby notify the Department of Environmental Protection that the construction of the surface water management system authorized by Environmental Resource Permit No. _____ has commenced/is expected to commence on _____ 199____ and will require a duration of approximately _____ months _____ weeks to complete. It is understood that should the construction term extend beyond one year, I am obligated to submit the Annual Status Report for Surface Water Management System Construction.

PLEASE NOTE: If the actual construction commencement date is not known, Department staff should be so notified in writing to satisfy permit conditions.

_____
Permittee or Authorized Agent

_____
Title and Company

_____
Company Address

_____
Date

_____
City, State, Zip Code

_____
Telephone Number

Please send the completed form to:

Florida Department of Environmental Protection
Submerged Lands and Environmental Resources Program
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

DEP Form 62-343.900(3) F.A.C.
Effective Date: October 3, 1995

"More Protection, Less Process"

Printed on recycled paper.

Department of Environmental Protection

Jeb Bush
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

David B. Struhs
Secretary

ENVIRONMENTAL RESOURCE PERMIT
AS-BUILT CERTIFICATION BY A REGISTERED PROFESSIONAL

Permit Number: _____

Project Name: _____

I hereby certify that all components of this surface water management system have been built substantially in accordance with the approved plans and specifications and are ready for inspection. Any substantial deviations (noted below) from the approved plans and specifications will not prevent the system from functioning as designed when properly maintained and operated. These determinations are based upon on-site observation of the system conducted by me or by my designee under my direct supervision and/or my review of as-built plans certified by a registered professional or Land Surveyor licensed in the State of Florida.

Name (please print)	Signature of Professional Engineer
Company Name	Florida Registration Number
Company Address	Date
City, State, Zip Code	
Telephone Number	(Affix Seal)

Substantial deviations from the approved plans and specifications:

_____

_____

_____

_____

(Note: attach two copies of as-built plans when there are substantial deviations)

Within 30 days of completion of the system, submit two copies of the form to:

Florida Department of Environmental Protection
Submerged Lands and Environmental Resources Program
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

Department of Environmental Protection

Jeb Bush
Governor

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

David B. Struhs
Secretary

ENVIRONMENTAL RESOURCE PERMIT INSPECTION CERTIFICATION

Permit Number: _____

Project Name: _____

Inspection Date(s): _____

Inspection Results: (check one)

____I hereby certify that I or my designee under my direct supervision has inspected the system at the above referenced project and that the system appears to be functioning in accordance with the requirements of the permit and Chapter 373 F.S. (as applicable).

____The following necessary maintenance was conducted:

_____

_____

____I hereby certify that I or my designee under my direct supervision has inspected the system at the above referenced project and that the system does not appear to be functioning in accordance with the requirements of the permit and Chapter 373 F.S. (as applicable). I have informed the operation and maintenance entity of the following: (a) that the system does not appear to be functioning properly, (b) that maintenance is required to bring the system into compliance, and (c) if maintenance measures are not adequate to bring the system into compliance, the system may have to be replaced or an alternative design constructed subsequent to Department approval.

Name (please print)	Signature of Professional Engineer
Company Name	Florida Registration Number
Company Address	Date
City, State, Zip Code	
Telephone Number	(Affix Seal)

Within 30 days of completion of the inspection, submit two copies of this form to:

Florida Department of Environmental Protection
Submerged Lands and Environmental Resources Program
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

KEENE ROAD DISPOSAL CLASS III LANDFILL

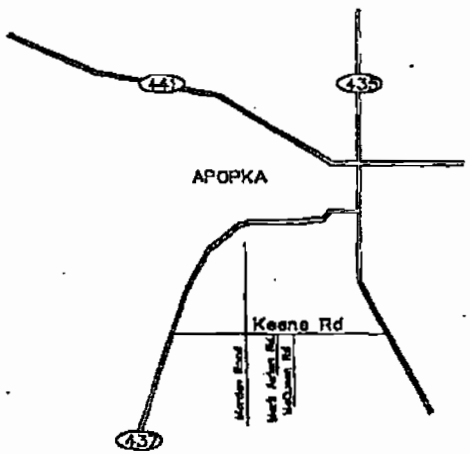


FIGURE 1

Owner:	Bishop Development Two, L.L.C. 6239 Edgewater Drive Suite D-1 Orlando, FL 32810 (407) 295-0016 ATTENTION: Mr. John Buttrey, Sr.
Civil/Geotechnical Hydrology Engineer:	Ed Chesney, P.E. Bishop & Buttrey, Inc. 6239 Edgewater Dr. suite D-1 Orlando, FL 32810 (407) 295-0016
Geotechnical Hydrology Consultants	Universal Engineering Sciences 3532 Maggie Blvd. Orlando, FL 32811 407-423-0504

PROJECT LEGAL DESCRIPTION

230 & 240 WEST KEENE ROAD, APOPKA, FLORIDA 32703.

THE NE 1/4 OF NE 1/4 AND E 1/2 OF NW 1/4 OF NE 1/4 OF SECTION 26 TOWNSHIP 21 RANGE 28 ALL LYING IN ORANGE COUNTY FLORIDA

DWG#	SHEET TITLE
1	COVER SHEET
2	AERIAL PHOTOGRAPH/LAND USE PLAN
3	MASTER PLAN
4	BASIN MAP
5	CELL LAYOUT
6	FINAL GRADE PLAN
7	SURFACE WATER CONTROL
8	DETAIL SHEET
9	DETAIL SHEET
10	DETAIL SHEET
11	LANDSCAPE SHEET

BISHOP & BUTTREY, INC.

KEENE ROAD DISPOSAL CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.

JOB NO.
DATE DECEMBER, 1998
SCALE
DRAWN BY EC
CHKD BY DC

REVISIONS
07/31/00

COVER SHEET

SHEET 1 OF 11

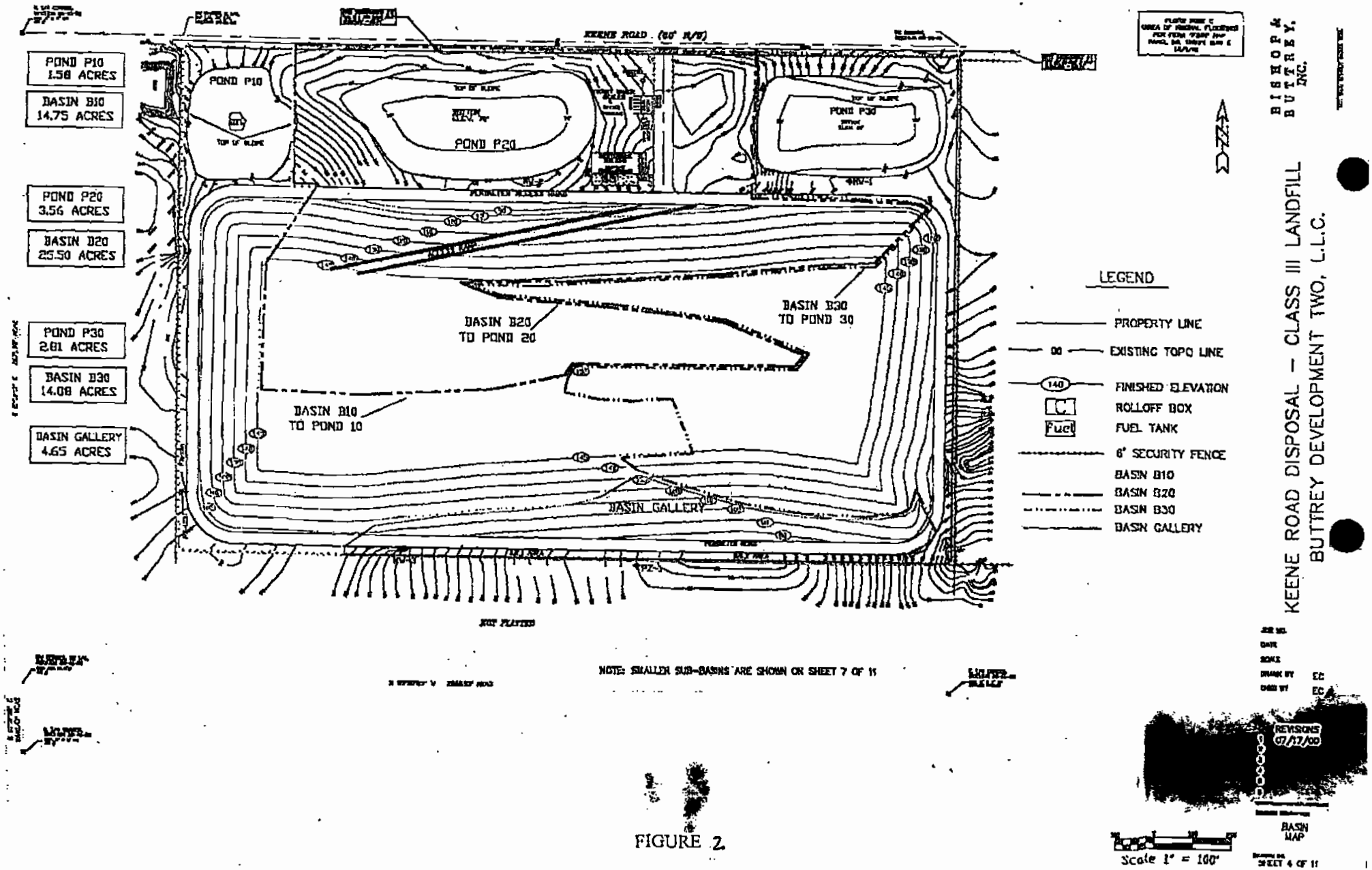
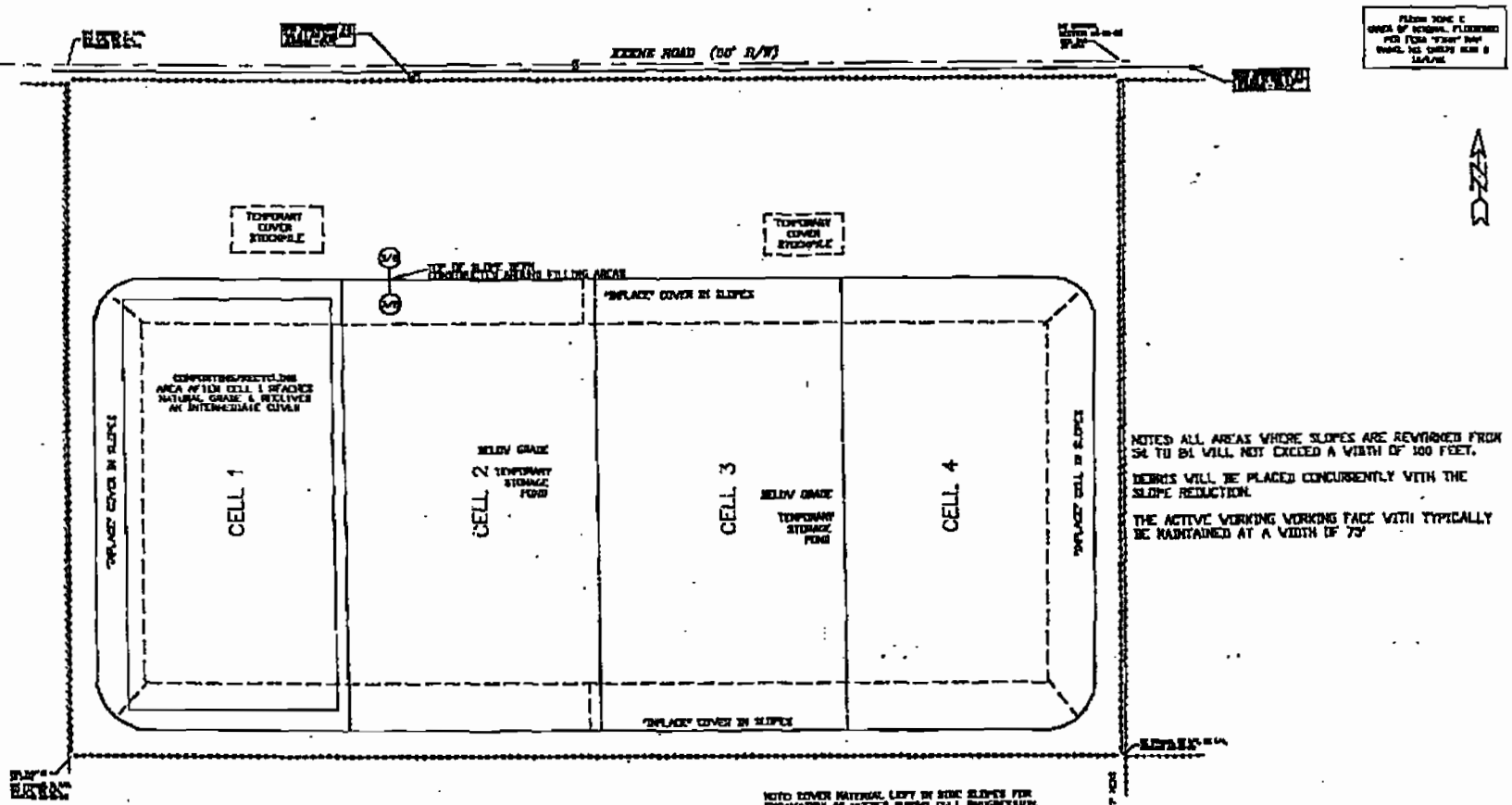

POND P10
1.58 ACRES
BASIN B10
14.75 ACRES
POND P20
3.56 ACRES
BASIN B20
25.50 ACRES
POND P30
2.81 ACRES
BASIN B30
14.08 ACRES
BASIN GALLERY
4.65 ACRES
POND P10
POND P20
POND P30
BASIN B20
TO POND 20
BASIN B30
TO POND 30
BASIN B10
TO POND 10
BASIN GALLERY
LEGEND
PROPERTY LINE
EXISTING TOPO LINE
FINISHED ELEVATION
ROLLOFF BOX
FUEL TANK
6' SECURITY FENCE
BASIN B10
BASIN B20
BASIN B30
BASIN GALLERY
NOTE: SMALLER SUB-BASINS ARE SHOWN ON SHEET 7 OF 11
BISHOP & BUTTREY, INC.
KEENE ROAD DISPOSAL – CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.
REVISIONS 07/17/00
BASIN MAP
Scale 1" = 100'
SHEET 4 OF 11

FIGURE 2



NOTED ALL AREAS WHERE SLOPES ARE REVERSED FROM 5H TO 8H WILL NOT EXCEED A WIDTH OF 100 FEET.

DEBRIS WILL BE PLACED CONCURRENTLY WITH THE SLOPE REDUCTION.

THE ACTIVE WORKING WORKING FACE WITH TYPICALLY BE MAINTAINED AT A WIDTH OF 75'

NOTE: COVER MATERIAL LEFT IN SOME SLOPES FOR EXCAVATION AS NOTED DURING CELL PROGRESSION. EXISTING MORE SLOPES CUT FROM 5H TO 8H

REFER TO SHEET 8 OF 11 FOR CROSS SECTIONS OF TYPICAL LIFT DETAILS

CELL NO.	AREA (ACRES)	VOLUME (CYDS)	ANNUAL DISPOSAL (CYDS - ESTIMATED)	COMPACTED VOLUME (CYDS @ 1K RATIO)	CELL LIFE (YRS)
1	9.17	739,850	600,000 [redacted]	[redacted] 300,000	2.53
2	9.33	1,017,642	600,000 [redacted]	[redacted] 300,000	3.39
3	9.25	994,703	600,000 [redacted]	[redacted] 300,000	3.31
4	9.23	728,325	600,000 [redacted]	[redacted] 300,000	2.42
TOTALS	~37	3,500,000	-	-	11.63

NOTE: CELL VOLUMES CALCULATED FOR BOTH ABOVE AND BELOW GRADE AREAS

BISHOP & BUTTREY, INC.

KEENE ROAD DISPOSAL -- CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.

JOB NO.
DATE
SCALE
DRAWN BY EC
CHKD BY EC

[redacted]
REVISIONS 07/17/00

CELL LAYOUT

Scale 1" = 100'

SHEET 9 OF 11

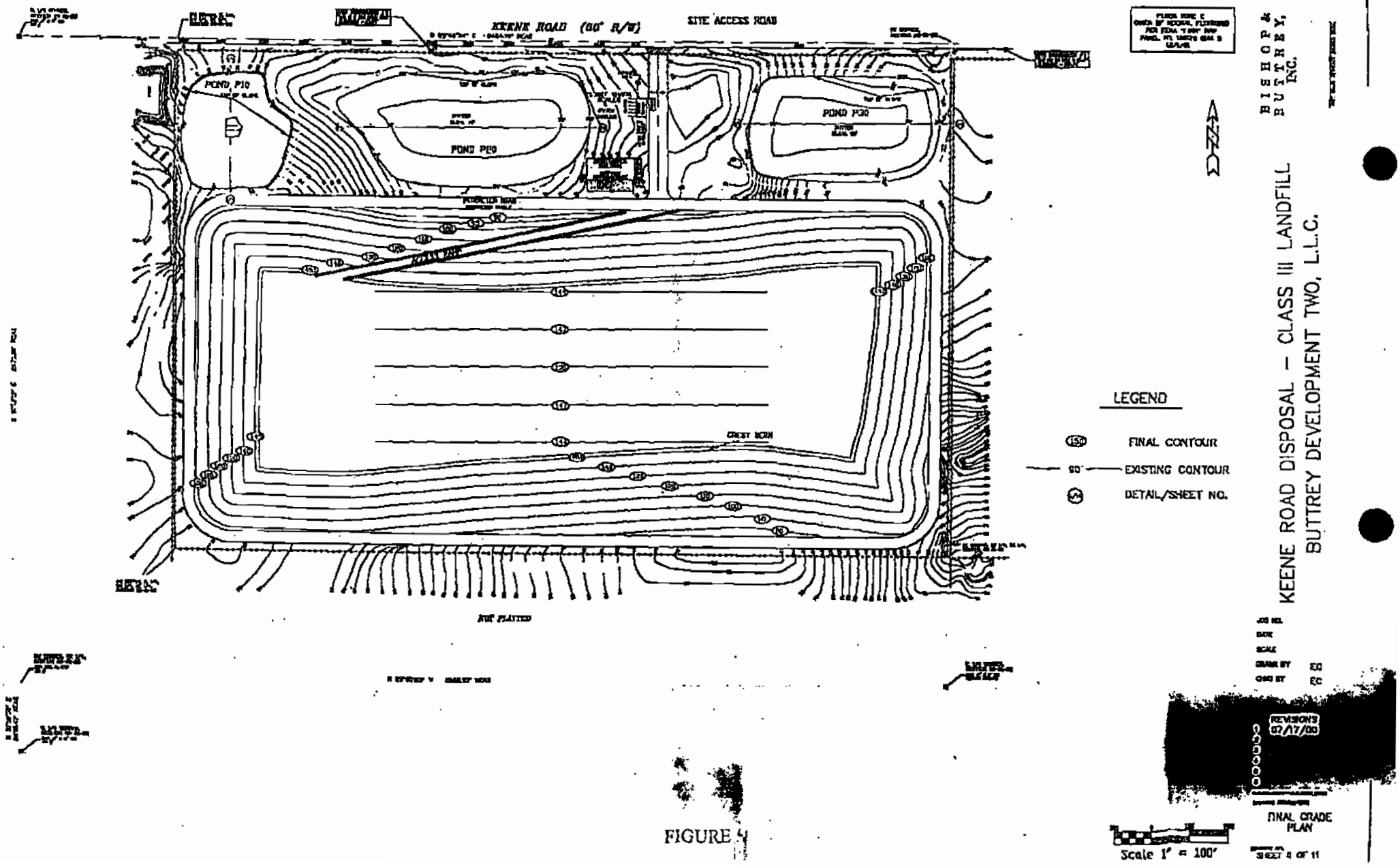
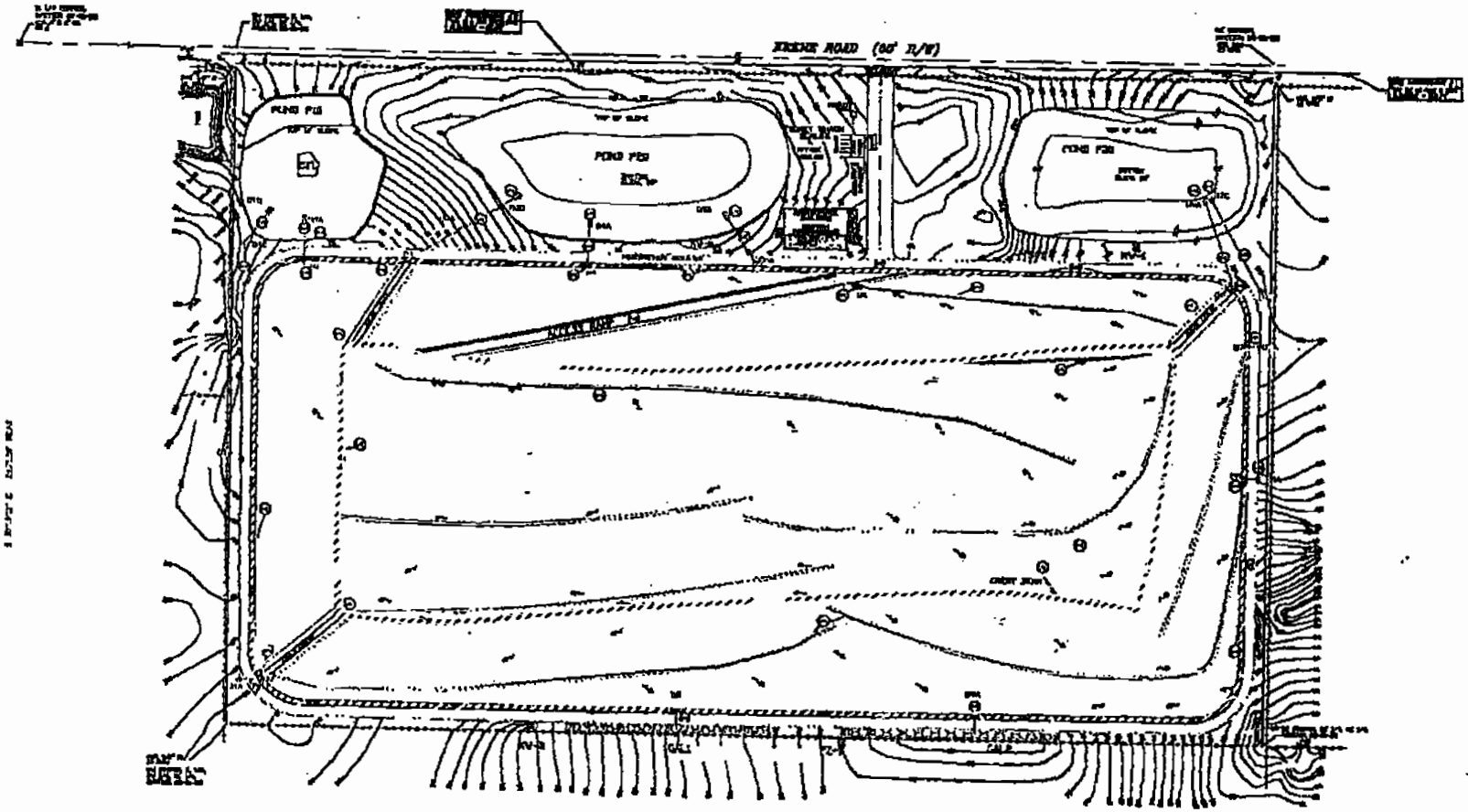

KEENE ROAD (60' R/W)
SITE ACCESS ROAD
POND P10
POND P20
POND P30
LEGEND
FINAL CONTOUR
EXISTING CONTOUR
DETAIL/SHEET NO.
BISHOP & BUTTREY, INC.
KEENE ROAD DISPOSAL – CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.
REVISIONS 07/17/00
FINAL GRADE PLAN
Scale 1" = 100'

FIGURE 4



LEGEND

	FINAL CONTOUR
— 90 —	EXISTING CONTOUR
	DETAIL SHEET REFERENCE
2.64 ACRES – P10	SUB-BASIN AREA & DESTINATION
	SPOT ELEVATION
D4 / D4A	PIPING DETAILS – SEE DETAIL SHEETS 9 OF 11 & 10 OF 11
	SILT FENCE FOR EROSION CONTROL/SEDIMENT MEASURES

FIGURE

BISHOP & BUTTREY, INC.

KEENE ROAD DISPOSAL – CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.

JOB NO.
DATE
SCALE
DRAWN BY EC
CHKD BY EC

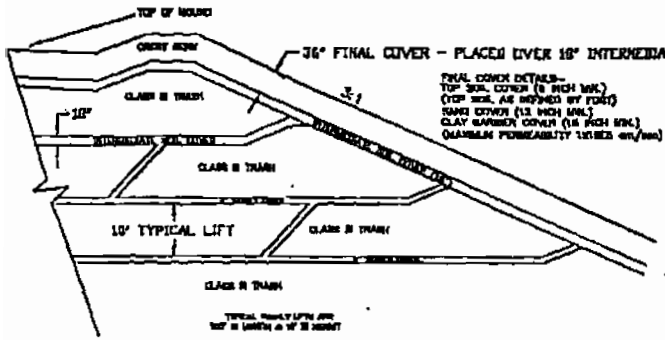
REVISIONS 07/17/00

SURFACE WATER CONTROL

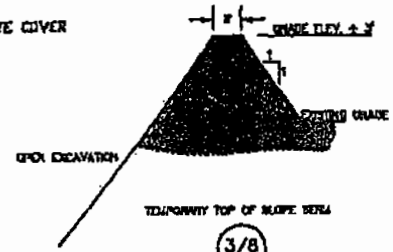
Scale 1" = 100'

SHEET 7 OF 11

SEP 2000
RECEIVED
D.E.P CENTRAL
DISTRICT

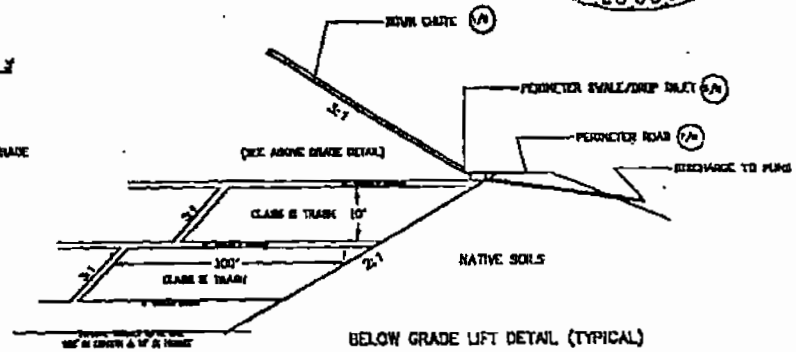


ABOVE GRADE LIFT DETAIL (TYPICAL)

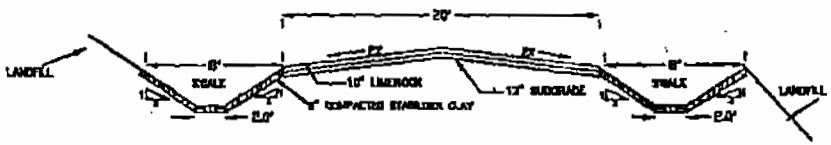


TEMPORARY TOP OF SLOPE DETAIL

3/8



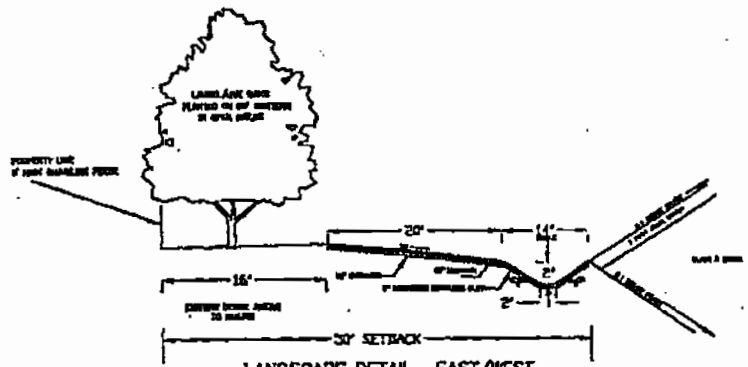
BELOW GRADE LIFT DETAIL (TYPICAL)



CONSTRUCTED OVER CAP MATERIAL

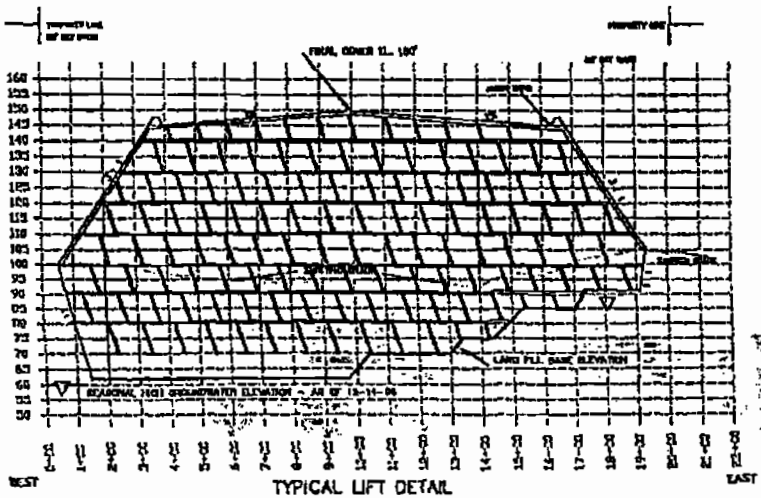
TYPICAL ACCESS RAMP – (HILL SIDE OF MOUND)

10/8



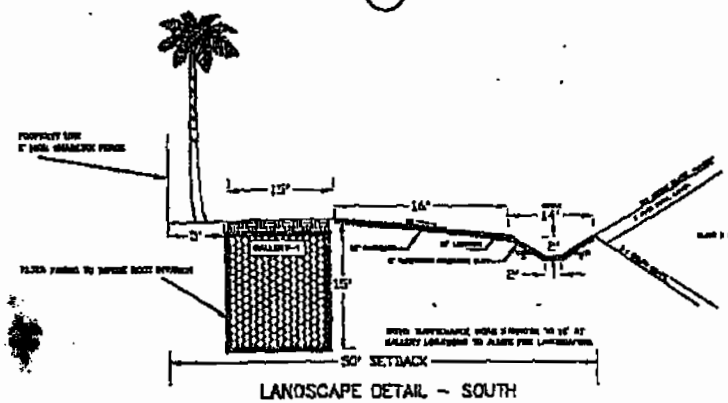
LANDSCAPE DETAIL– EAST/WEST

2/8



TYPICAL LIFT DETAIL

CROSS SECTION WEST TO EAST



LANDSCAPE DETAIL – SOUTH

1/8

FIGURE 6

BISHOP & BUTTREY, INC.

KEENE ROAD DISPOSAL CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.

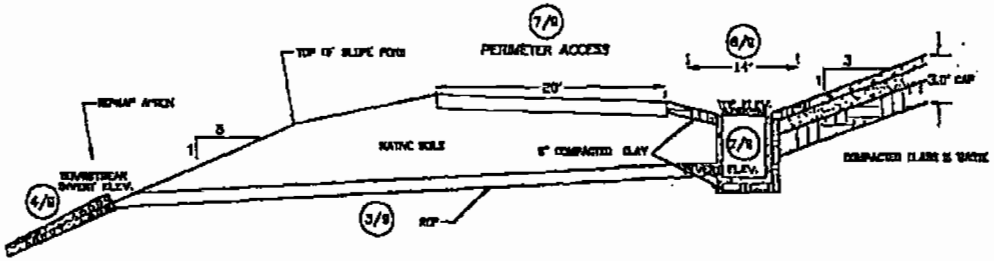
JOB NO.
DATE DECEMBER 1999
SCALE
DRAWN BY EC
CHKD BY EC

REVISIONS
07/24/00
08/31/00

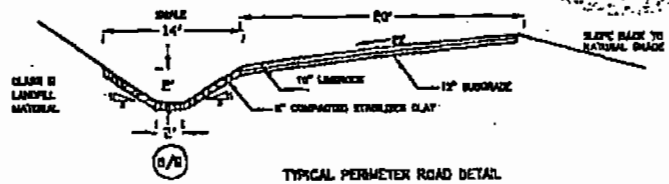
DETAILS

SHEET 8 OF 11

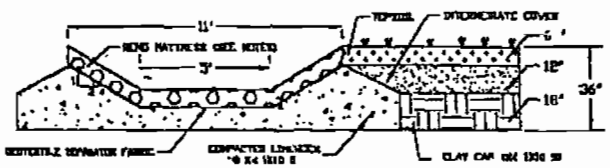
SEP 2000
RECEIVED
D.E.P. CENTRAL
DISTRICT



TYPICAL PIPING DETAIL
(REFER TO TABLES FOR SPECIFIC DETAILS)



TYPICAL PERIMETER ROAD DETAIL



DOWN CHUTE PROFILE

STRUCTURE DATA AS LABELED ON SHEET 7 OF 11

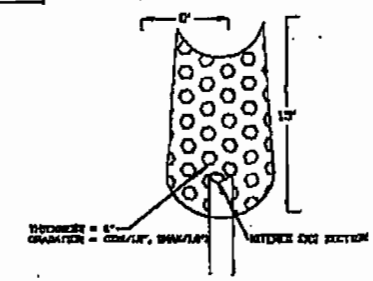
STRUCTURE	TOP ELEV. (FT.)	INVERT ELEV. (FT.)				TYPE
		K	S	C	V	
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]	[illegible]			FIRST TYPE "B" MANHOLE
[illegible]	[illegible]	[illegible]	[illegible]			FIRST TYPE "B" MANHOLE
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]				FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]		[illegible]		FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	FIRST TYPE "B" MANHOLE
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]				FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]			[illegible]	FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]		[illegible]		FIRST TYPE "B" MANHOLE
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]				FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]		[illegible]		FIRST TYPE "B" MANHOLE
[illegible]	[illegible]	[illegible]				MITERED END SECTION
[illegible]	[illegible]	[illegible]				FIRST TYPE "A" INLET W/GRATE W/ NON-TRAVERSABLE SLOTS
[illegible]	[illegible]	[illegible]			[illegible]	FIRST TYPE "B" MANHOLE

PIPE DATA AS LABELED ON SHEET 7 OF 11

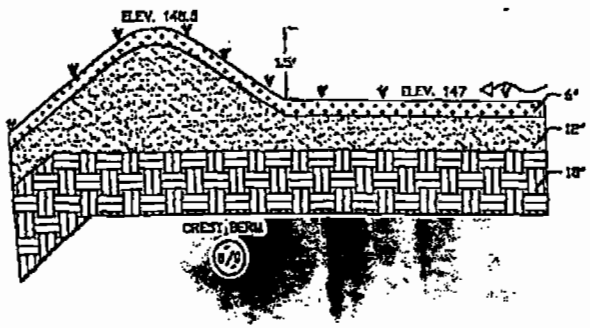
FROM STRUCTURE	TO STRUCTURE	LENGTH (FT.)	PIPE SIZE (INCHES)	PIPE TYPE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES:

1. RENO MATTRESS SHALL BE FLEXIBLE CHANNEL LINING MADE WITH WIRE BASKETS FILLED WITH SELECTED STONES. THE WIRE BASKETS SHALL BE MADE WITH DOUBLE TWISTED HEXAGONAL MESH (2.5" X 3.25") OF 0.0866" DIAMETER ANNEALED MILD STEEL WIRE, ZINC COATED ACCORDING TO ASTM 641-71 (OR ENGINEER APPROVED EQUAL). THE SELECTED STONES SHALL BE SOUND ROCK AGGREGATE WITH A D50 OF 5" AND A MAXIMUM SIZE OF 6" (SIEVE) AND A MINIMUM OF 85% BY WEIGHT LARGER THAN 3" (SIEVE).



RIPRAP POND APRON
TYPICAL



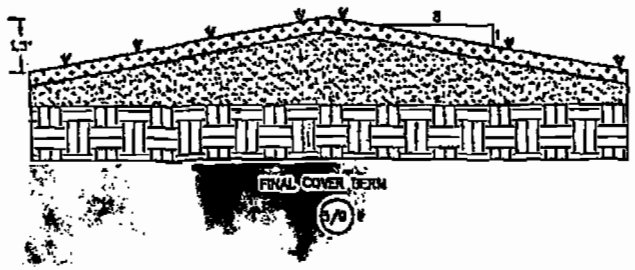


FIGURE 7

LEGEND

TOP SOIL COVER (6 INCH MIN.)

SAND COVER (12 INCH MIN.)

CLAY BARRIER COVER (18 INCH MIN.)

BISHOP & BUTTREY, INC.

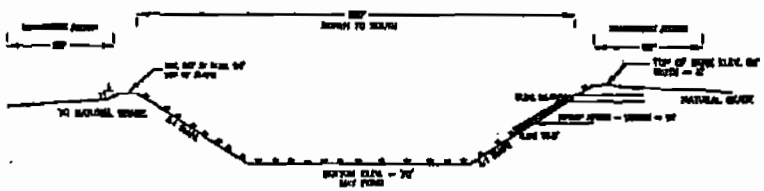
KEENE ROAD DISPOSAL CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO L.L.C.

JOB NO.
DATE DECEMBER 1998
SCALE
DRAWN BY EC
CHKD BY EC

1	REVISIONS
2	07/24/00
3	08/31/00

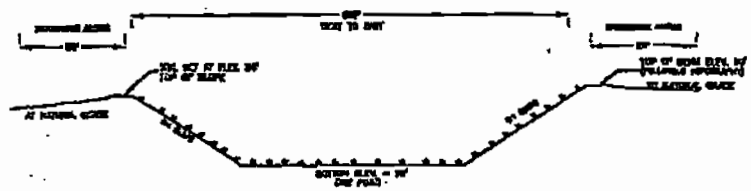
DETAILS

SHEET 8 OF 11



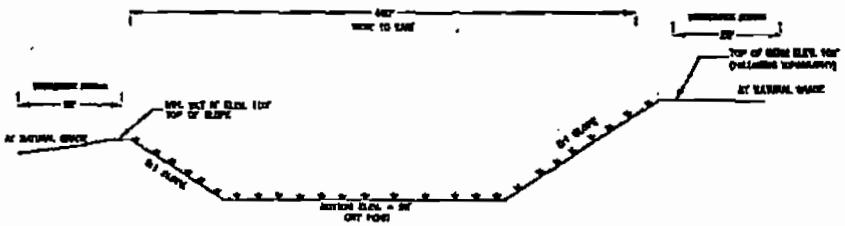
POND 10 CROSS SECTION

(1/10)



POND 20 CROSS SECTION

(2/10)



POND 30 CROSS SECTION

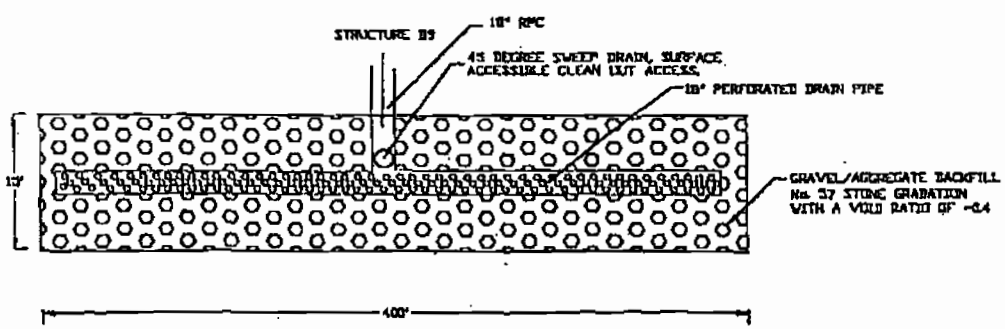
(3/10)

PIPE DATA AS LABELED ON SHEET 7 OF 11 - FOR GALLERY CONSTRUCTION

FROM STRUCTURE	TO STRUCTURE	LENGTH (FT)	PIPE STRC (INCHES)	PIPE TYPE
D9	GAL1	80	18	RCP
D9A	GAL2	80	30	RCP

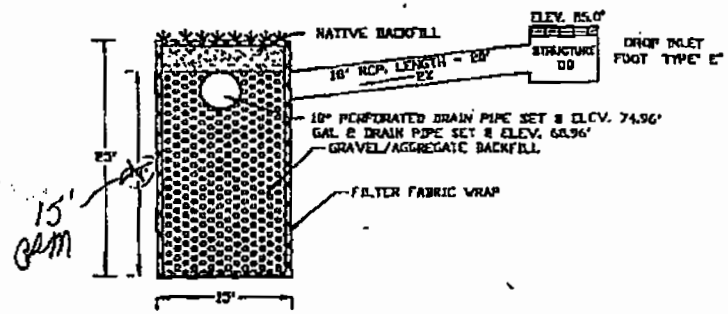
STRUCTURE DATA AS LABELED ON SHEET 7 OF 11

STRUCTURE	TOP ELEV. (FT)	INVERT (FT)	TYPE
D9	65.0	73	FOOT TYPE E-DOUBLE NON-TRAVERSABLE SLOTS
D9A	78.0	69	FOOT TYPE E-DOUBLE NON-TRAVERSABLE SLOTS



INFILTRATION GALLERY
PLAN VIEW (GAL1)

(5/10)



INFILTRATION GALLERY
PROFILE VIEW
(GAL1)

GAL2 CONSTRUCTED AS NOTED IN ABOVE TABLES

FIGURE 8

BISHOP & BUTTREY, INC.

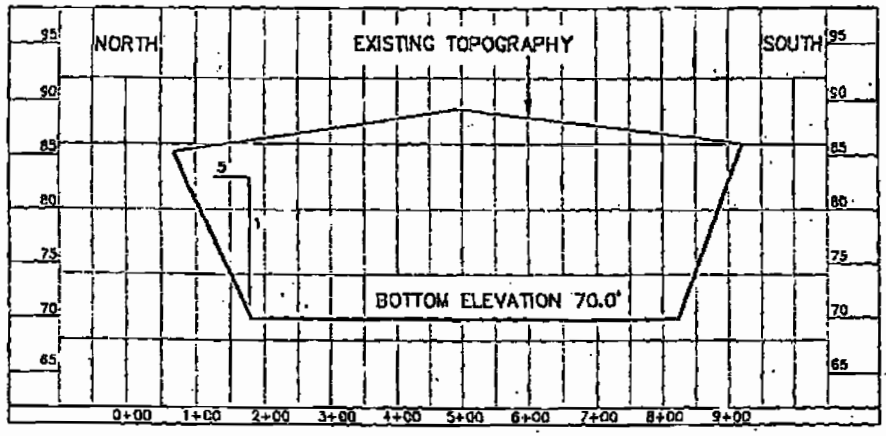
KEENE ROAD DISPOSAL CLASS III LANDFILL
BUTTREY DEVELOPMENT TWO, L.L.C.

JOB NO.
DATE DECEMBER 1999
SCALE
DRAWN BY EC
CHKD BY EC

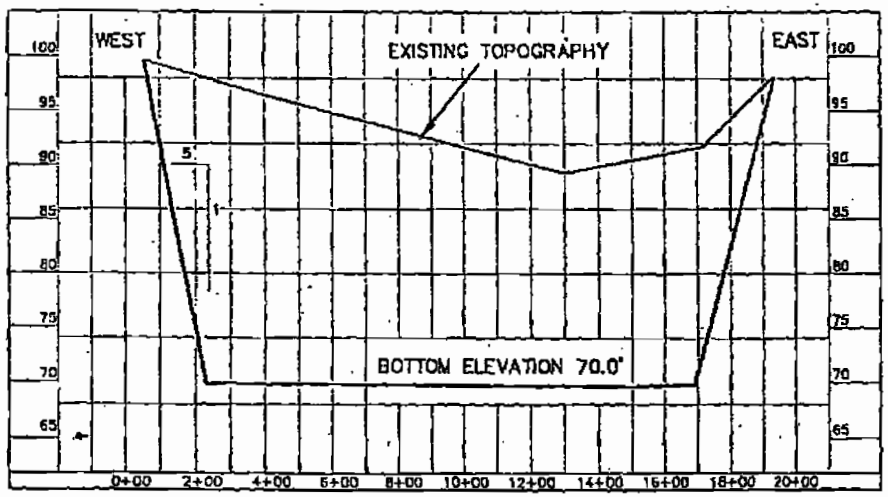
1 REVISIONS
3 07/24/00
4 08/31/00
5
6
7

DETAILS

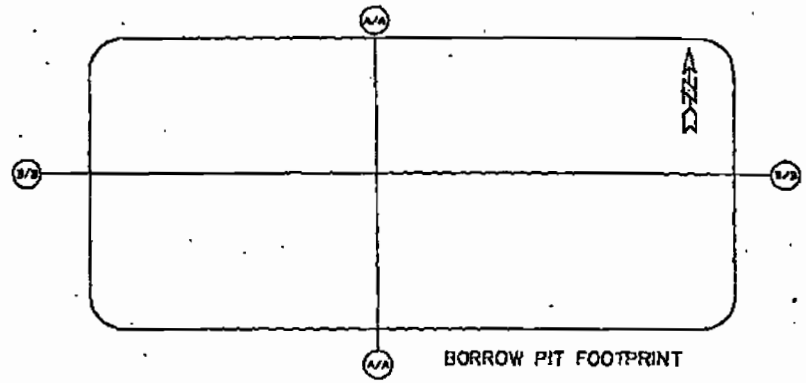
SHEET 10 OF 11



A/A SECTION A/A

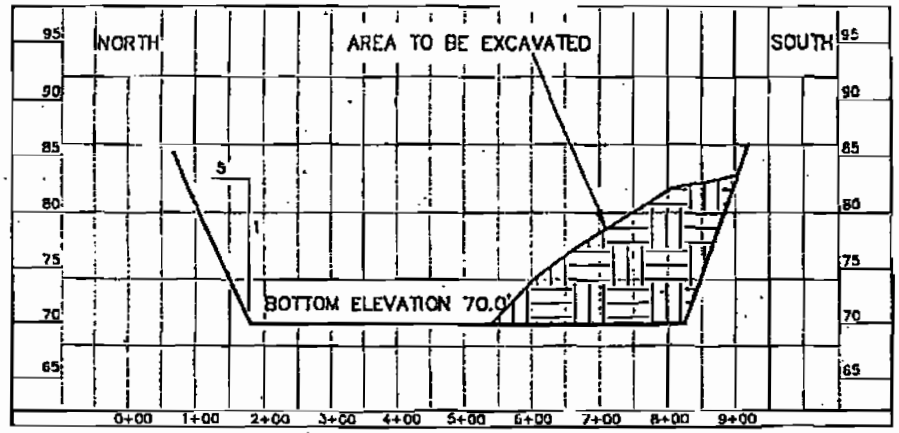


B/B SECTION B/B

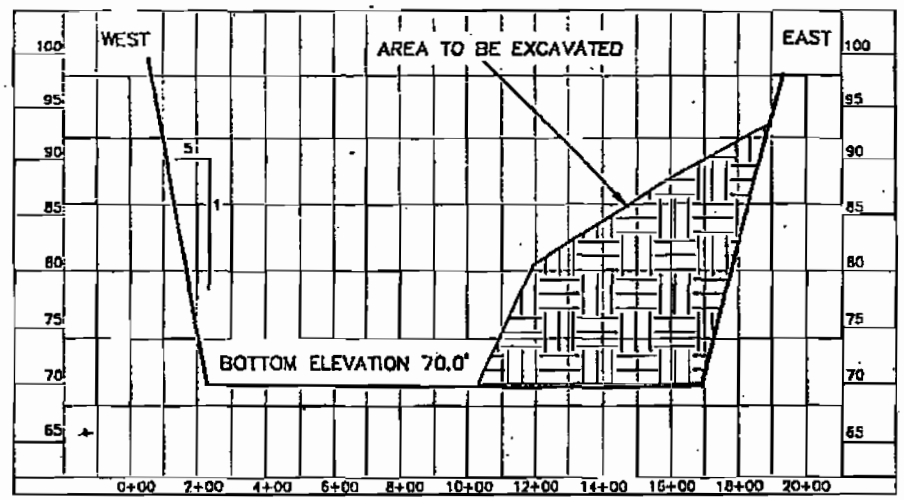


BUTTREY DEVELOPMENT TWO, L.L.C.	PERMITTED BORROW PIT CROSS SECTIONS – SJRWMD & ORANGE COUNTY	NAME: KEENE ROAD LANDFILL	ORANGE COUNTY	FIGURE 2
		SCALE: NTS	DATE: AUGUST 31, 2000	

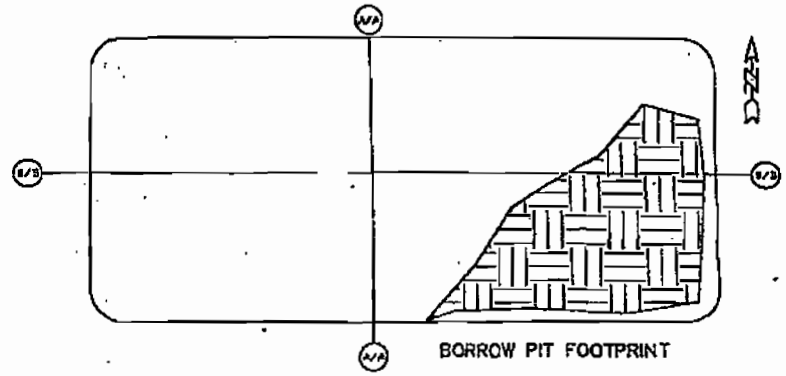
FIGURE 9



A/A — SECTION — A/A



B/B — SECTION — B/B



PLAN VIEW

NOTE: BORROW ACTIVITIES ARE NEARING COMPLETION AND ARE ESTIMATED AT 75% COMPLETE AS OF AUGUST 31, 2000

BUTTREY DEVELOPMENT TWO, L.L.C.	EXCAVATED AREAS – BORROW PIT CROSS SECTIONS – AUGUST 2000	NAME: KEENE ROAD LANDFILL	ORANGE COUNTY	FIGURE 3
		SCALE: NTS	DATE: AUGUST 31, 2000	

FIGURE 10

Attachment 9:

Potable Well Survey/Updated Groundwater Monitoring Plan

Well Inventory

Although the subject renewal application is for an existing facility with no proposed expansion, an updated well inventory within a 1,000-foot radius of the Vista Landfill, Class III Facility has been provided (see attached). Per Rule 62-701.300(2)(b) F.A.C., the 500-foot potable well setback prohibition does not apply to a renewal of this existing permit. The well location survey is based on research of publically-available information from the Florida Department of Health's EHWATER Program listing Superact wells, the Florida Department of Environmental Protection's (FDEP's) Water Supply Restoration Program, and St. Johns River Water Management District (SJRWMD) well permit database. Note: The homes along McQueen Road with wells are provided potable water by a water utility; therefore, to our knowledge, the wells are not used for potable purposes.

WELL_ID	RES_NAME	WELL_ADDR	WELL_CITY	LATITUDE	LONGITUDE	LAT_DD	LAT_MM	LAT_SS	LONG_DD	LONG_MM	LONG_SS	LOC_METH	SAMP_DATE	SAMPLE_ID	CHEMICAL	VALUE	RES_QUAL	UNITS	PROJECT_ID	FLORIDA_ID	X_COORD	Y_COORD
480058401	ANDERSON, WAYNE & LINDA	2323 MARDEN ROAD	APOPKA	28.64345	-81.52238	28	38	36.408	81	31	20.557	DGPS	8/28/1991	91082380	NITRATE (TOTAL AS N)	17	C	mg/L		AAI3475	641733.5258	517683.357
480254901	SUMMERLIN, LESLIE	2828 CLARCONA ROAD	APOPKA	28.63946	-81.50225	0	0	0	0	0	0	DGPS	7/12/2006	060713-034	NITRATE (TOTAL AS N)	11	C	mg/L	TOX-REQ	AAE3025	643706.2532	517279.9603
480369801	MOTT, MARY	1746 S WASHINGTON AVENUE	APOPKA	28.65126	-81.5159	28	39	4.536	81	30	57.246	DGPS	1/13/2009	081209-005	ARSENIC	0.0107	C	mg/L	TOX-HSET	AAI9626	642348.2026	518563.2382
480426701	PAGE, ANNETTE	2350 MARDEN ROAD	APOPKA	28.64257	-81.53047	0	0	0	0	0	0	DGPS	12/16/2008	081208-137	NITRATE (TOTAL AS N)	11	C	mg/L	TOX-HSET	AAM2346	640946.2729	517569.8154
480427901	ST MATHEWS HOLINESS CHURCH	2012 S CLARCONA ROAD	APOPKA	28.64718	-81.50535	28	1	47182	-8	1	505349	DGPS	5/4/2009	090409-076	TETRACHLOROETHYLENE	46	C	ug/L	SUPER	AAJ2206	643386.4836	518131.0053
480428301	REDD, ROBERT & ESTHER	1924 CLARCONA ROAD	APOPKA	28.64869	-81.50635	28	1	48692	-8	1	506346	DGPS	3/30/2010	100317-007	TETRACHLOROETHYLENE	10	C	ug/L	SUPER	AAJ1025	643285.5427	518296.6904

Source: Florida Department of Environmental Protection - Water Supply Restoration Program, February 2011

WELL_ID	ADDR_1	CITY	ZIP	COUNTY	WELL_TYPE	LONGITUDE	LATITUDE	LONG_DD	LONG_MM	LONG_SS	LAT_DD	LAT_MM	LAT_SS	LOC_METH	WELL_DEPTH	CASE_DEPTH	DIAMETER	FLORIDA_ID	PERMIT_NO	STATUS	METHOD	OCULUS	X_COORD	Y_COORD
480422801	1885 S WASHINGTON AVE	APOPKA		ORANGE	43	-81.51525	28.64994	0	0	0	0	0	0	DGPS	0	0	4	AAM1942			0	0	642414.5615	518417.9533
480425801	2026 S. CLARCONA RD	APOPKA		ORANGE	43	-81.50684	28.64745	0	0	0	0	0	0	DGPS	0	0	4	AAM1983			0	0	643240.5278	518158.0441
480425901	2022 S. CLARCONA RD	APOPKA		ORANGE	43	-81.50667	28.64721	0	0	0	0	0	0	DGPS	0	0	4	AAM1986			0	0	643257.6502	518131.7317
480426001	1956 CLARCONA RD	APOPKA		ORANGE	42	-81.50924	28.64774	0	0	0	0	0	0	DGPS	0	0	4	AAM2351			0	0	643005.7577	518185.5116
480426101	1946 CLARCONA RD	APOPKA		ORANGE	43	-81.50643	28.64762	0	0	0	0	0	0	DGPS	0	0	4	AAM2352			0	0	643280.1415	518177.7283
480426201	1908 S. CLARCONA RD	APOPKA		ORANGE	43	-81.50746	28.64912	0	0	0	0	0	0	DGPS	0	0	4	AAM2353			0	0	643176.2985	518342.2448
480426301	1852 CLARCONA RD	APOPKA		ORANGE	43	-81.50722	28.64955	0	0	0	0	0	0	DGPS	0	0	4	AAM2354			0	0	643198.7448	518390.4619
480426401	1848 CLARCONA RD	APOPKA		ORANGE	43	-81.50877	28.64973	0	0	0	0	0	0	DGPS	0	0	4	AAM2355			0	0	643047.1416	518407.3917
480426501	1814 CLARCONA RD	APOPKA		ORANGE	43	-81.50776	28.6506	0	0	0	0	0	0	DGPS	0	0	4	AAM2356			0	0	643143.7124	518505.9807
480426601	808 W. KEENE RD	APOPKA		ORANGE	43	-81.52684	28.63947	0	0	0	0	0	0	DGPS	0	0	4	AAM2345			0	0	641307.3002	517232.7126
480426701	2350 MARDEN ROAD	APOPKA		ORANGE	43	-81.53047	28.64257	0	0	0	0	0	0	DGPS	0	0	2	AAM2346		DECLINED CP.	5	0	640946.2729	517569.8154
480426801	2378 MARDEN RD	APOPKA		ORANGE	43	-81.52645	28.64174	0	0	0	0	0	0	DGPS	0	0	4	AAM2347			0	0	641340.2911	517485.5196
480426901	2300 CORAL HILLS RD	APOPKA		ORANGE	42	-81.50572	28.64227	0	0	0	0	0	0	DGPS	0	0	2	AAM2348			0	0	643361.4187	517585.1076
480427001	2046 CLARCONA RD	APOPKA		ORANGE	43	-81.50736	28.64751	0	0	0	0	0	0	DGPS	0	0	4	AAM2349			0	0	643189.6672	518163.6804
480427201	1977 S. WASHINGTON	APOPKA		ORANGE	43	-81.51409	28.64883	0	0	0	0	0	0	DGPS	0	0	4	AAM2343			0	0	642530.2017	518296.9885
480427901	2012 S CLARCONA ROAD	APOPKA		ORANGE	46	-81.50535	28.64718	-8	1	505349	28	1	47182	DGPS	0	0	4	AAJ2206		CONNECTION	2	0	643386.4836	518131.0053
480428201	2022 S HAWTHORNE AVE	APOPKA		ORANGE	43	-81.51841	28.64812	0	0	0	0	0	0	DGPS	0	0	4	AAJ1026			0	0	642110.3777	518209.6665
480428301	1924 CLARCONA ROAD	APOPKA		ORANGE	43	-81.50635	28.64869	-8	1	506346	28	1	48692	DGPS	0	0	4	AAJ1025		APOPKA	2	0	643285.5427	518296.6904
480429601	1903 S WASHINGTON	APOPKA		ORANGE	43	-81.51507	28.64952	-8	1	515065	28	1	49522	DGPS	0	0	2	AAM1982			0	0	642433.0599	518371.6737
480429701	1891 S WASHINGTON	APOPKA		ORANGE	43	-81.51476	28.65006	-8	1	514757	28	1	50061	DGPS	0	0	4	AAM1985			0	0	642462.0913	518432.2405
480009201	3917 INGRAM RD	APOPKA		ORANGE	43	-81.5293	28.61888	81	31	45.484	28	37	7.986	DGPS	0	0	0	AAD2554			0	0	641113.1202	514941.7379
480009601	980 W. MCCORMICK RD	APOPKA		ORANGE	43	-81.52353	28.61922	81	31	24.722	28	37	9.197	MMAP	0	0	0				0	0	641675.3748	514990.7841
480025902	P.O. BOX 1322	APOPKA		ORANGE	43	-81.5245	28.656	81	31	28.2	28	39	21.6	ZIP	0	0	0				0	0	641498.735	519072.6592
480038201	2300 S. CLAROONA RD.	APOPKA		ORANGE	43	-81.50625	28.64202	81	30	22.511	28	38	31.256	MMAP	0	0	0				0	0	643310.2763	517556.3037
480054101	2253 BOY SCOUT RD.	APOPKA		ORANGE	43	-81.53333	28.65111	81	32	0	28	39	4	AGPS	0	0	0	AAC9562			0	0	640648.2968	518512.4486
480058401	2323 MARDEN ROAD	APOPKA		ORANGE	43	-81.52238	28.64345	81	31	20.557	28	38	36.408	DGPS	0	0	0	AAI3475		Reimbursed	2	0	641733.5258	517683.357
480058402	2323 MARDEN ROAD	APOPKA		ORANGE	43	-81.52771	28.63629	81	31	39.772	28	38	10.65	MMAP	0	0	0				0	0	641229.5051	516877.9268
480066701	770 LAKE ANDREA CIR. LOT	ZELLWOOD		ORANGE	43	-81.50116	28.64722	81	30	4.19	28	38	50.007	MMAP	0	0	0				0	0	643795.1283	518143.7234
480129801	1521 W. MCCORMIC RD.	APOPKA		ORANGE		-81.53247	28.62444	81	31	56.88	28	37	28.001	MMAP	0	0	4				0	0	640791.4497	515552.8863
480129901	1301 MCCORMIC RD.	APOPKA		ORANGE		-81.53032	28.624	81	31	49.138	28	37	26.407	MMAP	0	0	2				0	0	641002.2058	515508.2319
480204201	3905 INGRAM RD.	APOPKA		ORANGE		-81.52892	28.61939	81	31	44.1	28	37	9.8	AGPS	0	0	4	AAD2553		A	0	0	641149.0642	514999.1077
480222501	255 W. KEENE RD	APOPKA		ORANGE		-81.51628	28.64028	81	30	58.6	28	38	25	AGPS	0	0	4	AAD6066		A	0	0	642335.6933	517343.3572
480237401	1417 W. KEENE RD	APOPKA		ORANGE		-81.53269	28.64108	81	31	57.7	28	38	27.9	AGPS	0	0	4	AAD0128		A	0	0	640733.0122	517400.0411
480244101	150 W KEENE RD	APOPKA		ORANGE	43	-81.50639	28.63889	-8	1	506579	28	1	38777	AGPS	0	0	4	AAE2903		A	0	0	643303.6472	517208.4968
480244201	138 W KEENE RD	APOPKA		ORANGE	43	-81.50667	28.63861	-8	1	508381	28	1	38963	AGPS	0	0	4	AAE2904		A	0	0	643276.9597	517176.8554
480244301	518 1ST STREET	OCOEE		ORANGE		-81.50806	28.63861	81	30	29	28	38	19	AGPS	0	0	4	AAE2905		A	0	0	643141.3544	517174.1139
480248801	851 W. KEENE RD	APOPKA		ORANGE		-81.52694	28.64083	81	31	37	28	38	27	AGPS	0	0	0	AAE2966		A	0	0	641294.5157	517383.5211
480254901	2828 CLARCONA ROAD	APOPKA		ORANGE	43	-81.50225	28.63946	0	0	0	0	0	0	DGPS	0	0	2	AAE3025		RESAMPLE	5	0	643706.2532	517279.9603
480255001	2850 CLARCONA RD	APOPKA		ORANGE	43	-81.50236	28.63931	0	0	0	0	0	0	DGPS	0	0	4	AAE3026		A	0	0	643695.8593	517263.0881
480269101	2508 MCQUEEN RD	APOPKA		ORANGE		-81.51778	28.63972	81	31	4	28	38	23	AGPS	0	0	4	AAE5070		A	0	0	642190.6103	517278.2321
480269201	309 KEENE RD	APOPKA		ORANGE		-81.51778	28.64	81	31	4	28	38	24	AGPS	0	0	4	AAE5071		A	0	0	642189.9844	517309.3212
480269301	2521 MCQUEEN RD	APOPKA		ORANGE		-81.51694	28.63972	81	31	1	28	38	23	AGPS	0	0	4	AAE5072	16769	A	0	0	642272.5582	517279.8822
480269401	808 KEENE RD	APOPKA		ORANGE		-81.52694	28.63944	81	31	37	28	38	22	AGPS	0	0	4	AAE5073		A	0	0	641297.6113	517229.1859
480275701	148 W 19TH ST	APOPKA		ORANGE		-81.51528	28.65611	81	30	55	28	39	22	AGPS	0	0	4	AAE5129		A	0	0	642397.8294	519102.9628
480275801	1472 LAKE AV.	APOPKA		ORANGE		-81.51583	28.65694	81	30	57	28	39	25	AGPS	0	0	4	AAE5128		A	0	0	642342.3245	519194.0385
480277501	2542 MCQUEEN RD	APOPKA		ORANGE	43	-81.51764	28.63939	81	31	3.492	28	38	21.804	DGPS	0	0	4	AAE5156		A	0	0	642205.006	517241.8664
480277601	2550 MCQUEEN RD	APOPKA		ORANGE	43	-81.51781	28.63899	81	31	4.123	28	38	20.378	DGPS	0	0	4	AAE5157		A	0	0	642189.3154	517197.1196
480278401	1901 S WASHINGTON AV	APOPKA		ORANGE		-81.51472	28.64944	81	30	53	28	38	58	AGPS	0	0	4	AAE5165		A	0	0	642467.3808	518363.4792
480286301	547 E KEENE RD	APOPKA		ORANGE	43	-81.49944	28.64056	81	29	58	28	38	26	AGPS	0	0	4	AAF5848		A	0	0	643977.9112	517407.652
480297201	918 W. KEENE RD	APOPKA		ORANGE	43	-81.52806	28.63917	81	31	41	28	38	21	AGPS	0	0	4	AAG2862		A	0	0	641188.948	517197.016
480303101	406 E KEENE RD	APOPKA		ORANGE	43	-81.50306	28.64	81	30	11	28	38	24	AGPS	0	0	4	AAG2924		A	0	0	643626.0178	517338.317
480307401	2378 MARDEN ROAD	APOPKA		ORANGE	43	-81.52667	28.64222	81	31	36	28	38	32	AGPS	0	0	4	AAG2970		A	0	0	641317.7599	517538.3847
480310601	1705 BLACKWOOD AVENUE	GOTHA		ORANGE	43	-81.52889	28.62667	81	31	44	28	37	36	AGPS	0	0	4	AAG3002	813174	A	0	0	641135.7913	515807.4848
480311301	340 KEENE RNUED	APOPKA		ORANGE	43	-81.51889	28.63944	81	31	8	28	38	22	AGPS	0	0	2	AAG3009	813113	A	0	0	642082.9477	517244.9635
480312701	3334 MCQUEEN RD	APOPKA		ORANGE	43	-81.51778	28.63389	81	31	4	28	38	2	AGPS	0	0	2	AAG3023		A	0	0	642203.6421	516630.9133
480312801	2832 MCQUEEN RD	APOPKA		ORANGE	43	-81.51806	28.63528	81	31	5	28	38	7	AGPS	0	0	4	AAG3024		A	0	0	642173.218	516784.6984
480312901	2814 MCQUEEN RD	APOPKA		ORANGE	43	-81.51806	28.63556	81	31	5	28	38	8	AGPS	0	0	4	AAG3025		A	0	0	642172.5921	516815.7875
480313001	2904 MCQUEEN RD	APOPKA		ORANGE	43	-81.51778	28.63472	81	31	4	28	38	5	AGPS	0	0	4	AAG3026		A	0	0	642201.7868	516723.0702
480313501	2736 MC QUEEN RD	APOPKA		ORANGE	43	-81.51861	28.63667	81	31	7	28	38	12	AGPS	0	0	4	AAG3033		A	0	0	642116.4534	516937.9535
480313601	2730 MC QUEEN ROAD	APOPKA		ORANGE	43	-81.51917	28.63667	81	31	9	28	38	12	AGPS	0	0	4	AAG3034		CONNECTED BY	2	0	642061.8199	516936.8541
480313701	2928 MC QUEEN RD	APOPKA		ORANGE	43	-81.51806	28.63333	81	31	5	28	38	0	AGPS	0	0	4	AAG3032		A	0	0	642177.5763	516568.1852
480313801	2724 MC QUEEN RD	APOPKA		ORANGE	43	-81.51806	28.63639	81	31	5	28	38	11	AGPS	0	0	2	AAG3035		A	0	0	642170.7371	516907.9444
480325801	1449 KEENE RD	APOPKA		ORANGE	43	-81.53306	28.64111	81	31	59	28	38	28	AGPS	0	0	4	AAG5367		A	0	0	640696.8498	517402.6498
480327801	422 E KEENE RD	APOPKA		ORANGE	43	-81.50139	28.62083	81	30	5	28	37	15	AGPS	0	0	4	AAG5388		A	0	0	643832.0707	515213.1307
480337901	2688 MCQUEEN RD	APOPKA		ORANGE	43	-81.51806	28.6375	81	31	5	28	38	15	AGPS	0	0	0	AAH2902		A	0	0	642168.2562	517031.1904
480347801	1912 S WASHINGTON AV	APOPKA		ORANGE	43	-81.51639	28.64944	81	30	59	28	38	58	AGPS	0	0	4	AAH3010		A	0	0	642304.4753	518360.1967
480347901	1923 S WASHINGTON AVE	APOPKA		ORANGE	43	-81.51523	28.64843	81	30	54.81	28	38	54.36	DGPS	0	0	3	AAH3009		A	0	0	642419.8912	518250.334
480348001	2588 MARDEN RD	APOPKA		ORANGE	43	-81.52639	28.63889	81	31	35	28	38	20	AGPS	0	0	4	AAH3008		A	0	0	641352.493	517169.1944
480348101	2588 A MARDEN RD	APOPKA		ORANGE	43	-81.52639	28.63861	81	31	35	28	38	19	AGPS	0	0	4	AAH3007		A	0	0	641353.1167	517138.1053
480348201	2209 CLARCONA RD	APOPKA		ORANGE	43	-81.50278	28.64444	81	30	10	28	38	40	AGPS	0	0	4	AAH3001		A	0	0	643643.349	517831.8526
480349401	1620 S OLD APOPKA RD	APOPKA	32703	ORANGE	43	-81.50639	28.65389	81	30	23	28	39	14	AGPS	0	0	4	AAH8789		A	0	0	643269.9639	518873.978
480349501	1838 CLARCONA RD	APOPKA	32703	ORANGE	43	-81.50903	28.65068	0	0	0	0	0	0	DGPS	0	0	4	AAJ6861		A	0	0	643019.6482	518512.3598
480359101	8023 STONE RD	APOPKA		ORANGE	43	-81.49449	28.63211	81	29	40.178	28	37	55.594	DGPS	0	0	3	AAH8703			0	0	644479.8783	516479.235
480364901	17566 DAVENPORT RD	WT. GARDEN		ORANGE	43	-81.50118	28.65098	81	30	4.26	28	39	3.546	DGPS	0	0	0	AAC9413			0	0	643784.7164	518561.164
480369501	2005 S WASHINGTON AVE	APOPKA		ORANGE	43	-81.51488	28.64777	81	30	53.568	28	38	51.972	DGPS	0	0	0	AAI9629			0	0	642455.5104	518177.7408
480369601	1915 S WASHINGTON AVE	ORLANDO		ORANGE	43	-81.51516	28.64883	-8	1	515117	28	1	48797	DGPS	0	0	4	AAI9628			0	0	642425.8246	518294.8845
480369701	1900 S WASHINGTON	APOPKA		ORANGE	43	-81.51641	28.64993	-8	1	516339	28	1	49930	DGPS	0	0	4	AAI9627			0	0	642301.4285	518414.5632
480369801	1746 S WASHINGTON	APOPKA		ORANGE	42	-81.5159	28.65126	81	30	57.246	28	39	4.536	DGPS	0	0	0	AAI9626		11/2/2009	5	0	642348.2026	518563.2382
480400101	3250 CLARCONA RD	APOPKA		ORANGE	42	-81.50071	28.63646	0	0	0	0	0	0	DGPS	0	0	4	AAM2138			0	0	643863.2429	516949.9085
480412701	3000 CLARCONA RD	APOPKA		ORANGE	40	-81.50467	28.63651	0	0	0	0	0	0	DGPS	0	0	6	AAH6108		COMMUNITY	4	0	643476.7942	516947.6351
480414201	550 E KENNE RD	APOPKA		ORANGE	42	-81.49783	28.63993	0	0	0	0	0	0	DGPS	0	0	0	AAH6110			0	0	644136.3958	517340.8883
480433901	1934 OLD APOPKA RD.	APOPKA		ORANGE	43	-81.50497	28.64825	-8	1	504968	28	1	48252	DGPS	0	0	4	AAM1977			0	0	643421.1486	518250.5597

Source: Florida Department of Environmental Protection - Water Supply Restoration Program, February 2011

FEBRUARY 2011

AERIAL SOURCE: ORANGE COUNTY PROPERTY APPRAISER'S OFFICE, 2010.

LEGEND

AAG3026
AAH6108
AAE5071
AAD6066 — SOURCE: FLORIDA DEPARTMENT OF HEALTH SUPERAct WELLS FROM EHWATER PROGRAM, FEBRUARY 2011

480269301 — SOURCE: DEPARTMENT OF ENVIRONMENTAL PROTECTION WATER SUPPLY RESTORATION PROGRAM, FEBRUARY 2011

3412 — SOURCE: SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT, FEBRUARY 2011

N

0 100 200
DISTANCE IN FEET

FIGURE	PROJECT NO.								
1	09-574.020	POTABLE WELL SURVEY VISTA LANDFILL, CLASS III FACILITY APOPKA, FLORIDA	DATE	REVISIONS	REVISED	CHECKED		BY	DATE
							DESIGNED	JG	8/2010
							DRAWN	TBS	8/2010
							CHECKED	DL	8/2010
							FILE: 09-574.020-AERIA-POTL.dwg		

DATE _____

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Updated Water Quality Monitoring Plan

Vista Landfill, Class III Facility
Apopka, Florida

Prepared for:

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February 2011

2/07/11

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ATTACHMENTS

Attachment A 40 CFR Part 258, Appendices I and II

1.0 Introduction

1.1 Purpose and Scope

The purpose of this Water Quality Monitoring Plan (WQMP) is to describe the: (i) ground water monitoring program; (ii) leachate monitoring program; (iii) sampling and analytical methodologies; and (iv) reporting procedures for the Vista Landfill, Class III Facility (Vista Landfill) located in Apopka, Florida. It is noted that there is no off-site surface water discharge and therefore no surface water monitoring required for the site. The WQMP addresses the requirements of Rule 62-701.510 of the Florida Administrative Code (F.A.C). This document is based on the Geosyntec Consultants' September 2007 and Waste Management's June 2010 modfications.

1.2 Facility Location

The Vista Landfill facility is at 242 West Keene Road in Apopka, Florida. The general site location is shown in Figure 1. The site is within Section 28, Township 21 South, Range 28 East in Orange County, Florida. The main entrance of the facility is located at latitude 28°38'24.5"N, longitude 81 °30'41.7"W on West Keene Road.

1.3 Plan Organization

The remainder of this Water Quality Monitoring Plan is organized as follows:

- Section 2 presents the ground water program, to include a description of well locations, sampling protocols, sample collection, decontamination procedures, sample handling procedures, chain-of-custody procedures, and analytical procedures;
- Section 3 provides a description of the leachate monitoring program; and
- Section 4 describes the water quality monitoring reporting procedures.

2.0 Ground Water Monitoring

2.1 Monitoring Wells

2.1.1 Well Locations

In accordance with the previously-approved Monitoring Plan Implementation Schedule (MPIS) and solid waste permit for the site, the 18 monitoring wells for the Phase I development (i.e., Cells I through 4) have been installed (see Table 1), initial sampling has been completed for these wells, and that data has been submitted to the Florida Department of Environmental Protection. Five (5) wells were replaced (or relocated) but are only required to be sampled for the parameters in Rule 62-701-510(8)(b), F.A.C, since the initial sampling has been performed on the original wells. The proposed monitoring wells for each subsequent phase of landfill

development will be installed and sampled for the parameters in Rule 62-701-510(8)(b), F.A.C prior to disposal of any Class III waste in future cells. The locations of the existing and proposed monitoring wells associated with the lined disposal facility are shown on Figure 2, and the proposed phasing is presented in Table 1. With the exception of the five replacement wells, the monitoring well locations and phasing have not changed from the approved solid waste permit.

2.1.2 Monitoring Well Classification

The approved MPIS for the site classified each existing monitoring well as either a background or compliance well, and all future monitoring wells were denoted as compliance wells. This section of the WQMP proposes to re-designate some wells as either detection wells or background well, based on groundwater flow directions and locations. The discussion below provides the rationale for well re-classification.

Per Rule 62-701.510(3)(a), F.A.C, detection wells must be installed downgradient of the solid waste disposal unit. A potentiometric surface map generated from site-specific surficial aquifer data is provided in Figure 2. As indicated in Figure 2, ground water flow in the surficial aquifer generally follows with topography. As for ground water flow in the Upper Floridan Aquifer System (FAS), several United States Geological Survey (USGS) Upper FAS potentiometric maps indicate flow to be northeast in the vicinity of the Vista Landfill. This is consistent with northeast groundwater flow in the deeper Floridan wells at the adjacent Keene Road Landfill. A summary of the proposed monitoring well reclassifications is presented in Table 1, which includes the original monitoring well classifications as designated in the approved MPIS. Table 1 also indicates which monitoring wells will be installed during each subsequent phase of landfill development.

When assigning the classification of the wells, Geosyntec was consistent with the locations presented in the approved MPIS, which were based on the hydrogeologic investigation and on site-specific conditions in accordance with Rule 62-701.510(2) and (3), F.A.C. Four wells located 50 feet from the landfill, within the zone of discharge, are re-designated as "Detection" wells. Additionally, an effort has been made to show the configuration of the shallow ground water flow regime in Figure 2. Three wells located on topographic highs and hydrogeologically upgradient of the landfill are re-designated as "Background" wells. Another well was noted to be in a downgradient location and was re-designated as a "Compliance" well. All other wells are shown in their approved locations and with their current designations as compliance or background wells.

2.1.3 Future Well Construction

As noted above, the monitoring well network for Phase 1 development (i.e., Cells 1 through 4) has already been installed at the Vista Landfill facility. Additional ground water monitoring wells required for subsequent landfill development phases or future assessment of ground water quality will be installed using FDEP approved methods allowed under Chapter 62-701, F.A.C such as hollow stem auger drilling methods under the direction of a qualified geologist. Additional monitoring wells will be installed so that the well screens (10 feet in length) are located to readily detect representative ground water conditions within the saturated thickness of

the uppermost aquifer. Additionally, every attempt will be made to set the monitoring well screen so that the water table can be sampled at all times. Screens in the shallow well may be set 3 to 5 feet below the seasonal high water table to minimize potential changes in water quality due to air-water interactions while still allowing for collection of a sample representative of the uppermost water table.

A soil boring log will be prepared by the geologist or engineer by visually inspecting drill cuttings directly from the auger flights or samples from a standard penetration test, if used. After advancing the boring to the appropriate depth, the monitoring well will be constructed in accordance with typical details indicated in Figure 3. A probable screen size and sand pack gradation has been shown on Figure 3. Prior to installation, the design for the screen and sand pack will be checked based on soil samples in the vicinity of the new well or from the actual well cuttings. The well construction shown in Figure 3, including slot and sand pack size have been used successfully for installing existing wells at Vista Landfill and at the nearby Keene Road Landfill. Accordingly, this same configuration will be used for future wells, unless site specific or well specific conditions warrant otherwise.

The location of each well, in degrees, minutes and seconds of latitude and longitude, and the elevation of the top of the well casing to the nearest 0.01 foot, National Geodetic Vertical Datum 1929 (NGVD 1929) or other datum consistent with the site and with Chapter 62-701, F.A.C, will be determined by a registered land surveyor in the State of Florida. In all cases, the monitoring wells will be installed at locations specified in the approved MPIS.

2.1.4 Well Development

All new ground water monitoring wells will be developed to ensure that representative ground water samples are obtained. Wells will be developed by initially swabbing or surge-blocking to agitate the water column followed by pumping to remove particulate matter in suspension. Wells will then be pumped until a minimum of five well volumes of water have been removed, where a well volume is defined as the volume of water in the well casing and sand filter pack. This process will continue until the suspended matter and turbidity levels have been reduced to levels acceptable for ground water sampling (nominally below 20 Nephelometric Turbidity Units [NTU]).

2.1.5 Well Abandonment

When necessary for disposal facility expansion and/or upon approval by Florida Department of Environmental Protection (FDEP), existing monitoring wells will be abandoned. The abandonment will be performed under the direction of an experienced geologist or engineer. This abandonment procedure will include: (i) removing the existing protective casing and concrete pad; (ii) cutting off the existing well or piezometer casing below the ground surface; (iii) backfilling the full length of the well or piezometer casing with cement grout; and (iv) backfilling with soil in the vicinity for drainage away from the well or piezometer. In some cases, overdrilling methods may be implemented to abandon the wells (e.g., where the wells could act as a potential conduit to groundwater within the footprint of a future cell). FDEP will be notified in writing before any monitoring wells are abandoned or plugged. FDEP will also be

provided with copies of the well abandonment documentation, including copies of the well abandonment permit. Monitoring well abandonment will be performed in accordance with procedures outlined in Rule 62-532.500(4), F.A.C.

2.2 Sampling Frequency and Description

Ground water monitoring wells will be sampled in accordance with this Water Quality Monitoring Plan and any specific conditions in the site specific MPIS. The ground water monitoring program will include sampling and analysis of ground water samples for field and laboratory parameters described in Rule 62-701.510(6), F.A.C. In accordance with Rule 62-701.510(6)(b), F.A.C, all background and detection wells shall initially be sampled and analyzed for those parameters listed in Rule 62-701.510(8)(a) and (d), F.A.C as indicated in Table 2. However, any replacement wells will initially be sampled and analyzed only for those parameters listed in Rule 62-701.5l0(8)(a), F.A.C.

In accordance with Rule 62-701.510(6)(d), F.A.C, routine ground water samples will be collected semiannually from the detection (downgradient) and background (upgradient) wells, and analyzed for the ground water indicator parameters listed in Rule 62701.5l0(8)(a), F.A.C and presented in Table 3.

2.3 Ground Water Sample Collection

Ground water sampling will be completed in accordance with standard procedures for the field measurement and sampling activities, as mandated by Chapter 62-160, F.A.C. The FDEP will be notified at least fourteen days before any sampling will occur so that they may collect split samples. All ground water sampling will be performed in accordance with applicable sections of FDEP-Standard Operating Procedure-001/0l, FS 2200 (FS 2200 [Revised March 2008]) as mandated by Rule 62-160.210(1), F.A.C.

Each monitoring well will be purged prior to sampling in order to remove stagnant water, stratified fluids, or residual drilling contaminants in, or near, the filter zone. Procedures in FS 2200 for well purging prior to sampling will be followed.

Procedures outlined in FS 2200 for obtaining samples from the groundwater monitoring wells will be followed during sampling of the monitoring wells at the Vista Landfill facility.

In general, groundwater samples are collected from the pump discharge and do not contact field instruments (only the tip of water level indicators will contact groundwater within the well). Field instruments will be decontaminated and cleaned according to the procedures outlined in FS 2200.

2.4 Measurement of Ground water Elevations

The elevation of the ground water surface at each monitoring well will be measured prior to each purging and sampling event. All monitoring wells will be measured for water level on the same day. Procedures specified in FS 2200 for monitoring of ground water elevations will be followed.

2.5 Sample Containers, Preservation, and Shipping

2.5.1 Sample Containers and Preservation Procedures

The containers and procedures used for the preservation of ground water samples will be selected to satisfy the following two important requirements:

- Samples will be prepared in such a way that accurate and valid analyses may be performed; and
- All sample preservation methods will adequately meet the requirements of chain-of custody and sample security.

The types of containers, cleaning procedures, sample sealing procedures, and preservation procedures used during ground water sampling will be in accordance with FS 2200.

2.5.2 Packaging and Shipping

Sample packaging involves preparation of the sample container for shipment to the laboratory for analysis. The procedures and material used must adequately protect the sample container from accidental breakage and should be sufficient to prevent any spillage from escaping into the environment. Sample storage, packaging, and shipping procedures will be followed as outlined in FS 2200.

2.6 Chain-or-Custody Control Procedures

Appropriate chain-of-custody procedures will be followed during the transfer of ground water samples, as specified in FS 2200.

2.7 Sample Analysis

All ground water samples from the Vista Landfill monitoring wells will be submitted to an FDEP-approved analytical laboratory. The laboratory will possess the certifications required in accordance with Chapter 62-160, F.A.C and hold a certificate from the Department of Health Environmental Laboratory Certification Program under Chapter 62E-I, as referenced in Rule 62-160.300(1), F.A.C. All analytical procedures specified in FS 2200 will be followed during the analysis of groundwater samples.

2.8 Evaluation Monitoring

If indicator parameters are detected in detection wells at concentrations significantly above background concentrations, or at concentrations above the FDEP water quality standards or criteria specified in Chapter 62-520, F.A.C, the respective wells may be resampled within 30 days of receipt of data to confirm the laboratory results. Upon receipt of the confirmation resampling results, or if the wells are not resampled, FDEP will be notified within 14 days and evaluation monitoring will be initiated upon notification by the Department in accordance with Chapter 62-701.510(7), F.A.C.

The evaluation monitoring will include: (i) continuation of routine sampling and analyses for all monitoring wells and surface water monitoring locations; (ii) within 90 days of initiating evaluation monitoring and annually thereafter, sampling and analysis of representative background wells and all affected detection wells or chemical constituents listed in Appendix II of 40 Code of Federal Regulations (CFR) Part 258 (see Attachment A); (iii) inclusion of new parameters confirmed in affected downgradient wells into routine monitoring; (iv) within 90 days of initiating evaluation monitoring, installation of compliance monitoring wells located at the compliance line of the zone of discharge (indicated on Figure 2), downgradient of the affected detection wells and sampling and analysis on a quarterly basis for the parameters listed in Rules 62-701.5l0(8)(a) and (d), F.A.C; and (v) within 180 days of initiating evaluation monitoring, submittal of a contamination evaluation plan, in accordance with Rule 62-701.51 O(7)(a)4, F.A.C, to FDEP. The contamination evaluation plan will be implemented upon FDEP approval of the plan.

Actions to be taken subsequently will depend on the results obtained from evaluation monitoring activities. Authorization from FDEP will be obtained prior to returning to routine monitoring. In accordance with Rule 62-701.510(7)(b)1, F.A.C, if the contamination evaluation report indicates that water quality standards are likely to be violated outside the zone of discharge, a remedial action plan will be submitted to the FDEP for review within 90 days. The remedial action plan will be implemented upon approval of the plan by FDEP.

Updates to Chapter 62-701.510, F.A.C which include changes to the Evaluation and Corrective Action requirements are incorporated by reference.

3.0 Leachate Monitoring

3.1 Monitoring Locations

A representative sample of leachate from the Vista Landfill will be collected and analyzed on an annual basis in accordance with Rule 62-701.510(6)(c), F.A.C. A representative leachate sample will be a grab sample obtained from either the leachate collection sumps, the leachate force main, or the leachate storage tanks. One leachate sample will be collected from all phases of the disposal facility.

3.2 Sampling Protocol

A representative leachate sample will be collected on an annual basis and analyzed as required by Rule 62-701.510(6)(c), F.A.C. The testing parameters which are listed in Rule 62-701.510(8)(c) and (d) are presented in Table 4 and Attachment A of this plan..

Leachate concentrations found during annual sample analysis will be evaluated for constituents in excess of the toxicity characteristic regulatory levels for hazardous waste, as described in 40 CFR 261.24. A list of these contaminants and the associated regulatory levels are presented in Attachment B. If such excesses are apparent, then a monthly sampling and analysis program will be initiated in accordance with Rule 62-701.510(6)(c)2 and the FDEP will be notified in writing. If in any three consecutive months no listed contaminant is found to exceed the regulatory level, the monthly sampling and analysis program will be discontinued and annual monitoring will be resumed.

3.3 Sample Collection

Leachate sampling will be performed in accordance with the procedures in FDEP Standard Operating Procedure-00l/01, FS 1000, General Sampling Procedures (FS 1000) for the purpose of sampling activities, as mandated by Rule 62-160.210(1), F.A.C. The FDEP will be notified at least fourteen days before any sampling event will occur so that they may collect split samples.

3.4 Sample Containers and Preservation

The types of containers, cleaning procedures, and preservation procedures to be used for leachate sampling will be in accordance with requirements of FS 1000.

3.5 Packaging and Shipping

Leachate sample storage, packaging, and shipping procedures will follow procedures presented in FS 1000 in order to protect the sample container from accidental breakage or spillage during shipment.

3.6 Chain-or-Custody Control Procedures

Chain-of-custody procedures for the transfer of leachate samples will follow procedures specified in FS 1000.

3.7 Leachate Sample Analysis

Leachate samples from the disposal facility will be submitted to an analytical laboratory that holds a certificate from the Department of Health Environmental Laboratory Certification Program under Chapter 62E-I, as referenced in Rule 62-160.300(1), F.A.C. As mentioned

previously, leachate samples will be analyzed annually for the parameters listed in Table 4 and in Attachment A.

4.0 Water Quality Monitoring Reporting

4.1 Ground Water and Leachate

4.1.1 Overview

Water quality monitoring reporting will be performed in accordance with Rule 62-701.510(9), F.A.C. Water quality monitoring reports will be submitted to FDEP and the City of Apopka after each sampling event in accordance with the MPIS.

4.1.2 Monitoring Report Contents

The monitoring report to the FDEP will contain the following information:

- Facility name;
- Facility identification number;
- Sample collection date;
- Analysis date;
- All analytical results, including all peaks even if below maximum contamination levels;
- Identification number and designation of all ground water monitoring points;
- Applicable water quality standards;
- Quality assurance/quality control notations;
- Method detection limits;
- Water levels recorded prior to evaluating wells or sample collection;
- An updated ground water surface contour map (signed and sealed by a professional geologist or professional engineer with experience in hydrogeologic investigations) with contours at a minimum of one foot (0.3 m) intervals that indicates ground water elevation, unless site specific conditions dictate otherwise and flow direction;
- A summary of water quality standards or criteria that are exceeded; and
- A summary of leachate monitoring parameters, analytical results and evaluation of any constituents exceeding the regulatory levels in 40 CFR Part 261.24.

Surface water monitoring is not required and will not be included in the reports.

4.1.3 Technical Report Contents

Every 2.5 years or other frequency allowed by Rule 62-701.510, F.A.C, a technical report, prepared, signed, and sealed by a professional geologist or professional engineer with experience in hydrogeologic investigations, will be submitted to the FDEP and the City of Apopka. The report will be updated at the time of permit renewal. The report will summarize and interpret the

water quality data and leachate monitoring results and water level measurements collected during the past two years. The report will contain:

- Tabular displays of any data which shows that a monitoring parameter has been detected, and graphical displays of any leachate key indicator parameters detected (such as pH, specific conductance, TDS, TOC, sulfate, chloride, sodium, and iron), including hydrographs for all monitor wells;
- Trend analyses of any monitoring parameters consistently detected;
- Comparisons among shallow, middle, and deep zone wells, as applicable;
- Comparisons between background water quality and the water quality in detection and compliance wells;
- Correlations between related parameters such as total dissolved solids and specific conductance;
- Discussion of erratic and/or poorly correlated data;
- An interpretation of the ground water contour maps and an evaluation of ground water flow rates; and
- An evaluation of the adequacy of the water quality monitoring frequency and sampling locations.

All field and laboratory records will be made available to the FDEP and will be retained throughout the post-closure care period for the disposal facility.

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Tables

Table 1. Monitoring Well Designation and Classification for the Vista Landfill

Monitoring Well Designation	Existing Classification	Proposed Classification	Installation Schedule [1]
MW-1A	Background	Background	Phase 1
MW-1B	Background	Background	Phase 1
MW-2AR	Background	Background	Phase 1
MW-2B	Background	Background	Phase 1
MW-3A	Compliance	Compliance	Phase 1
MW-3B	Compliance	Compliance	Phase 1
MW-4A	Compliance	Compliance	Phase 1
MW-4B	Compliance	Compliance	Phase 1
MW-5A	Compliance	Compliance	Phase 1
MW-5B	Compliance	Compliance	Phase 1
MW-6AR	Background	Background	Phase 1
MW-6BR	Background	Background	Phase 1
MW-7A	Compliance	Background	Phase 1
MW-7B	Compliance	Compliance	Phase 1
MW-8R	Background	Background	Phase 1
MW-9A	Compliance	Compliance	Phase 2
MW-9B	Compliance	Compliance	Phase 2
MW-10A	Compliance	Detection	Phase 3
MW-10B	Compliance	Detection	Phase 3
MW-11A	Compliance	Detection	Phase 2
MW-11B	Compliance	Detection	Phase 2
MW-12A	Compliance	Compliance	Phase 3
MW-12B	Compliance	Compliance	Phase 3
MW-13A	Compliance	Compliance	Phase 3
MW-13B	Compliance	Compliance	Phase 3
MW-14A	Compliance	Compliance	Phase 2
MW-14B	Compliance	Compliance	Phase 2
MW-15A	Compliance	Compliance	Phase 2
MW-15B	Compliance	Compliance	Phase 2
MW-16A	Compliance	Compliance	Phase 3
MW-16B	Compliance	Compliance	Phase 3
MW-17A	Compliance	Background	Phase 3
MW-17B	Compliance	Background	Phase 3
MW-18A	Compliance	Compliance	Phase 3
MW-18B	Compliance	Compliance	Phase 3
MW-19A	Compliance	Compliance	Phase 3
MW-19B	Compliance	Compliance	Phase 3
MW-20A	Compliance	Compliance	Phase 3
MW-20B	Compliance	Compliance	Phase 3
MW-21A	Compliance	Compliance	Phase 3
MW-21B	Compliance	Compliance	Phase 3
W-FL1	Compliance	Compliance	Phase 1
MW-FL2R	Compliance	Compliance	Phase 1
MW-FL3	Compliance	Compliance	Phase 1
MW-FL4	Background	Background	Phase 3
MW-FL5	Background	Background	Phase 2
MW-FL6	Background	Background	Phase 2
MW-FL7	Background	Background	Phase 3
MW-FL8	Background	Compliance	Phase 3
MW-FL9	Background	Background	Phase 3

[1] Phase 1 includes Cells 1 through 4; Phase 2 includes Cells 5 though 8; and Phase 3 includes Cells 9 through 12.

Table 2. Initial Groundwater Monitoring Parameters

Field Parameters	Laboratory Parameters
Static water levels before purging	Total Ammonia-N
Specific Conductivity	Chlorides
pH	Iron
Dissolved Oxygen	Mercury
Turbidity	Nitrate
Temperature	Sodium
Colors and Sheens (by observation)	Total Dissolved Solids (TDS)
	Those parameters listed in 40 CFR Part 258, Appendices I and II.

Note: The parameters presented in 40 CFR Part 258, Appendices I and II are reproduced in Attachment A of this Water Quality Monitoring Plan.

Table 3. Routine Semiannual Groundwater Monitoring Parameters

Field Parameters	Laboratory Parameters
Static water levels before purging	Total Ammonia-N
Specific Conductivity	Chlorides
pH	Iron
Dissolved Oxygen	Mercury
Turbidity	Nitrate
Temperature	Sodium
Colors and Sheens (by observation)	Total Dissolved Solids (TDS)
	Those parameters listed in 40 CFR Part 258, Appendix I.

Note: The parameters presented in 40 CFR Part 258, Appendix I is reproduced in Attachment A of this Water Quality Monitoring Plan.

Table 4. Annual Leachate Monitoring Parameters

Field Parameters	Laboratory Parameters
Specific Conductivity	Total Ammonia-N
pH	Bicarbonate
Dissolved Oxygen	Chlorides
Colors and Sheens (by observation)	Iron
	Mercury
	Nitrate
	Sodium
	Total Dissolved Solids (TDS)
	Those parameters listed in 40 CFR Part 258, Appendix II.

Note: The parameters presented in 40 CFR Part 258, Appendix II is reproduced in Attachment A of this Water Quality Monitoring Plan.

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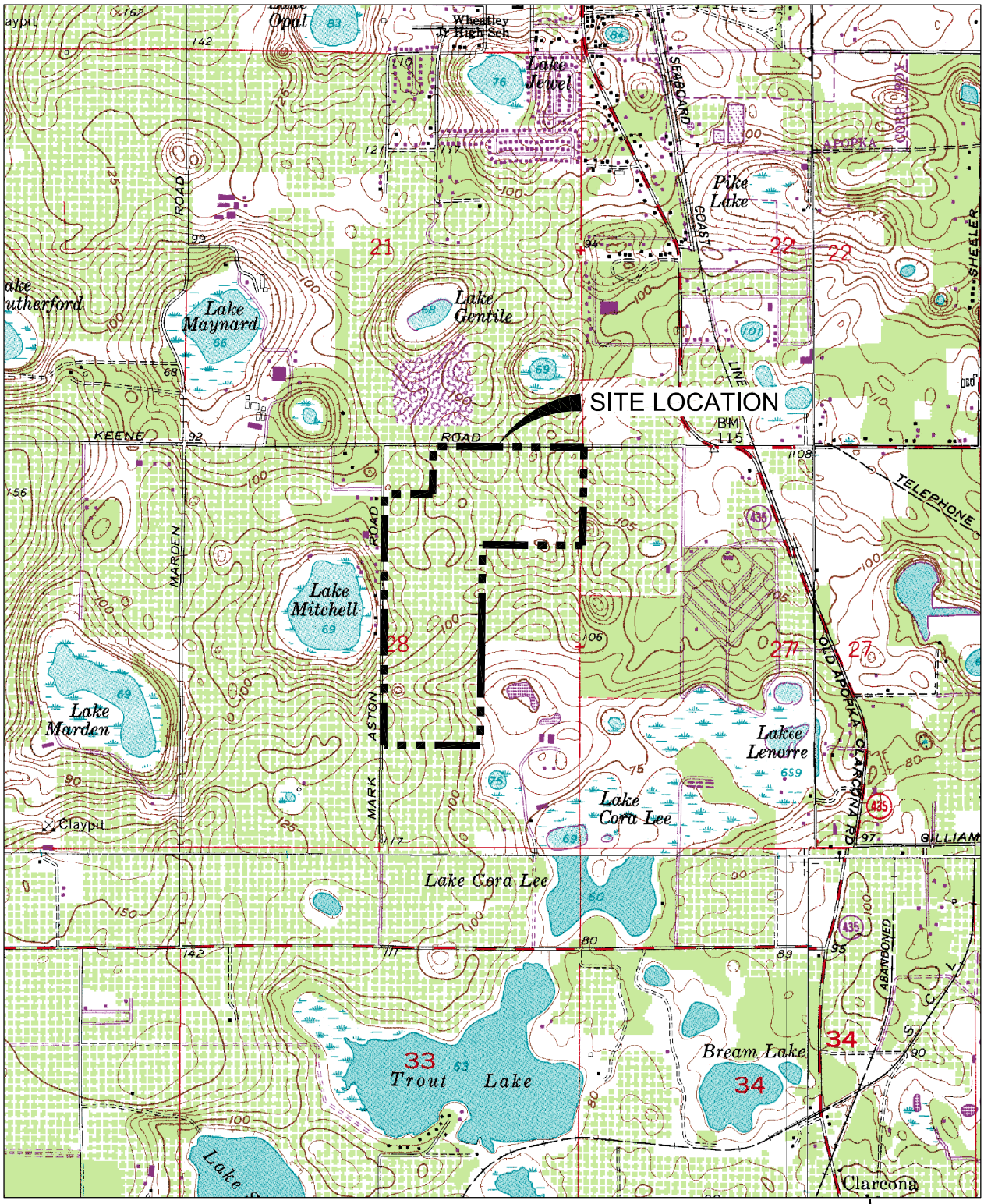
Figures

09-574.020-USGS.dwg

DATE: February 2011



USGS TOPOGRAPHIC MAPS: APOPKA, WINTER GARDEN, FOREST CITY & ORLANDO WEST

N

0 1000 2000

DISTANCE IN FEET

hsagolden engineering environmental solutions
100 EAST PINE STREET, SUITE 605
ORLANDO, FL 32801
P: 407.649.5475 F: 407.649.6582
HSAGOLDEN.COM

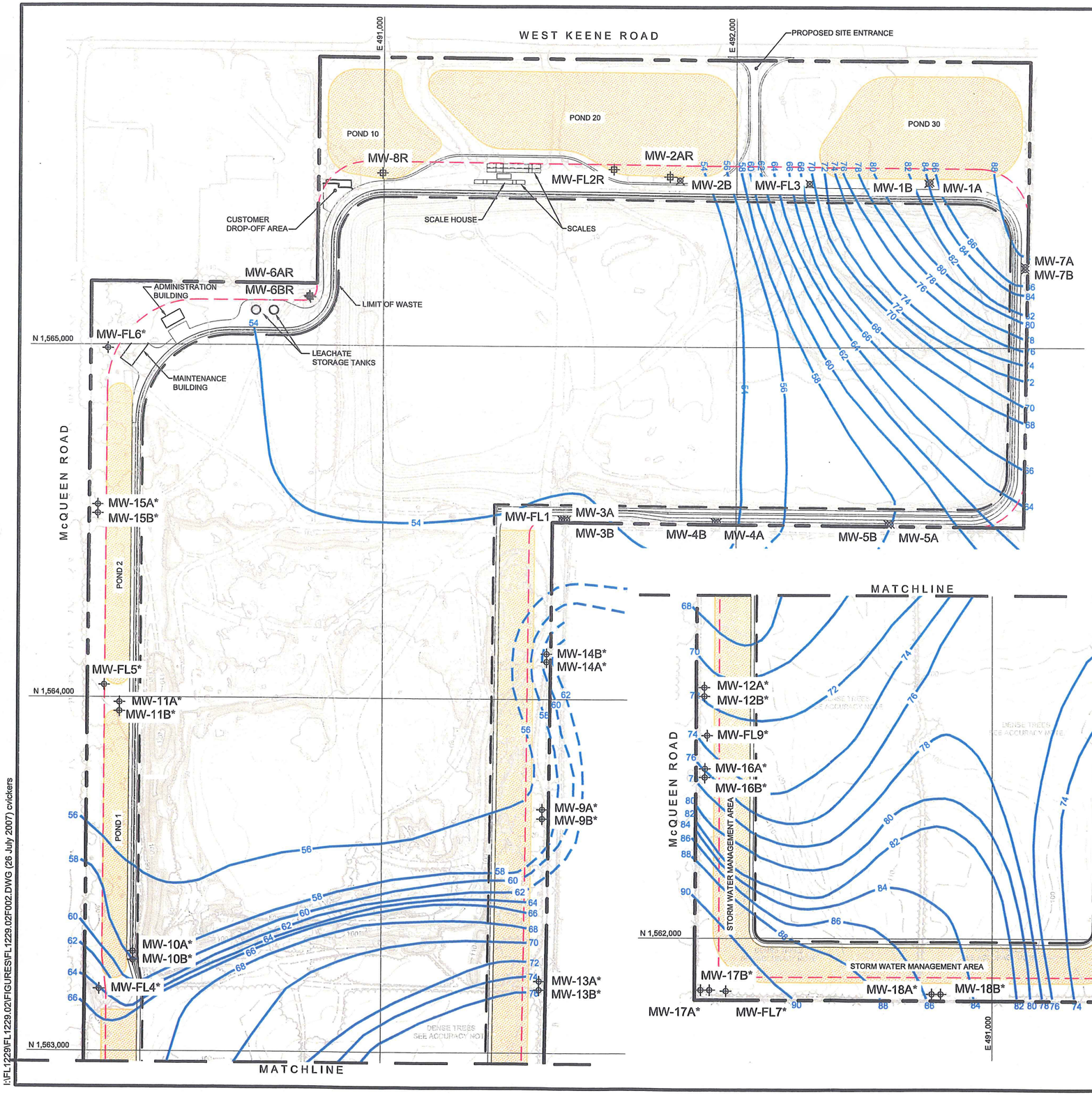
VISTA LANDFILL, CLASS III FACILITY
APOPKA, FLORIDA

PROJECT NO. 09-574.020

SITE LOCATION MAP

FIGURE

1



NORTH

300 150 0 300

SCALE IN FEET

LEGEND

	APPROXIMATE PROPERTY BOUNDARY
80	EXISTING GROUND CONTOUR (SEE NOTE 1)
60	COMPOSITE SEASONAL HIGH GROUNDWATER SURFACE CONTOUR
	ZONE OF DISCHARGE
	TREE LINE
	UNIMPROVED / DIRT ROAD
	IMPROVED / PAVED ROAD
	FENCE
76	SPOT ELEVATION
MW-8	EXISTING MONITORING WELL
MW-FL2	EXISTING FLORIDAN AQUIFER MONITORING WELL
MW-8R	RELOCATED MONITORING WELL
MW-FL2R	RELOCATED FLORIDAN AQUIFER MONITORING WELL
MW-9*	PROPOSED MONITORING WELL
MW-FL5*	PROPOSED FLORIDAN AQUIFER MONITORING WELL

NOTES:

1. AERIAL TOPOGRAPHIC MAP PREPARED BY 3001, INC. AND COMPILED FROM PHOTOGRAPH DATED 18 MARCH 2007. CONTOURS PORTRAYED AS DASHED OR BROKEN LINES REPRESENT AREAS OF DENSE VEGETATION AND SHOULD BE CONSIDERED APPROXIMATE. THIS MAP HAS NOT BEEN FIELD VERIFIED. THIS MAP SHOULD BE FIELD VERIFIED PRIOR TO USE AS A BASIS FOR CONSTRUCTION.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY 3001, INC. HORIZONTAL COORDINATE VALUES ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83), FLORIDA EAST ZONE. CONTOURS AND SPOT ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
3. GROUNDWATER MONITORING DATA SHOWN HEREON WAS OBTAINED FROM A SURVEY PREPARED BY PICKETT AND ASSOCIATES DATED 16 FEBRUARY 2007
4. GROUNDWATER TABLE CONTOURS ARE BASED ON SEASONAL HIGH WATER TABLE ELEVATIONS PRESENTED IN THE FOLLOWING REPORTS PREPARED BY DEVO ENGINEERING: "ESTIMATE OF SEASONAL HIGH GROUNDWATER ELEVATION" (DATED 21 OCTOBER 2002), "SUPPLEMENT # 1 TO REPORT DATED 21 OCTOBER 2002" (DATED 21 APRIL 2003), "WATER TABLE ESTIMATES AND PROPOSED BASE GRADE ELEVATIONS - BD4 SITE" (DATED 10 FEBRUARY 2004)

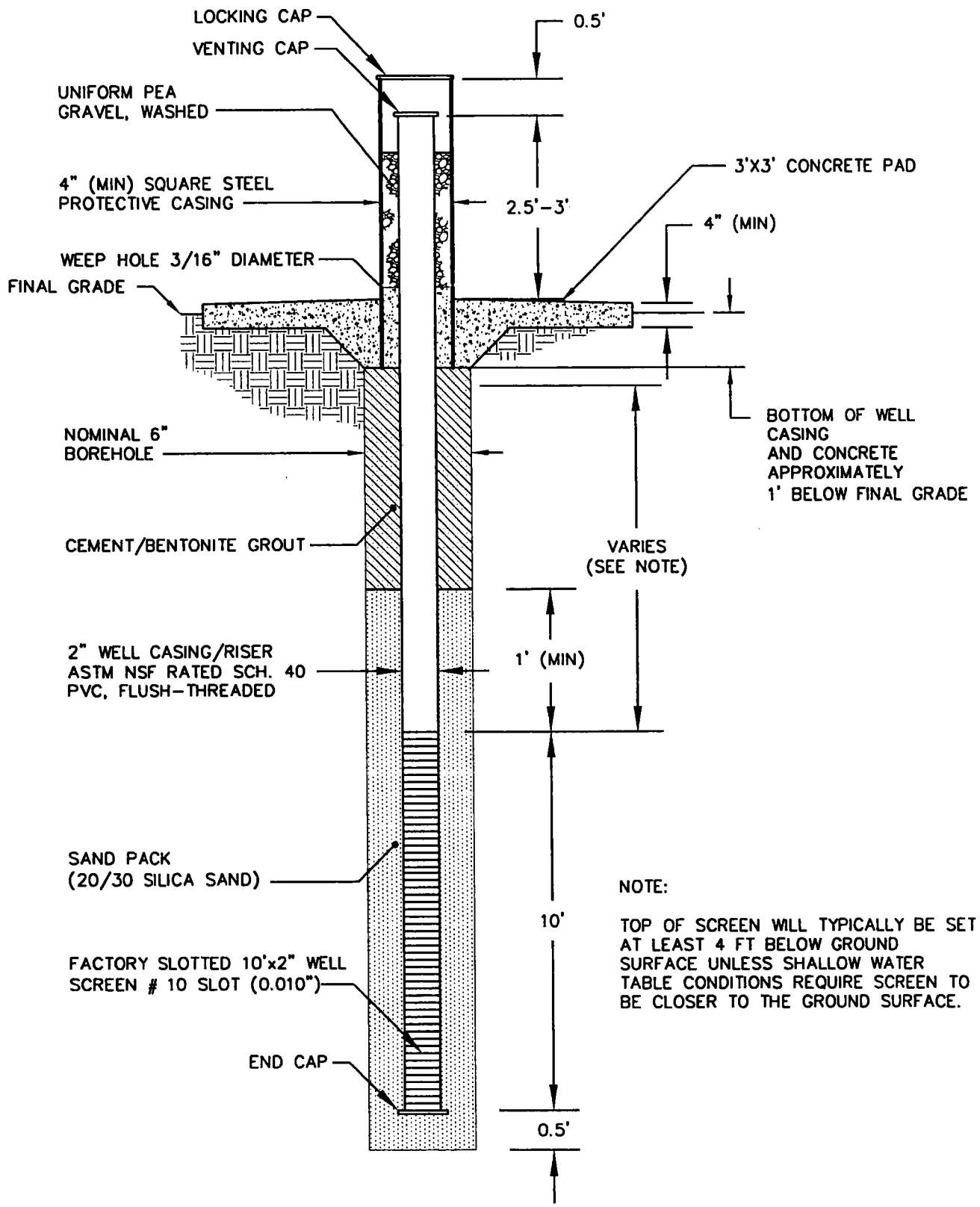
GROUND WATER MONITORING NETWORK
VISTA CLASS III LANDFILL
APOPKA, FLORIDA

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F002
PROJECT NO.	FL1229	FIGURE NO.	2

I:\FL1229\FL1229.02\FIGURES\FL1229.02F002.DWG (26 July 2007) cvickers



NOTE:

TOP OF SCREEN WILL TYPICALLY BE SET AT LEAST 4 FT BELOW GROUND SURFACE UNLESS SHALLOW WATER TABLE CONDITIONS REQUIRE SCREEN TO BE CLOSER TO THE GROUND SURFACE.

TYPICAL WELL CONSTRUCTION DETAIL

Geosyntec consultants

TAMPA, FL

DATE:	JULY 2007	FILE NO.	FL1229.02F001-W
PROJECT NO.	FL1229	FIGURE NO.	3

I:\FL1229\FL1229.02\WELLFIGURES\FL1229.02F001-W.DWG (22 June 2007) ecsordas

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Attachment A

later, in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of § 258.58.

(ii) The owner or operator is no longer required to maintain the items specified in paragraph (h)(2) of this section when:

(A) The owner or operator substitutes alternate financial assurance as specified in this section; or

(B) The owner or operator is released from the requirements of this section in accordance with § 258.71(b), 258.72(b), or 258.73(b).

(iii) If a local government guarantor no longer meets the requirements of paragraph (f) of this section, the owner or operator must, within 90 days, obtain alternative assurance, place evidence of the alternate assurance in the facility operating record, and notify the State Director. If the owner or operator fails to obtain alternate financial assurance within that 90-day period, the guarantor must provide that alternate assurance within the next 30 days.

(i) *State-Approved mechanism.* An owner or operator may satisfy the requirements of this section by obtaining any other mechanism that meets the criteria specified in § 258.74(l), and that is approved by the Director of an approved State.

(j) *State assumption of responsibility.* If the State Director either assumes legal responsibility for an owner or operator's compliance with the closure, post-closure care and/or corrective action requirements of this part, or assures that the funds will be available from State sources to cover the requirements, the owner or operator will be in compliance with the requirements of this section. Any State assumption of responsibility must meet the criteria specified in § 258.74(l).

(k) *Use of multiple mechanisms.* An owner or operator may demonstrate financial assurance for closure, post-closure, and corrective action, as required by §§ 258.71, 258.72, and 258.73 by establishing more than one mechanism per facility, except that mechanisms guaranteeing performance rather than payment, may not be combined with other instruments. The mechanisms must be as specified in paragraphs (a), (b), (c), (d), (e), (f), (g), (h), (i), and (j) of this section, except that financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care, and/or corrective action may be provided by a combination of mechanisms rather than a single mechanism.

(l) The language of the mechanisms listed in paragraphs (a), (b), (c), (d), (e), (f), (g), (h), (i), and (j) of this section must ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed;

(2) The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed;

(3) The financial assurance mechanisms must be obtained by the owner or operator by the effective date of these requirements or prior to the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and no later that 120 days after the corrective action remedy has been selected in accordance with the requirements of § 258.58, until the owner or operator is released from the financial assurance requirements under §§ 258.71, 258.72 and 258.73.

(4) The financial assurance mechanisms must be legally valid, binding, and enforceable under State and Federal law.

[56 FR 51029, Oct. 9, 1991, as amended at 58 FR 51547, Oct. 1, 1993; 60 FR 40105, Aug. 7, 1995; 60 FR 52342, Oct. 6, 1995; 61 FR 60337, Nov. 27, 1996; 63 FR 17729, Apr. 10, 1998]

§ 258.75 Discounting.

The Director of an approved State may allow discounting of closure cost estimates in § 258.71(a), post-closure cost estimates in § 258.72(a), and/or corrective action costs in § 258.73(a) up to the rate of return for essentially risk free investments, net of inflation, under the following conditions:

(a) The State Director determines that cost estimates are complete and accurate and the owner or operator has

submitted a statement from a Registered Professional Engineer so stating;

(b) The State finds the facility in compliance with applicable and appropriate permit conditions;

(c) The State Director determines that the closure date is certain and the owner or operator certifies that there are no foreseeable factors that will change the estimate of site life; and

(d) Discounted cost estimates must be adjusted annually to reflect inflation and years of remaining life.

[61 FR 60339, Nov. 27, 1996]

APPENDIX I TO PART 258—CONSTITUENTS FOR DETECTION MONITORING [1]

Common name [2]	CAS RN [3]
Inorganic Constituents:	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents:	
(16) Acetone	67–64–1
(17) Acrylonitrile	107–13–1
(18) Benzene	71–43–2
(19) Bromochloromethane	74–97–5
(20) Bromodichloromethane	75–27–4
(21) Bromoform; Tribromomethane	75–25–2
(22) Carbon disulfide	75–15–0
(23) Carbon tetrachloride	56–23–5
(24) Chlorobenzene	108–90–7
(25) Chloroethane; Ethyl chloride	75–00–3
(26) Chloroform; Trichloromethane	67–66–3
(27) Dibromochloromethane; Chlorodibromomethane	124–48–1
(28) 1,2-Dibromo-3-chloropropane; DBCP	96–12–8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106–93–4
(30) o-Dichlorobenzene; 1,2-Dichlorobenzene	95–50–1
(31) p-Dichlorobenzene; 1,4-Dichlorobenzene	106–46–7
(32) trans–1,4-Dichloro-2-butene	110–57–6
(33) 1,1-Dichloroethane; Ethylidene chloride	75–34–3
(34) 1,2-Dichloroethane; Ethylene dichloride	107–06–2
(35) 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75–35–4
(36) cis-1,2-Dichloroethylene, cis-1,2-Dichloroethene	156–59–2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156–60–5
(38) 1,2-Dichloropropane; Propylene dichloride	78–87–5
(39) cis-1,3-Dichloropropene	10061–01–5
(40) trans-1,3-Dichloropropene	10061–02–6
(41) Ethylbenzene	100–41–4
(42) 2-Hexanone; Methyl butyl ketone	591–78–6
(43) Methyl bromide; Bromomethane	74–83–9
(44) Methyl chloride; Chloromethane	74–87–3
(45) Methylene bromide; Dibromomethane	74–95–3
(46) Methylene chloride; Dichloromethane	75–09–2
(47) Methyl ethyl ketone; MEK; 2-Butanone	78–93–3
(48) Methyl iodide; Iodomethane	74–88–4
(49) 4-Methyl-2-pentanone; Methyl isobutyl ketone	108–10–1
(50) Styrene	100–42–5
(51) 1,1,1,2-Tetrachloroethane	630–20–6
(52) 1,1,2,2-Tetrachloroethane	79–34–5
(53) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127–18–4
(54) Toluene	108–88–3
(55) 1,1,1-Trichloroethane; Methylchloroform	71–55–6
(56) 1,1,2-Trichloroethane	79–00–5
(57) Trichloroethylene; Trichloroethene	79–01–6
(58) Trichlorofluoromethane; CFC-11	75–69–4
(59) 1,2,3-Trichloropropane	96–18–4
(60) Vinyl acetate	108–05–4
(61) Vinyl chloride	75–01–4
(62) Xylenes	1330–20–7

[1] This list contains 47 volatile organics for which possible analytical procedures provided in EPA Report SW–846 "Test Methods for Evaluating Solid Waste," third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW–846 provides either Method 6010 or a method from the 7000 series of methods.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

APPENDIX II TO PART 258—LIST OF HAZARDOUS INORGANIC AND ORGANIC CONSTITUENTS [1]

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (μ g/L) [6]
Acenaphthene	83–32–9	Acenaphthylene, 1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208–96–8	Acenaphthylene	8100	200
			8270	10
Acetone	67–64–1	2-Propanone	8260	100
Acetonitrile; Methyl cyanide	75–05–8	Acetonitrile	8015	100
Acetophenone	98–86–2	Ethanone, 1-phenyl-	8270	10
2-Acetylaminofluorene; 2-AAF	53–96–3	Acetamide, N-9H-fluoren-2-yl-	8270	20

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µ g/L) [6]
Acrolein	107–02–8	2-Propenal	8030	5
			8260	100
Acrylonitrile	107–13–1	2-Propenenitrile	8030	5
			8260	200
Aldrin	309–00–2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1α,4α,4aβ,5α,8α,8aβ)-	8080	0.05
			8270	10 ...
Allyl chloride	107–05–1	1-Propene, 3-chloro-	8010	5
			8260	10
4-Aminobiphenyl	92–67–1	[1,1¹-Biphenyl]-4-amine	8270	20
Anthracene	120–12–7	Anthracene	8100	200
			8270	10
Antimony	(Total)	Antimony	6010	300
			7040	2000
			7041	30
Arsenic	(Total)	Arsenic	6010	500
			7060	10
			7061	20
Barium	(Total)	Barium	6010	20
			7080	1000
Benzene	71–43–2	Benzene	8020	2
			8021	0.1
			8260	5 .....
Benzo[a]anthracene; Benzanthracene	56–55–3	Benz[a]anthracene	8100	200
			8270	10
Benzo[b]fluoranthene	205–99–2	Benz[e]acephenanthrylene	8100	200
			8270	10
Benzo[k]fluoranthene	207–08–9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]perylene	191–24–2	Benzo[ghi]perylene	8100	200
			8270	10
Benzo[a]pyrene	50–32–8	Benzo[a]pyrene	8100	200
			8270	10
Benzyl alcohol	100–51–6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319–84–6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5β,6β)-.	8080	0.05
			8270	10 ...
beta-BHC	319–85–7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2β,3α,4β,5α,6β)-.	8080	0.05
			8270	20 ...
delta-BHC	319–86–8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3α,4β,5α,6β)-.	8080	0.1
			8270	20 ...
gamma-BHC; Lindane	58–89–9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1α,2α,3β,4α,5α,6β)-.	8080	0.05
			8270	20 ...
Bis(2-chloroethoxy)methane	111–91–1	Ethane, 1,1¹-[methylenebis(oxy)]bis[2-chloro-.	8110	5
			8270	10
Bis(2-chloroethyl) ether; Dichloroethyl ether.	111-44-4	Ethane, 1,1¹-oxybis[2-chloro-	8110	3
			8270	10
Bis-(2-chloro-1-methylethyl) ether; 2,2¹-Dichlorodiisopropyl ether; DCIP, See note 7	108–60–1	Propane, 2,2¹-oxybis[1-chloro-	8110	10
			8270	10
Bis(2-ethylhexyl) phthalate	117–81–7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester.	8060	20
Bromochloromethane; Chlorobromomethane.	74–97–5	Methane, bromochloro-	8021	0.1
			8260	5 .....
Bromodichloromethane; Dibromochloromethane.	75–27–4	Methane, bromodichloro-	8010	1
			8021	0.2
			8260	5 .....
Bromoform; Tribromomethane	75–25–2	Methane, tribromo-	8010	2
			8021	15
			8260	5
4-Bromophenyl phenyl ether	101–55–3	Benzene, 1-bromo-4-phenoxy-	8110	25
			8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate.	85–68–7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester.	8060	5
			8270	10
Cadmium	(Total)	Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75–15–0	Carbon disulfide	8260	100

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µ g/L) [6]
Carbon tetrachloride	56–23–5	Methane, tetrachloro-	8010	1
			8021	0.1
			8260	10
Chlordane	See Note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-.	8080	0.1
			8270	50
p-Chloroaniline	106–47–8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene	108–90–7	Benzene, chloro-	8010	2
			8020	2
			8021	0.1
			8260	5
Chlorobenzilate	510–15–6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester.	8270	10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol.	59–50–7	Phenol, 4-chloro-3-methyl-	8040	5
			8270	20
Chloroethane; Ethyl chloride	75–00–3	Ethane, chloro-	8010	5
			8021	1
			8260	10
Chloroform; Trichloromethane	67–66–3	Methane, trichloro-	8010	0.5
			8021	0.2
			8260	5
2-Chloronaphthalene	91–58–7	Naphthalene, 2-chloro-	8120	10
			8270	10
2-Chlorophenol	95–57–8	Phenol, 2-chloro-	8040	5
			8270	10
4-Chlorophenyl phenyl ether	7005–72–3	Benzene, 1-chloro-4-phenoxy-	8110	40
			8270	10
Chloroprene	126–99–8	1,3-Butadiene, 2-chloro-	8010	50
			8260	20
Chromium	(Total)	Chromium	6010	70
			7190	500
			7191	10
Chrysene	218–01–9	Chrysene	8100	200
			8270	10
Cobalt	(Total)	Cobalt	6010	70
			7200	500
			7201	10
Copper	(Total)	Copper	6010	60
			7210	200
			7211	10
m-Cresol; 3-methylphenol	108–39–4	Phenol, 3-methyl-	8270	10
o-Cresol; 2-methylphenol	95–48–7	Phenol, 2-methyl-	8270	10
p-Cresol; 4-methylphenol	106–44–5	Phenol, 4-methyl-	8270	10
Cyanide	57–12–5	Cyanide	9010	200
2,4-D; 2,4-Dichlorophenoxyacetic acid	94–75–7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4[1]-DDD	72–54–8	Benzene 1,1[1]-(2,2-dichloroethylidene)bis[4-chloro-.	8080	0.1
			8270	10
4,4[1]-DDE	72–55–9	Benzene, 1,1[1]-(dichloroethylidene)bis[4-chloro-.	8080	0.05
			8270	10
4,4[1]-DDT	50–29–3	Benzene, 1,1[1]-(2,2,2-trichloroethylidene)bis[4-chloro-.	8080	0.1
			8270	10
Diallate	2303–16–4	Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester.	8270	10
Dibenz[a,h]anthracene	53–70–3	Dibenz[a,h]anthracene	8100	200
			8270	10
Dibenzofuran	132–64–9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane.	124–48–1	Methane, dibromochloro-	8010	1
			8021	0.3
			8260	5
1,2-Dibromo-3-chloropropane; DBCP	96–12–8	Propane, 1,2-dibrome-3-chloro-	8011	0.1
			8021	30
			8260	25
1,2-Dibromoethane; Ethylene dribromide; EDB.	106–93–4	Ethane, 1,2-dibromo-	8011	0.1
			8021	10
			8260	5
Di-n-butyl phthalate	84–74–2	1,2-Benzenedicarboxylic acid, dibutyl ester.	8060	5
			8270	10

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µ g/L) [6]
o-Dichlorobenzene; 1,2-Dichlorobenzene.	95–50–1	Benzene, 1,2-dichloro-	8010	2
			8020	5
			8021	0.5
			8120	10
			8260	5
			8270	10
m-Dichlorobenzene; 1,3-Dichlorobenzene.	541–73–1	Benzene, 1,3-Dichloro-	8010	5
			8020	5
			8021	0.2
			8120	10
			8260	5
			8270	10
p-Dichlorobenzene; 1,4-Dichlorobenzene.	106–46–7	Benzene, 1,4-dichloro-	8010	2
			8020	5
			8021	0.1
			8120	15
			8260	5
			8270	10
3,3¹-Dichlorobenzidine	91–94–1	[1,1¹-Biphenyl]-4,4¹-diamine, 3,3¹-dichloro-.	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8260	100
Dichlorodifluoromethane; CFC 12;	75–71–8	Methane, dichlorodifluoro-	8021	0.5
			8260	5
1,1-Dichloroethane; Ethylidene chloride.	75–34–3	Ethane, 1,1-dichloro-	8010	1
			8021	0.5
			8260	5
1,2-Dichloroethane; Ethylene dichloride	107–06–2	Ethane, 1,1-dichloro-	8010	0.5
			8021	0.3
			8260	5
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride.	75–35–4	Ethene, 1,1-dichloro-	8010	1
			8021	0.5
			8260	5
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene.	156–59–2	Ethene, 1,2-dichloro-, (Z)-	8021	0.2
			8260	5
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene.	156–60–5	Ethene, 1,2-dichloro-, (E)-	8010	1
			8021	0.5
			8260	5
2,4-Dichlorophenol	120–83–2	Phenol, 2,4-dichloro-	8040	5
			8270	10
2,6-Dichlorophenol	87–65–0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane; Propylene dichloride.	78–87–5	Propane, 1,2-dichloro-	8010	0.5
			8021	0.05
			8260	5
1,3-Dichloropropane; Trimethylene dichloride.	142–28–9	Propane, 1,3-dichloro-	8021	0.3
			8260	5
2,2-Dichloropropane; Isopropylidene chloride.	594–20–7	Propane, 2,2-dichloro-	8021	0.5
			8260	15
1,1-Dichloropropene	563–58–6	1-Propene, 1,1-dichloro-	8021	0.2
			8260	5
cis-1,3-Dichloropropene	10061–01–5	1-Propene, 1,3-dichloro-, (Z)-	8010	20
			8260	10
trans-1,3-Dichloropropene	10061–02–6	1-Propene, 1,3-dichloro-, (E)-	8010	5
			8260	10
Dieldrin	60–57–1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexa, chloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα,2β,2aα,3β,6β,6aα,7β,7aα)-.	8080	0.05
			8270	10
Diethyl phthalate	84–66–2	1,2-Benzenedicarboxylic acid, diethyl ester.	8060	5
			8270	10
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin.	297–97–2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester.	8141	5
			8270	20
Dimethoate	60–51–5	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	8141	3
			8270	20
p-(Dimethylamino)azobenzene	60–11–7	Benzenamine, N,N-dimethyl-4-(phenylazo)-.	8270	10
7,12-Dimethylbenz[a]anthracene	57–97–6	Benz[a]anthracene, 7,12-dimethyl-	8270	10
3,3¹-Dimethylbenzidine	119–93–7	[1,1¹-Biphenyl]-4,4¹-diamine, 3,3¹-dimethyl-.	8270	10
2,4-Dimethylphenol; m-Xylenol	105–67–9	Phenol, 2,4-dimethyl-	8040	5
			8270	10

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µ g/L) [6]
Dimethyl phthalate	131–11–3	1,2-Benzenedicarboxylic acid, dimethyl ester.	8060 8270	5 10
m-Dinitrobenzene	99–65–0	Benzene, 1,3-dinitro-	8270	20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol.	534–52–1	Phenol, 2-methyl-4,6-dinitro	8040 8270	150 50
2,4-Dinitrophenol;	51–28–5	Phenol, 2,4-dinitro-	8040 8270	150 50
2,4-Dinitrotoluene	121–14–2	Benzene, 1-methyl-2,4-dinitro-	8090 8270	0.2 10 ...
2,6-Dinitrotoluene	606–20–2	Benzene, 2-methyl-1,3-dinitro-	8090 8270	0.1 10 ...
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol.	88–85–7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150 8270	1 20
Di-n-octyl phthalate	117–84–0	1,2-Benzenedicarboxylic acid, dioctyl ester.	8060 8270	30 10
Diphenylamine	122–39–4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298–04–4	Phosphorodithioic acid, 0,0-diethyl S-[2-(ethylthio)ethyl] ester.	8140 8141 8270	2 0.5 10 ...
Endosulfan I	959–98–8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide,	8080 8270	0.1 20 ...
Endosulfan II	33213–65–9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aα,6β,9β,9aα)-.	8080 8270	0.05 20 ...
Endosulfan sulfate	1031–07–8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexa- chloro-1,5,5a,6,9,9a-hexahydro-,3-3-dioxide.	8080 8270	0.5 10 ...
Endrin	72–20–8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα, 2β,2aβ,3α,6α,6aβ,7β,7aα)-.	8080 8270	0.1 20 ...
Endrin aldehyde	7421–93–4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β,2aβ,4β,4aβ,5β,6aβ,6bβ,7R*)-.	8080 8270	0.2 10 ...
Ethylbenzene	100–41–4	Benzene, ethyl-	8020 8221 8260	2 0.05 5 .....
Ethyl methacrylate	97–63–2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8260 8270	5 10 10
Ethyl methanesulfonate	62–50–0	Methanesulfonic acid, ethyl ester	8270	20
Famphur	52–85–7	Phosphorothioic acid, 0-[4-[(dimethylamino)sulfonyl]phenyl] 0,0-dimethyl ester.	8270	20
Fluoranthene	206–44–0	Fluoranthene	8100 8270	200 10
Fluorene	86–73–7	9H-Fluorene	8100 8270	200 10
Heptachlor	76–44–8	4,7-Methano-1H-Indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.	8080 8270	0.05 10 ...
Heptachlor epoxide	1024–57–3	2,5-Methano-2H-Indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro-, (1aα, 1bβ, 2α, 5α, 5aβ, 6β, 6aα).	8080 8270	1 10
Hexachlorobenzene	118–74–1	Benzene, hexachloro-	8120 8270	0.5 10 ...
Hexachlorobutadiene	87–68–3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8021 8120 8260 8270	0.5 5 ..... 10 ... 10 ...
Hexachlorocyclopentadiene	77–47–4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-.	8120 8270	5 10
Hexachloroethane	67–72–1	Ethane, hexachloro-	8120 8260 8270	0.5 10 ... 10 ...
Hexachloropropene	1888–71–7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591–78–6	2-Hexanone	8260	50

Common Name[2]	CAS RN[3]	Chemical abstracts service index name[4]	Suggested methods[5]	PQL (µ g/L)[6]
Indeno(1,2,3-cd)pyrene	193–39–5	Indeno(1,2,3-cd)pyrene	8100	200
			8270	10
Isobutyl alcohol	78–83–1	1-Propanol, 2-methyl-	8015	50
			8240	100
Isodrin	465–73–6	1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1α,4α,4aβ,5β,8β,8aβ)-.	8270	20
			8260	10
Isophorone	78–59–1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090	60
			8270	10
Isosafrole	120–58–1	1,3-Benzodioxole, 5-(1-propenyl)-	8270	10
Kepone	143–50–0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-.	8270	20
Lead	(Total)	Lead	6010	400
			7420	1000
			7421	10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126–98–7	2-Propenenitrile, 2-methyl-	8015	5
			8260	100
Methapyrilene	91–80–5	1,2-Ethanediamine, N,N-dimethyl-N[1]-2-pyridinyl-N1/2-thienylmethyl)-.	8270	100
Methoxychlor	72–43–5	Benzene,1,1[1]-(2,2,2,trichloroethylidene)bis[4-methoxy-.	8080	2
			8270	10
Methyl bromide; Bromomethane	74–83–9	Methane, bromo-	8010	20
			8021	10
Methyl chloride; Chloromethane	74–87–3	Methane, chloro-	8010	1
			8021	0.3
3-Methylcholanthrene	56–49–5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-.	8270	10
Methyl ethyl ketone; MEK; 2-Butanone	78–93–3	2-Butanone	8015	10
			8260	100
Methyl iodide; Iodomethane	74–88–4	Methane, iodo-	8010	40
			8260	10
Methyl methacrylate	80–62–6	2-Propenoic acid, 2-methyl-, methyl ester.	8015	2
			8260	30
Methyl methanesulfonate	66–27–3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91–57–6	Naphthalene, 2-methyl-	8270	10
Methyl parathion; Parathion methyl	298–00–0	Phosphorothioic acid, 0,0-dimethyl	8140	0.5
			8141	1
			8270	10
4-Methyl-2-pentanone; Methyl isobutyl ketone.	108–10–1	2-Pentanone, 4-methyl-	8015	5
			8260	100
Methylene bromide; Dibromomethane	74–95–3	Methane, dibromo-	8010	15
			8021	20
			8260	10
Methylene chloride; Dichloromethane	75–09–2	Methane, dichloro-	8010	5
			8021	0.2
			8260	10
Naphthalene	91–20–3	Naphthalene	8021	0.5
			8100	200
			8260	5
			8270	10
1,4-Naphthoquinone	130–15–4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134–32–7	1-Naphthalenamine	8270	10
2-Naphthylamine	91–59–8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010	150
			7520	400
o-Nitroaniline; 2-Nitroaniline	88–74–4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline; 3-Nitroanile	99–09–2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline; 4-Nitroaniline	100–01–6	Benzenamine, 4-nitro	8270	20
Nitrobenzene	98–95–3	Benzene, nitro-	8090	40
			8270	10
o-Nitrophenol; 2-Nitrophenol	88–75–5	Phenol, 2-nitro-	8040	5
			8270	10
p-Nitrophenol; 4-Nitrophenol	100–02–7	Phenol, 4-nitro-	8040	10
			8270	50
N-Nitrosodi-n-butylamine	924–16–3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55–18–5	Ethanamine, N-ethyl-N-nitroso-	8270	20
N-Nitrosodimethylamine	62–75–9	Methanamine, N-methyl-N-nitroso-	8070	2

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µ g/L) [6]
N-Nitrosodiphenylamine	86–30–6	Benzenamine, N-nitroso-N-phenyl-	8070	5
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine.	621–64–7	1-Propanamine, N-nitroso-N-propyl-	8070	10
N-Nitrosomethylethylamine	10595–95–6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosopiperidine	100–75–4	Piperidine, 1-nitroso-	8270	20
N-Nitrosopyrrolidine	930–55–2	Pyrrolidine, 1-nitroso-	8270	40
5-Nitro-o-toluidine	99–55–8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56–38–2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester.	8141	0.5
			8270	10
Pentachlorobenzene	608–93–5	Benzene, pentachloro-	8270	10
Pentachloronitrobenzene	82–68–8	Benzene, pentachloronitro-	8270	20
Pentachlorophenol	87–86–5	Phenol, pentachloro-	8040	5
			8270	50
Phenacetin	62–44–2	Acetamide, N-(4-ethoxyphenl)	8270	20
Phenanthrene	85–01–8	Phenanthrene	8100	200
			8270	10
Phenol	108–95–2	Phenol	8040	1
p-Phenylenediamine	106–50–3	1,4-Benzenediamine	8270	10
Phorate	298–02–2	Phosphorodithioic acid, 0,0-diethyl S-[(ethylthio)methyl] ester.	8140	2
			8141	0.5
			8270	10
Polychlorinated biphenyls; PCBs; Aroclors.	See Note 9	1,1'-Biphenyl, chloro derivatives	8080	50
			8270	200
Pronamide	23950–58–5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-.	8270	10
Propionitrile; Ethyl cyanide	107–12–0	Propanenitrile	8015	60
			8260	150
Pyrene	129–00–0	Pyrene	8100	200
			8270	10
Safrole	94–59–7	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Total)	Selenium	6010	750
			7740	20
			7741	20
Silver	(Total)	Silver	6010	70
			7760	100
			7761	10
Silvex; 2,4,5-TP	93–72–1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-.	8150	2
Styrene	100–42–5	Benzene, ethenyl-	8020	1
			8021	0.1
			8260	10
Sulfide	18496–25–8	Sulfide	9030	4000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid.	93–76–5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
1,2,4,5-Tetrachlorobenzene	95–94–3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630–20–6	Ethane, 1,1,1,2-tetrachloro-	8010	5
			8021	0.05
			8260	5
1,1,2,2-Tetrachloroethane	79–34–5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8021	0.1
			8260	5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene.	127–18–4	Ethene, tetrachloro-	8010	0.5
			8021	0.5
			8260	5
2,3,4,6-Tetrachlorophenol	58–90–2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Thallium	(Total)	Thallium	6010	400
			7840	1000
			7841	10
Tin	(Total)	Tin	6010	40
Toluene	108–88–3	Benzene, methyl-	8020	2
			8021	0.1
			8260	5
o-Toluidine	95–53–4	Benzenamine, 2-methyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120–82–1	Benzene, 1,2,4-trichloro-	8021	0.3
			8120	0.5
			8260	10
			8270	10
1,1,1-Trichloroethane; Methylchloroform	71–55–6	Ethane, 1,1,1-trichloro-	8010	0.3
			8021	0.3
			8260	5

Common Name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8260	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010	1
			8021	0.2
			8260	5
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010	10
			8021	0.3
			8260	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8021	5
			8260	15
0,0,0-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethylester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-	8010	2
			8021	0.4
			8260	10
Xylene (total)	See Note 11	Benzene, dimethyl-	8020	5
			8021	0.2
			8260	5
Zinc	(Total)	Zinc	6010	20
			7950	50
			7951	0.5

Notes

[1] The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

[4] CAS index are those used in the 9th Collective Index.

[5] Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

[6] Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be realiably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

[7] This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2'-oxybis[2-chloro- (CAS RN 39638-32-9).

[8] Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 µg/L by method 8270.

[9] Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

[10] Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

[11] Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 µg/L by method 8020 or 8260.

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in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 °C (130 °F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990; 58 FR 46049, Aug. 31, 1993]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

[45 FR 33119, May 19, 1980, as amended at 55 FR 22684, June 1, 1990]

§ 261.24 Toxicity characteristic.

(a) A solid waste (except manufactured gas plant waste) exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste

itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC

EPA HW No.[1]	Contaminant	CAS No.[2]	Regulatory Level (mg/L)
D004	Arsenic	7440–38–2	5.0
D005	Barium	7440–39–3	100.0
D018	Benzene	71–43–2	0.5
D006	Cadmium	7440–43–9	1.0
D019	Carbon tetrachloride	56–23–5	0.5
D020	Chlordane	57–74–9	0.03
D021	Chlorobenzene	108–90–7	100.0
D022	Chloroform	67–66–3	6.0
D007	Chromium	7440–47–3	5.0
D023	o-Cresol	95–48–7	[4] 200.0
D024	m-Cresol	108–39–4	[4] 200.0
D025	p-Cresol	106–44–5	[4] 200.0
D026	Cresol	.....	[4] 200.0
D016	2,4-D	94–75–7	10.0
D027	1,4-Dichlorobenzene	106–46–7	7.5
D028	1,2-Dichloroethane	107–06–2	0.5
D029	1,1-Dichloroethylene	75–35–4	0.7
D030	2,4-Dinitrotoluene	121–14–2	[3] 0.13
D012	Endrin	72–20–8	0.02
D031	Heptachlor (and its epoxide).	76–44–8	0.008
D032	Hexachlorobenzene	118–74–1	[3] 0.13
D033	Hexachlorobutadiene	87–68–3	0.5
D034	Hexachloroethane	67–72–1	3.0
D008	Lead	7439–92–1	5.0
D013	Lindane	58–89–9	0.4
D009	Mercury	7439–97–6	0.2
D014	Methoxychlor	72–43–5	10.0
D035	Methyl ethyl ketone	78–93–3	200.0
D036	Nitrobenzene	98–95–3	2.0
D037	Pentrachlorophenol	87–86–5	100.0
D038	Pyridine	110–86–1	[3] 5.0
D010	Selenium	7782–49–2	1.0
D011	Silver	7440–22–4	5.0
D039	Tetrachloroethylene	127–18–4	0.7
D015	Toxaphene	8001–35–2	0.5
D040	Trichloroethylene	79–01–6	0.5
D041	2,4,5-Trichlorophenol	95–95–4	400.0
D042	2,4,6-Trichlorophenol	88–06–2	2.0
D017	2,4,5-TP (Silvex)	93–72–1	1.0
D043	Vinyl chloride	75–01–4	0.2

[1] Hazardous waste number.
[2] Chemical abstracts service number.
[3] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.
[4] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[55 FR 11862, Mar. 29, 1990, as amended at 55 FR 22684, June 1, 1990; 55 FR 26987, June 29, 1990; 58 FR 46049, Aug. 31, 1993; 67 FR 11254, Mar. 13, 2002]

Subpart D—Lists of Hazardous Wastes

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§ 260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Appendix VII identifies the constituent which caused the Administrator to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32.

(c) Each hazardous waste listed in this subpart is assigned an EPA Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under parts 262 through 265, 268, and part 270 of this chapter.

(d) The following hazardous wastes listed in § 261.31 or § 261.32 are subject to the exclusion limits for acutely hazardous wastes established in § 261.5: EPA Hazardous Wastes Nos. FO20, FO21, FO22, FO23, FO26, and FO27.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 2000, Jan. 14, 1985; 51 FR 40636, Nov. 7, 1986; 55 FR 11863, Mar. 29, 1990]

§ 261.31 Hazardous wastes from non-specific sources.

(a) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in appendix IX.