ATKINS

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October 27, 2015

Mr. Henry Freedenberg, PE, PG
Solid Waste Section
Department of Environmental Protection
2600 Blair Stone Road, MS# 4565,
Tallahassee, FL 32399

RE: Permit No. 39884-018-SO/01 Renewal Permit Application

Dear Mr. Freedenberg:

On behalf of Manatee County, Atkins is submitting the enclosed application for the renewal of the referenced permit. This application is for a 20 year operations permit. The equivalent liner system for the Stage II area has been constructed and was approved and accepted by the Department. Enclosed please find a check for the initial $10,000 permit application fee, an original application and a compact disc with electronic files, with all supporting documents. The County understands that three additional $10,000 fees will be required at five year intervals, due upon the anniversary of the issuance date of this permit, to complete the payment of $40,000 for the 20 year permit fee.

The substantive changes provided with this application, from the previous application, include a new leachate collection system cleaning report (Appendix A), a detailed fill sequencing plan for the Stage II area (Appendix B), an updated water quality monitoring plan for the Stage II area (Part L), updated financial assurance cost estimates (Part R), and several changes to the Operations Plan (Part K) as follows:

- Updated figures,
- Updated staffing information,
- Updated list of equipment,
- Updated monitoring data reporting tables,
- Updated related permit information,
- Updated section on stormwater management for Stage II operations, and
- Updated remaining site life estimate.

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The sections of the application are organized in accordance with the Parts of the application form. Should you have any questions or need additional information, please do not hesitate to contact Mr. White at Manatee County or the undersigned.

Sincerely,

John A. Banks, P.E
Project Director

Cc: Bryan White, Manatee County

REFERENCE REPORTS AND DRAWINGS

1. "COMPILATION OF HYDROGEOLOGICAL AND GROUNDWATER DATA FOR LENA ROAD LANDFILL STAGE II AREA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED AUGUST 29, 1985.

2. "SITE EXPLORATION PROPOSED SLURRY WALL LEACHATE CONTROL SYSTEM LENA ROAD LANDFILL, STAGE II, MANATEE COUNTY, FLORIDA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED OCTOBER 31, 1988.

3. "PROGRESS REPORT SLURRY WALL CONSTRUCTION LENA ROAD LANDFILL" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED JULY 22, 1989 THROUGH AUGUST 18, 1989.

4. "PROGRESS REPORT SLURRY WALL CONSTRUCTION LENA ROAD LANDFILL" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED JUNE 19, 1989 THROUGH JULY 21, 1989.

5. "MANATEE COUNTY, FLORIDA, LENA ROAD LANDFILL IMPROVEMENTS, STAGE 2 & 3" DRAWINGS/PLANS PREPARED BY MANATEE COUNTY PUBLIC WORKS DEPARTMENT/ENGINEERING DIVISION AND ARDAMAN & ASSOCIATES, INC., DATED MARCH 1988 (14 SHEETS 24" X 36").

6. "MANATEE COUNTY, FLORIDA, LENA ROAD LANDFILL IMPROVEMENTS, STAGE 2-LEACHATE COLLECTION SYSTEM, PUMP STATION, AND FORCE MAIN" DRAWINGS/PLANS PREPARED BY MANATEE COUNTY PUBLIC WORKS DEPARTMENT/ENGINEERING DIVISION, DATED JANUARY 1990 (REVISED OCTOBER 1990) (12 SHEETS 24" X 36").

7. "REPORT OF GEOTECHNICAL ENGINEERING SERVICES LENA ROAD LANDFILL STAGE 2 MANATEE COUNTY, FLORIDA" PREPARED BY ANDREYEV ENGINEERING, INC., SEPTEMBER 30, 2010.

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: August 12, 2012

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
Suite 308
Pensacola, FL 32502-5794
850-595-8300

Northeast District
7777 Baymeadows Way West
Suite 100
Jacksonville, FL 32256-7590
904-256-1700

Central District
3319 Maguire Boulevard
Suite 232
Orlando, FL 32803-3767
407-897-4100

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

South District
2295 Victoria Ave, Suite 364
P.O. Box 2549
Fort Myers, FL 33901-3881
239-344-5600

Southeast District
400 North Congress Avenue
Suite 200
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 appropriate Department 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; Yard Trash Disposal Facilities should notify on Form 62-701.900(3), FAC; Compost Facilities should apply on Form 62-709.901(1), 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: Lena Road Class I Landfill

5. DEP ID number: SWD-41-44795 County: Manatee

6. Facility location (main entrance):
   3333 Lena Road, Bradenton, FL 34211

7. Location coordinates:
   Section: (1) (31) (6&7) Township: (35S) (34S) (35S) Range: (18E) (19E) (19E)
   Latitude: 27 ° 28 ' 10 " Longitude: 82 ° 26 ' 35 "
   Datum: NAD 83 Coordinate method: State Plane Florida East Zone NAD 83
   Collected by: Isaac F. Rooks, Jr., PSM #5416 Company/Affiliation: I.F. Rooks & Associates, Inc.

8. Applicant name (operating authority): Manatee County Government-Utilities Department

Mailing address: 3333 Lena Road Bradenton FL 34211
Street or P.O. Box City State Zip

Contact person: Bryan White Telephone: (941) 748-5543 Ext. 8008

Title: Landfill Superintendent

bryan.white@mymanatee.org
E-Mail address (if available)

9. Authorized agent/Consultant: Atkins

Mailing address: 100 Paramount Drive, Suite 207 Sarasota FL 34232
Street or P.O. Box City State Zip

Contact person: John Banks Telephone: (941) 225-4825

Title: Technical Director of Solid Waste Services

john.banks@atkinsglobal.com
E-Mail address (if available)

10. Landowner (if different than applicant): _____

Mailing address: _____
Street or P.O. Box City State Zip

Contact person: _____ Telephone: (____) _____

_____
E-Mail address (if available)

11. Cities, towns, and areas to be served:
All of Manatee County, both incorporated and unincorporated, Long Boat Key and small portions of neighboring counties.

12. Population to be served:
Current: 345,734 Five-Year Projection: 377,335

13. Date site will be ready to be inspected for completion: Not applicable

14. Expected life of the facility: 30 years

15. Estimated costs:
Total Construction: $ N/A Closing Costs: $ 36,257,000

16. Anticipated construction starting and completion dates:
From: Not applicable To: Not applicable

17. Expected volume or weight of waste to be received:
_____ yds^3/day 1,280 tons/day _____ gallons/day

PART B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned under this application:
   This application is to renew the landfill operation permit for the Lena Road Class I Landfill, which includes Stages, I, II and III.

2. Facility site supervisor: Bryan White
   Title: Landfill Superintendent Telephone: (941) 748-5543 Ext. 8008
   bryan.white@mymanatee.org
   E-Mail address (if available)

3. Disposal area: Total acres: 316 Used acres: 316 Available acres: 0

4. Weighing scales used: ☑ Yes ☐ No

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

6. Charge for waste received: _____ $/yds^3 36 $/ton

7. Surrounding land use, zoning:
   - ☑ Residential
   - ☑ Agricultural
   - ☐ Commercial
   - ☐ Industrial
   - ☐ None
   - ☑ Other (describe):

   Transportation and Utilities - Wastewater Treatment Plant

8. Types of waste received:
   - ☑ Household
   - ☑ Commercial
   - ☐ Incinerator/WTE ash
   - ☐ Treated biomedical
   - ☑ Water treatment sludge
   - ☐ Air treatment sludge
   - ☑ Agricultural
   - ☑ Asbestos
   - ☑ C & D debris
   - ☑ Shredded/cut tires
   - ☑ Yard trash
   - ☐ Septic tank
   - ☐ Industrial
   - ☐ Industrial sludge
   - ☑ Domestic sludge
   - ☐ Other (describe):

9. Salvaging permitted: ☐ Yes ☑ No

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

11. Trained spotters: ☑ Yes ☐ No Number of spotters used: 16

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

13. Days of operation: Monday through Saturday

14. Hours of operation: 8 am to 5 pm

15. Days working face covered: Daily - Monday through Saturday

16. Elevation of water table: 29 ft. Datum Used: Florida East Zone NAD 83

17. Number of monitoring wells: 18

18. Number of surface monitoring points: 2

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
- ☐ Single clay liner
- ☐ Single geomembrane
- ☐ Single composite
- ☑ Slurry wall
- ☐ Double geomembrane
- ☐ Geomembrane & composite
- ☐ Double composite
- ☐ None
- ☐ Other (describe):

21. Leachate collection method:

- ☑ Collection pipes
- ☐ Geonets
- ☐ Well points
- ☐ Perimeter ditch
- ☐ Other (describe):
- ☐ Double geomembrane
- ☐ Gravel layer
- ☑ Interceptor trench
- ☐ None

22. Leachate storage method:

☐ Tanks ☐ Surface impoundments

☑ Other (describe):

There is no leachate storage.

23. Leachate treatment method:

☐ Oxidation ☐ Chemical treatment

☐ Secondary ☐ Settling

☐ Advanced ☑ None

☐ Other (describe):

24. Leachate disposal method:

☐ Recirculated ☑ Pumped to WWTP

☐ Transported to WWTP ☐ Discharged to surface water/wetland

☐ Injection well ☐ Percolation ponds

☐ Evaporation ☐ Spray irrigation

☐ Other (describe):

25. For leachate discharged to surface waters:

Name and Class of receiving water:

Not applicable

26. Storm Water:

Collected: ☑ Yes ☐ No

Type of treatment:

Sand filter and/or mechanical filter

Name and Class of receiving water:

Cypress Strand and Gates Creek via on-site wetlands

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

MSSW Permit #403143.01

PART C. PROHIBITIONS (62-701.300, FAC)

	LOCATION			
S ☑	C1	N/A ☐	N/C ☐	1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC)
S ☑	C2	N/A ☐	N/C ☐	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);
S ☑	C3	N/A ☐	N/C ☐	3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC)
S ☑	C4	N/A ☐	N/C ☐	4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC)
S ☑	C5	N/A ☐	N/C ☐	5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC)
S ☑	C6	N/A ☐	N/C ☐	6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC)
S ☑	C7	N/A ☐	N/C ☐	7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC)
S ☑	C8	N/A ☐	N/C ☐	8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC)
S ☑	C9	N/A ☐	N/C ☐	9. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC)
S ☑	C10	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	A	N/A ☐	N/C ☐	1. Four copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5)(a), FAC)
S ☑	See Note #1	N/A ☐	N/C ☐	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)
S ☑	See Note #2	N/A ☐	N/C ☐	3. A letter of transmittal to the Department; (62-701.320(7)(a), FAC)

LOCATION				PART D CONTINUED
S ☑	See Note #3	N/A ☐	N/C ☐	4. A completed application form dated and signed by the applicant; (62-701.320(7)(b), FAC)
S ☑	See Note #4	N/A ☐	N/C ☐	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)
S ☑	See Note #5	N/A ☐	N/C ☐	6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 ½ 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)
S ☑	See Note #6	N/A ☐	N/C ☐	7. Operation Plan and Closure Plan; (62-701.320(7)(e)1, FAC)
S ☑	K2.b.	N/A ☐	N/C ☐	8. Contingency Plan; (62-701.320(7)(e)2, FAC)
S ☑	See Note #7	N/A ☐	N/C ☐	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)
S ☑	See Note #8	N/A ☐	N/C ☐	a. A regional map or plan with the project location in relation to major roadways and population centers;
S ☑	See Note #9	N/A ☐	N/C ☐	b. A vicinity map or aerial photograph no more than one year old showing the facility site and relevant surface features located within 1000 feet of the facility;
S ☐	See Note #10	N/A ☐	N/C ☑	c. A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor and Mapper;
S ☑	See Note #11	N/A ☐	N/C ☐	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 ☐	See Note #12	N/A ☐	N/C ☑	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)
S ☑	D11	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	D12	N/A ☐	N/C ☐	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 the state; (62-701.320(7)(i), FAC)
S ☑	D13	N/A ☐	N/C ☐	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; (62-701.320(8), FAC)
S ☑	D14	N/A ☐	N/C ☐	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)
S ☑	K1	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	Figure E1	N/A ☐	N/C ☐	1. Regional map or aerial photograph no more than five years old showing all airports that are located within five miles of the proposed landfill; (62-701.330(3)(a), FAC)
S ☑	See Note #13	N/A ☐	N/C ☐	2. Plot plan with a scale not greater than 200 feet to the inch showing: (62-701.330(3)(b), FAC)
S ☑	See Note #14	N/A ☐	N/C ☐	a. Dimensions;
S ☑	See Note #15	N/A ☐	N/C ☐	b. Locations of proposed and existing water quality monitoring wells;
S ☐	See Note #16	N/A ☐	N/C ☑	c. Locations of soil borings;
S ☑	See Note #17	N/A ☐	N/C ☐	d. Proposed plan of trenching or disposal areas;
S ☑	See Note #18	N/A ☐	N/C ☐	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
S ☑	See Note #19	N/A ☐	N/C ☐	f. Any previously filled waste disposal areas;
S ☑	See Note #20	N/A ☐	N/C ☐	g. Fencing or other measures to restrict access;

LOCATION				PART E CONTINUED
S ☑	See Note #21	N/A ☐	N/C ☐	3. Topographic maps with a scale not greater than 200 feet to the inch with five foot contour intervals showing: (62-701.330(3)(c), FAC)
S ☑	See Note #22	N/A ☐	N/C ☐	a. Proposed fill areas;
S ☑	See Note #23	N/A ☐	N/C ☐	b. Borrow areas;
S ☑	See Note #24	N/A ☐	N/C ☐	c. Access roads;
S ☑	See Note #25	N/A ☐	N/C ☐	d. Grades required for proper drainage;
S ☑	See Note #26	N/A ☐	N/C ☐	e. Cross sections of lifts;
S ☑	See Note #27	N/A ☐	N/C ☐	f. Special drainage devices if necessary;
S ☑	See Note #28	N/A ☐	N/C ☐	g. Fencing;
S ☑	See Note #29	N/A ☐	N/C ☐	h. Equipment facilities;
S ☑	Part E	N/A ☐	N/C ☐	4. A report on the landfill describing the following: (62-701.330(3)(d), FAC)
S ☑	Part E	N/A ☐	N/C ☐	a. The current and projected population and area to be served by the proposed site;
S ☑	Part E	N/A ☐	N/C ☐	b. The anticipated type, annual quantity, and source of solid waste expressed in tons;
S ☑	Part E	N/A ☐	N/C ☐	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 ☑	Part E	N/A ☐	N/C ☐	d. The source and type of cover material used for the landfill;
S ☑	See Note #30	N/A ☐	N/C ☐	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
S ☑	See Note #31	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	F1	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)
S ☑	F2	N/A ☐	N/C ☐	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)

	LOCATION			
S ☐		N/A ☑	N/C ☐	1. Describe how the landfill shall be designed so the 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)
S ☐		N/A ☑	N/C ☐	2. Landfill liner requirements; (62-701.400(3), FAC)
S ☐		N/A ☑	N/C ☐	a. General construction requirements; (62-701.400(3)(a), FAC)
S ☐		N/A ☑	N/C ☐	(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 ☐		N/A ☑	N/C ☐	(2) Document foundation is adequate to prevent liner failure;
S ☐		N/A ☑	N/C ☐	(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;
S ☐		N/A ☑	N/C ☐	(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;
S ☐		N/A ☑	N/C ☐	(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate;

LOCATION			PART G CONTINUED
S ☐	_____	N/A ☑ N/C ☐	b. Composite liners; (62-701.400(3)(b), FAC)
S ☐	_____	N/A ☑ N/C ☐	(1) Upper geomembrane thickness and properties;
S ☐	_____	N/A ☑ N/C ☐	(2) Design leachate head for primary leachate collection and removal system (LCRS) including leachate recirculation if appropriate;
S ☐	_____	N/A ☑ N/C ☐	(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component;
S ☐	_____	N/A ☑ N/C ☐	c. Double liners; (62-701.400(3)(c), FAC)
S ☐	_____	N/A ☑ N/C ☐	(1) Upper and lower geomembrane thickness and properties;
S ☐	_____	N/A ☑ N/C ☐	(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
S ☐	_____	N/A ☑ N/C ☐	(3) Lower geomembrane sub-base design;
S ☐	_____	N/A ☑ N/C ☐	(4) Leak detection and secondary leachate collection system minimum design criteria (k ≥ 10 cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer);
S ☐	_____	N/A ☑ N/C ☐	d. Standards for geosynthetic components; (62-701.400(3)(d), FAC)
S ☐	_____	N/A ☑ N/C ☐	(1) Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;
S ☐	_____	N/A ☑ N/C ☐	(2) Geomembranes to be used shall pass a continuous spark test by the manufacturer;
S ☐	_____	N/A ☑ N/C ☐	(3) Design of 24-inch-thick protective layer above upper geomembrane liner;
S ☐	_____	N/A ☑ N/C ☐	(4) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above a 24-inch-thick protective layer;
S ☐	_____	N/A ☑ N/C ☐	(5) HDPE geomembranes, if used, meet the specifications in GRI GM13, and LLDPE geomembranes, if used, meet the specifications in GRI GM17;
S ☐	_____	N/A ☑ N/C ☐	(6) PVC geomembranes, if used, meet the specifications in PGI 1104;

S ☐ _____ N/A ☑ N/C ☐	(7)	Interface shear strength testing results of the actual components which will be used in the liner system;
S ☐ _____ N/A ☑ N/C ☐	(8)	Transmissivity testing results of geonets if they are used in the liner system;
S ☐ _____ N/A ☑ N/C ☐	(9)	Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;
S ☐ _____ N/A ☑ N/C ☐	e. Geosynthetic specification requirements; (62-701.400(3)(e), FAC)	
S ☐ _____ N/A ☑ N/C ☐	(1)	Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
S ☐ _____ N/A ☑ N/C ☐	(2)	Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;
S ☐ _____ N/A ☑ N/C ☐	(3)	Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and non-destructive seam testing, seam testing location, frequency, procedure, sample size, and geomembrane repairs;
S ☐ _____ N/A ☑ N/C ☐	(4)	Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembranes, and procedures for lining system acceptance;
S ☐ _____ N/A ☑ N/C ☐	(5)	Geotextile and geogrids specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;
S ☐ _____ N/A ☑ N/C ☐	(6)	Geonet and geocomposites specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;
S ☐ _____ N/A ☑ N/C ☐	(7)	Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;

LOCATION			PART G CONTINUED
S ☐	_____	N/A ☑ N/C ☐	f. Standards for soil liner components; (62-701.400(3)(f), FAC)
S ☐	_____	N/A ☑ N/C ☐	(1) Description of construction procedures including over-excavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil components in layers;
S ☐	_____	N/A ☑ N/C ☐	(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;
S ☐	_____	N/A ☑ N/C ☐	(3) Procedures for testing in situ soils to demonstrate they meet the specifications for soil liners;
S ☐	_____	N/A ☑ N/C ☐	(4) Specifications for soil component of liner including at a minimum:
S ☐	_____	N/A ☑ N/C ☐	(a) Allowable particle size distribution, and Atterberg limits including shrinkage limit;
S ☐	_____	N/A ☑ N/C ☐	(b) Placement moisture and dry density criteria;
S ☐	_____	N/A ☑ N/C ☐	(c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
S ☐	_____	N/A ☑ N/C ☐	(d) Minimum thickness of soil liner;
S ☐	_____	N/A ☑ N/C ☐	(e) Lift thickness;
S ☐	_____	N/A ☑ N/C ☐	(f) Surface preparation (scarification);
S ☐	_____	N/A ☑ N/C ☐	(g) Type and percentage of clay mineral within the soil component;
S ☐	_____	N/A ☑ N/C ☐	(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;
S ☐	_____	N/A ☑ N/C ☐	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;

LOCATION			PART G CONTINUED
S ☐	_____	N/A ☑ N/C ☐	3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC)
S ☐	_____	N/A ☑ N/C ☐	a. The primary and secondary LCRS requirements; (62-701.400(4)(a), FAC)
S ☐	_____	N/A ☑ N/C ☐	(1) Constructed of materials chemically resistant to the waste and leachate;
S ☐	_____	N/A ☑ N/C ☐	(2) Have sufficient mechanical properties to prevent collapse under pressure;
S ☐	_____	N/A ☑ N/C ☐	(3) Have granular material or synthetic geotextile to prevent clogging;
S ☐	_____	N/A ☑ N/C ☐	(4) Have a method for testing and cleaning clogged pipes or contingent designs for reducing leachate around failed areas;
S ☐	_____	N/A ☑ N/C ☐	b. Other LCRS requirements; (62-701.400(4)(b) and (c), FAC
S ☐	_____	N/A ☑ N/C ☐	(1) Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{3}$ cm/sec;
S ☐	_____	N/A ☑ N/C ☐	(2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
S ☐	_____	N/A ☑ N/C ☐	(3) Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements;
S ☐	_____	N/A ☑ N/C ☐	(4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load, and protection of geomembranes liner;
S ☐	_____	N/A ☑ N/C ☐	4. Leachate recirculation; (62-701.400(5), FAC)
S ☐	_____	N/A ☑ N/C ☐	a. Describe general procedures for recirculating leachate;
S ☐	_____	N/A ☑ N/C ☐	b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;
S ☐	_____	N/A ☑ N/C ☐	c. Describe procedures for preventing perched water conditions and gas buildup;

S ☐ _____ N/A ☑ N/C ☐ 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;

S ☐ _____ N/A ☑ N/C ☐ e. Describe methods of gas management in accordance with Rule 62-701.530, FAC;

S ☐ _____ N/A ☑ N/C ☐ 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;

S ☐ _____ N/A ☑ N/C ☐ 5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)

S ☐ _____ N/A ☑ N/C ☐ a. Surface impoundment requirements; (62-701.400(6)(b), FAC)

S ☐ _____ N/A ☑ N/C ☐ (1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;

S ☐ _____ N/A ☑ N/C ☐ (2) Designed in segments to allow for inspection and repair, as needed, without interruption of service;

S ☐ _____ N/A ☑ N/C ☐ (3) General design requirements;

S ☐ _____ N/A ☑ N/C ☐ (a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;

S ☐ _____ N/A ☑ N/C ☐ (b) Leak detection and collection system with hydraulic conductivity ≥ 1 cm/sec;

S ☐ _____ N/A ☑ N/C ☐ (c) Lower geomembrane place 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;

S ☐ _____ N/A ☑ N/C ☐ (d) Design calculation to predict potential leakage through the upper liner;

S ☐ _____ N/A ☑ N/C ☐ (e) Daily inspection requirements, and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;

S ☐ _____ N/A ☑ N/C ☐ (4) Description of procedures to prevent uplift, if applicable;

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

S ☐ _____ N/A ☑ N/C ☐	(1)	Describe materials of construction;
S ☐ _____ N/A ☑ N/C ☐	(2)	A double-walled tank design system to be used with the following requirements:
S ☐ _____ N/A ☑ N/C ☐	(a)	Interstitial space monitoring at least weekly;
S ☐ _____ N/A ☑ N/C ☐	(b)	Corrosion protection provided for primary tank interior and external surface of outer shell;
S ☐ _____ N/A ☑ N/C ☐	(c)	Interior tank coatings compatible with stored leachate;
S ☐ _____ N/A ☑ N/C ☐	(d)	Cathodic protection inspected weekly and repaired as needed;
S ☐ _____ N/A ☑ N/C ☐	(3)	Describe an overfill prevention system, such as level sensors, gauges, alarms, and shutoff controls to prevent overfilling, and provide for weekly inspections;
S ☐ _____ N/A ☑ N/C ☐	(4)	Inspection reports available for Department review;
S ☐ _____ N/A ☑ N/C ☐	d. Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e), FAC)	
S ☐ _____ N/A ☑ N/C ☐	6. Liner systems construction quality assurance (CQA); (62-701.400(7), FAC)	
S ☐ _____ N/A ☑ N/C ☐	a. Provide CQA Plan including:	
S ☐ _____ N/A ☑ N/C ☐	(1)	Specifications and construction requirements for liner system;
S ☐ _____ N/A ☑ N/C ☐	(2)	Detailed description of quality control testing procedures and frequencies;
S ☐ _____ N/A ☑ N/C ☐	(3)	Identification of supervising professional engineer;
S ☐ _____ N/A ☑ N/C ☐	(4)	Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
S ☐ _____ N/A ☑ N/C ☐	(5)	State qualifications of CQA professional engineer and support personnel;

LOCATION				
S ☐	_____	N/A ☑	N/C ☐	(6) Description of CQA reporting forms and documents;
S ☐	_____	N/A ☑	N/C ☐	b. An independent laboratory experienced in the testing of geosynthetics to perform required testing;
S ☐	_____	N/A ☑	N/C ☐	7. Soil liner CQA; (62-701.400(8), FAC)
S ☐	_____	N/A ☑	N/C ☐	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;
S ☐	_____	N/A ☑	N/C ☐	b. Description of field test section construction and test methods to be implemented prior to liner installation;
S ☐	_____	N/A ☑	N/C ☐	c. Description of field test methods, including rejection criteria and corrective measures to insure proper liner installation;
S ☐	_____	N/A ☑	N/C ☐	8. For surface water management systems at aboveground disposal units, provide documentation showing the design of any features intended to convey stormwater to a permitted or exempted treatment system; (62-701.400(9), FAC)
S ☐	_____	N/A ☑	N/C ☐	9. Gas control systems; (62-701.400(10), FAC)
S ☐	_____	N/A ☑	N/C ☐	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;
S ☐	_____	N/A ☑	N/C ☐	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)

LOCATION				
S ☐	See Note #32	N/A ☐	N/C ☑	1. Submit a hydrogeological investigation and site report including at least the following information:
S ☐	See Note #32	N/A ☐	N/C ☑	a. Regional and site specific geology and hydrology;
S ☐	See Note #32	N/A ☐	N/C ☑	b. Direction and rate of ground water and surface water flow including seasonal variations;

LOCATION **PART H CONTINUED**

S ☐	See Note #32	N/A ☐	N/C ☑	c. Background quality of ground water and surface water;
S ☐	See Note #32	N/A ☐	N/C ☑	d. Any on-site hydraulic connections between aquifers;
S ☐	See Note #32	N/A ☐	N/C ☑	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;
S ☐	See Note #32	N/A ☐	N/C ☑	f. Description of topography, soil types, and surface water drainage systems;
S ☑	See Note #33	N/A ☐	N/C ☐	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;
S ☐	See Note #32	N/A ☐	N/C ☑	h. Identify and locate any existing contaminated areas on the site;
S ☐	See Note #32	N/A ☐	N/C ☑	i. Include a map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas;
S ☐	See Note #32	N/A ☐	N/C ☑	2. Report signed, sealed, and dated by P.E. and/or P.G.;

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

LOCATION

S ☐	See Note #34	N/A ☐	N/C ☑	1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
S ☐	See Note #34	N/A ☐	N/C ☑	a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
S ☐	See Note #34	N/A ☐	N/C ☑	b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments, and sink holes;
S ☐	See Note #34	N/A ☐	N/C ☑	c. Estimates of average and maximum high water table across the site;
S ☐	See Note #34	N/A ☐	N/C ☑	d. Foundation analysis including:
S ☐	See Note #34	N/A ☐	N/C ☑	(1) Foundation bearing capacity analysis;

LOCATION			
S ☐	See Note #34	N/A ☐ N/C ☑	(2) Total and differential subgrade settlement analysis;
S ☐	See Note #34	N/A ☐ N/C ☑	(3) Slope stability analysis;
S ☐	See Note #34	N/A ☐ N/C ☑	e. Description of methods used in the investigation, and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations, and conclusions;
S ☐	Part I 1.f.	N/A ☐ N/C ☑	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;
S ☐	See Note #34	N/A ☐ N/C ☑	2. Report signed, sealed, and dated by P.E. and/or P.G.;

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

LOCATION			
S ☐		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;
S ☐		N/A ☑ N/C ☐	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;
S ☐		N/A ☑ N/C ☐	3. Provide foundation and settlement analysis for the vertical expansion;
S ☐		N/A ☑ N/C ☐	4. Provide total settlement calculations demonstrating that the final elevations of the lining system, gravity drainage, and no other component of the design will be adversely affected;
S ☐		N/A ☑ N/C ☐	5. Minimum stability factor of safety of 1.5 for the lining system component interface stability and for deep stability;
S ☐		N/A ☑ N/C ☐	6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
S ☐		N/A ☑ N/C ☐	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)

	LOCATION			
S ☑	K-1	N/A ☐	N/C ☐	1. Provide documentation that the 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)
S ☑	K-2	N/A ☐	N/C ☐	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
S ☑	K2a	N/A ☐	N/C ☐	a. Designating responsible operating and maintenance personnel;
S ☑	K2b	N/A ☐	N/C ☐	b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;
S ☑	K2c	N/A ☐	N/C ☐	c. Controlling types of waste received at the landfill;
S ☑	K2d	N/A ☐	N/C ☐	d. Weighing incoming waste;
S ☑	K2e	N/A ☐	N/C ☐	e. Vehicle traffic control and unloading;
S ☑	K2f	N/A ☐	N/C ☐	f. Method and sequence of filling waste;
S ☑	K2g	N/A ☐	N/C ☐	g. Waste compaction and application of cover;
S ☑	K2h	N/A ☐	N/C ☐	h. Operations of gas, leachate, and stormwater controls;
S ☑	K2i	N/A ☐	N/C ☐	i. Water quality monitoring;
S ☑	K2j	N/A ☐	N/C ☐	j. Maintaining and cleaning the leachate collection system;
S ☑	K3	N/A ☐	N/C ☐	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. DEP permit, engineering drawings, water quality records, etc.); (62-701.500(3), FAC)
S ☑	K4	N/A ☐	N/C ☐	4. Describe the waste records that will be compiled monthly and provided to the Department annually; (62-701.500(4), FAC)
S ☑	K5	N/A ☐	N/C ☐	5. Describe methods of access control; (62-701.500(5), FAC)
S ☑	K6	N/A ☐	N/C ☐	6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized waste at the landfill; (62-701.500(6), FAC)

	LOCATION			
S ☑	K7	N/A ☐	N/C ☐	7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), FAC)
S ☑	K7a	N/A ☐	N/C ☐	a. Waste layer thickness and compaction frequencies;
S ☑	K7b	N/A ☐	N/C ☐	b. Special considerations for first layer of waste placed above the liner and leachate collection system;
S ☑	K7c	N/A ☐	N/C ☐	c. Slopes of cell working face and side grades above land surface, and planned lift depths during operation;
S ☑	K7d	N/A ☐	N/C ☐	d. Maximum width of working face;
S ☑	K7e	N/A ☐	N/C ☐	e. Description of type of initial cover to be used at the facility that controls:
S ☑	K7e	N/A ☐	N/C ☐	(1) Vector breeding/animal attraction;
S ☑	K7e	N/A ☐	N/C ☐	(2) Fires;
S ☑	K7e	N/A ☐	N/C ☐	(3) Odors;
S ☑	K7e	N/A ☐	N/C ☐	(4) Blowing litter;
S ☑	K7e	N/A ☐	N/C ☐	(5) Moisture infiltration;
S ☑	K7f	N/A ☐	N/C ☐	f. Procedures for applying initial cover, including minimum cover frequencies;
S ☑	K7g	N/A ☐	N/C ☐	g. Procedures for applying intermediate cover;
S ☑	K7h	N/A ☐	N/C ☐	h. Time frames for applying final cover;
S ☑	K7i	N/A ☐	N/C ☐	i. Procedures for controlling scavenging and salvaging;
S ☑	K7j	N/A ☐	N/C ☐	j. Description of litter policing methods;
S ☑	K7k	N/A ☐	N/C ☐	k. Erosion control procedures;

LOCATION			PART K CONTINUED
S ☑	K8	N/A ☐ N/C ☐	8. Describe operational procedures for leachate management including: (62-701.500(8), FAC)
S ☑	K8a	N/A ☐ N/C ☐	a. Leachate level monitoring;
S ☑	K8b	N/A ☐ N/C ☐	b. Operation and maintenance of leachate collection and removal system, and treatment as required;
S ☑	K8c	N/A ☐ N/C ☐	c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
S ☑	K8d	N/A ☐ N/C ☐	d. Identification of treatment or disposal facilities that may be used for off-site discharge and treatment of leachate;
S ☑	K8e	N/A ☐ N/C ☐	e. Contingency plan for managing leachate during emergencies or equipment problems;
S ☑	K8f	N/A ☐ N/C ☐	f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;
S ☑	K8g	N/A ☐ N/C ☐	g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;
S ☑	K8h	N/A ☐ N/C ☐	h. Procedures for water pressure cleaning or video inspecting leachate collection systems;
S ☑	K9	N/A ☐ N/C ☐	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)
S ☑	K10	N/A ☐ N/C ☐	10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9), FAC; (62-701.500(10), FAC)
S ☑	K11	N/A ☐ N/C ☐	11. Equipment and operation feature requirements; (62-701.500(11), FAC)
S ☑	K11a	N/A ☐ N/C ☐	a. Sufficient equipment for excavating, spreading, compacting, and covering waste;
S ☑	K11b	N/A ☐ N/C ☐	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
S ☑	K11c	N/A ☐ N/C ☐	c. Communications equipment;

LOCATION			
S ☑	K11d	N/A ☐ N/C ☐	d. Dust control methods;
S ☑	K11e	N/A ☐ N/C ☐	e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
S ☑	K11f	N/A ☐ N/C ☐	f. Litter control devices;
S ☑	K11g	N/A ☐ N/C ☐	g. Signs indicating operating authority, traffic flow, hours of operation, and disposal restrictions;
S ☑	K12	N/A ☐ N/C ☐	12. Provide a description of all-weather access road, inside perimeter road, and other on-site roads necessary for access at the landfill; (62-701.500(12), FAC)
S ☑	K13	N/A ☐ N/C ☐	13. Additional record keeping and reporting requirements; (62-701.500(13), FAC)
S ☑	K13a	N/A ☐ N/C ☐	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
S ☑	K13b	N/A ☐ N/C ☐	b. Monitoring information, calibration and maintenance records, and copies of reports required by permit maintained for at least 10 years;
S ☑	K13c	N/A ☐ N/C ☐	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;
S ☑	K13d	N/A ☐ N/C ☐	d. Procedures for archiving and retrieving records which are more than five years old;

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

LOCATION			
S ☑	L	N/A ☐ N/C ☐	1. A water quality monitoring plan shall be submitted describing the proposed ground water and surface water monitoring systems, and shall meet at least the following requirements:
S ☑	L1a	N/A ☐ N/C ☐	a. Based on the information obtained in the hydrogeological investigation and signed, dated, and sealed by the P.G. or P.E. who prepared it; (62-701.510(2)(a), FAC)

LOCATION				PART L CONTINUED
S ☑	L1b	N/A ☐	N/C ☐	b. All sampling and analysis performed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b), FAC)
S ☑	L1c	N/A ☐	N/C ☐	c. Ground water monitoring requirements; (62-701.510(3), FAC)
S ☑	L1c	N/A ☐	N/C ☐	(1) Detection wells located downgradient from and within 50 feet of disposal units;
S ☑	L1c	N/A ☐	N/C ☐	(2) Downgradient compliance wells as required;
S ☑	L1c	N/A ☐	N/C ☐	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
S ☑	L1c	N/A ☐	N/C ☐	(4) Location information for each monitoring well;
S ☑	L1c	N/A ☐	N/C ☐	(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;
S ☑	L1c	N/A ☐	N/C ☐	(6) Properly selected well screen locations;
S ☑	L1c	N/A ☐	N/C ☐	(7) Monitoring wells constructed to provide representative ground water samples;
S ☑	L1c	N/A ☐	N/C ☐	(8) Procedures for properly abandoning monitoring wells;
S ☐		N/A ☐	N/C ☑	(9) Detailed description of detection sensors, if proposed;
S ☑	L1d	N/A ☐	N/C ☐	d. Surface water monitoring requirements; (62-701.510(4), FAC)
S ☑	L1d	N/A ☐	N/C ☐	(1) Location of and justification for all proposed surface water monitoring points;
S ☑	L1d	N/A ☐	N/C ☐	(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
S ☑	L1e	N/A ☐	N/C ☐	e. Initial and routine sampling frequency and requirements; (62-701.510(5), FAC)
S ☑	L1e	N/A ☐	N/C ☐	(1) Initial background ground water and surface water sampling and analysis requirements;

LOCATION			PART L CONTINUED
S ☑	L1e	N/A ☐ N/C ☐	(2) Routine monitoring well sampling and analysis requirements;
S ☑	L1e	N/A ☐ N/C ☐	(3) Routine surface water sampling and analysis requirements;
S ☑	L1f	N/A ☐ N/C ☐	f. Describe procedures for implementing evaluation monitoring, prevention measures, and corrective action as required; (62-701.510(6), FAC)
S ☑	L1g	N/A ☐ N/C ☐	g. Water quality monitoring report requirements; (62-701.510(8), FAC)
S ☑	L1g	N/A ☐ N/C ☐	(1) Semi-annual report requirements; (see paragraphs 62-701.510(5)(c) and (d), FAC for sampling frequencies)
S ☑	L1g	N/A ☐ N/C ☐	(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;
S ☑	L1g	N/A ☐ N/C ☐	(3) Two and one-half year report requirements, or every five years if in long-term care, signed dated, and sealed by P.G. or P.E.;

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

	LOCATION		
S ☑	K14.a	N/A ☐ N/C ☐	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
S ☑	K14.b	N/A ☐ N/C ☐	2. Describe procedures for landfilling shredded waste; (62-701.520(2), FAC)
S ☑	K14.c	N/A ☐ N/C ☐	3. Describe procedures for asbestos waste disposal; (62-701.520(3), FAC)
S ☑	K14.d	N/A ☐ N/C ☐	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
S ☑	K14.e	N/A ☐ N/C ☐	5. Describe procedures for disposal of biological wastes; (62-701.520(5), FAC)

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

	LOCATION			
S ☑	N1	N/A ☐	N/C ☐	1. Provide documentation for a gas management system that will: (62-701.530(1), FAC)
S ☑	N1a	N/A ☐	N/C ☐	a. Be designed to prevent concentrations of combustible gases from exceeding 25% the LEL in structures and 100% the LEL at the property boundary;
S ☑	N1b	N/A ☐	N/C ☐	b. Be designed for site specific conditions;
S ☑	N1c	N/A ☐	N/C ☐	c. Be designed to reduce gas pressure in the interior of the landfill;
S ☑	N1d	N/A ☐	N/C ☐	d. Be designed to not interfere with the liner, leachate control system, or final cover;
S ☑	N2	N/A ☐	N/C ☐	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)
S ☑	N3	N/A ☐	N/C ☐	3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC)
S ☑	N4	N/A ☐	N/C ☐	4. Landfill gas recovery facilities; (62-701.530(5), FAC)
S ☑	N4a	N/A ☐	N/C ☐	a. Provide information required in Rules 62-701.320(7) and 62-701.330(3), FAC;
S ☑	N4b	N/A ☐	N/C ☐	b. Provide information required in Rule 62-701.600(4), FAC, where relevant and practical;
S ☑	N4c	N/A ☐	N/C ☐	c. Provide estimates of current and expected gas generation rates and description of condensate disposal methods;
S ☑	N4d	N/A ☐	N/C ☐	d. Provide description of procedures for condensate sampling, analyzing, and data reporting;
S ☑	N4e	N/A ☐	N/C ☐	e. Provide closure plan describing methods to control gas after recovery facility ceases operation, and any other requirements contained in Rule 62-701.400(10), FAC;

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

	LOCATION			
S ☑	O1	N/A ☐	N/C ☐	1. Closure permit requirements; (62-701.600(2), FAC)
S ☑	O1a	N/A ☐	N/C ☐	a. Application submitted to the Department at least 90 days prior to final receipt of wastes;
S ☑	O1b	N/A ☐	N/C ☐	b. Closure plan shall include the following:
S ☑	O1b	N/A ☐	N/C ☐	(1) Closure design plan;
S ☑	O1b	N/A ☐	N/C ☐	(2) Closure operation plan;
S ☑	O1b	N/A ☐	N/C ☐	(3) Plan for long-term care;
S ☑	O1b	N/A ☐	N/C ☐	(4) A demonstration that proof of financial assurance for long-term care will be provided;
S ☑	O2	N/A ☐	N/C ☐	2. Closure design plan including the following requirements: (62-701.600(3), FAC)
S ☑	O2a	N/A ☐	N/C ☐	a. Plan sheet showing phases of site closing;
S ☑	O2b	N/A ☐	N/C ☐	b. Drawings showing existing topography and proposed final grades;
S ☑	O2c	N/A ☐	N/C ☐	c. Provisions to close units when they reach approved design dimensions;
S ☑	O2d	N/A ☐	N/C ☐	d. Final elevations before settlement;
S ☑	O2e	N/A ☐	N/C ☐	e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters, and description of expected precipitation effects;
S ☑	O2f	N/A ☐	N/C ☐	f. Final cover installation plans including:
S ☑	O2f	N/A ☐	N/C ☐	(1) CQA plan for installing and testing final cover;
S ☑	O2f	N/A ☐	N/C ☐	(2) Schedule for installing final cover after final receipt of waste;
S ☑	O2f	N/A ☐	N/C ☐	(3) Description of drought resistant species to be used in the vegetative cover;

	LOCATION			
S ☑	O2f	N/A ☐	N/C ☐	(4) Top gradient design to maximize runoff and minimize erosion;
S ☑	O2f	N/A ☐	N/C ☐	(5) Provisions for cover material to be used for final cover maintenance;
S ☑	O2g	N/A ☐	N/C ☐	g. Final cover design requirements;
S ☑	O2g	N/A ☐	N/C ☐	(1) Protective soil layer design;
S ☑	O2g	N/A ☐	N/C ☐	(2) Barrier soil layer design;
S ☑	O2g	N/A ☐	N/C ☐	(3) Erosion control vegetation;
S ☑	O2g	N/A ☐	N/C ☐	(4) Geomembrane barrier layer design;
S ☐		N/A ☑	N/C ☐	(5) Geosynthetic clay liner design, if used;
S ☑	O2g	N/A ☐	N/C ☐	(6) Stability analysis of the cover system and the disposed waste;
S ☑	O2h	N/A ☐	N/C ☐	h. Proposed method of stormwater control;
S ☑	O2i	N/A ☐	N/C ☐	i. Proposed method of access control;
S ☑	O2j	N/A ☐	N/C ☐	j. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC;
S ☑	O3	N/A ☐	N/C ☐	3. Closure operation plan shall include: (62-701.600(4), FAC)
S ☑	O3a	N/A ☐	N/C ☐	a. Detailed description of actions which will be taken to close the landfill;
S ☑	O3b	N/A ☐	N/C ☐	b. Time schedule for completion of closing and long-term care;
S ☑	O3c	N/A ☐	N/C ☐	c. Describe proposed method for demonstrating financial assurance for long-term care;
S ☑	O3d	N/A ☐	N/C ☐	d. Operation of the water quality monitoring plan required in Rule 62-701.510, FAC;
S ☑	O3e	N/A ☐	N/C ☐	e. Development and implementation of gas management system required in Rule 62-701.530, FAC;

PART O CONTINUED

	LOCATION			
S ☑	O4	N/A ☐	N/C ☐	4. Certification of closure construction completion including: (62-701.600(6), FAC)
S ☑	O4a	N/A ☐	N/C ☐	a. Survey monuments; (62-701.600(6)(a), FAC)
S ☑	O4b	N/A ☐	N/C ☐	b. Final survey report; (62-701.600(6)(b), FAC)
S ☑	O5	N/A ☐	N/C ☐	5. Declaration to the public; (62-701.600(7), FAC)
S ☑	O6	N/A ☐	N/C ☐	6. Official date of closing; (62-701.600(8), FAC)
S ☑	O7	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	P1	N/A ☐	N/C ☐	1. Describe how the requirements for use of closed solid waste disposal areas will be achieved; (62-701.610(1), FAC)
S ☑	P2	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	Q1	N/A ☐	N/C ☐	1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)
S ☑	Q2	N/A ☐	N/C ☐	2. Stabilization report requirements; (62-701.620(6), FAC)
S ☑	Q3	N/A ☐	N/C ☐	3. Right of access; (62-701.620(7), FAC)
S ☑	Q4	N/A ☐	N/C ☐	4. Requirements for replacement of monitoring devices; (62-701.620(8), FAC)
S ☑	Q5	N/A ☐	N/C ☐	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)

	LOCATION			
S ☑	R1	N/A ☐	N/C ☐	1. Provide cost estimates for closing, long-term care, and corrective action costs estimated by a P.E. for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3) & (7), FAC)
S ☑	R2	N/A ☐	N/C ☐	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)
S ☑	R3	N/A ☐	N/C ☐	3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms. (62-701.630(5), (6), & (9), FAC)

PART S. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Manatee County Government-Utilities Dept. _____ is aware that statements made in this form and attached information are an application for a renewal of 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

4410 66th Street West
Mailing Address

Mike Gore, Director
Name and Title (please type)

Bradenton, FL 34210
City, State, Zip Code

mike.gore@mymantee.org
E-Mail Address (if available)

(941) 792-8811
Telephone Number

Date: _____

Attach letter of authorization if agent is not a government 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.

Signature

John A. Banks, Jr., P.E., Technical Director of SW Svcs
Name and Title (please type)

JOHN A. BANKS, JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

Florida Registration Number (please affix seal)

100 Paramount Drive, Suite 207
Mailing Address

Sarasota, FL 34232
City, State, Zip Code

john.banks@atkinsglobal.com
E-Mail Address (if available)

(941) 225-4825
Telephone Number

Date: _____

REFERENCE NOTES

Note #	Location
PART D – SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL (62-701.320, FAC)	
1	Page 40 of Application and Cover
2	See cover letter after inside title page
3	Page 40 of Application
4	Submitted with Application - $10,000
5	Parts A through R of this application are the Engineering Report
6	Part K Operation Plan and Part O Closure Plan
7	See Fill Sequence Plan Drawings from 2016 to 2036
8	See Figure D-1
9	See Fill Sequence Plan Drawing C-2 in Appendix B
10	"Boundary Survey" included in Tab D of 2010 Application
11	See Fill Sequence Plan Drawings from 2016 to 2036. Appendix B
12	Previously provided to FDEP
PART E – LANDFILL PERMIT REQUIREMENTS (62-701.220, FAC)	
13	See Fill Sequence Plan Drawings, Appendix B
14	See Fill Sequence Plan Drawing C-2
15	See Drawings in Attachment L-1 – Water Quality Monitoring Plan
16	Previously provided in Reports referenced in Parts H and I
17	See Fill Sequence Plan Drawings C-2 to C-10
18	See Fill Sequence Plan Drawings C-11 & C-12
19	See Fill Sequence Plan Drawings C-2, C-3 & C-4
20	There is an existing fence along property boundary
21	See Fill Sequence Plan Drawings for 2016 to 2036, Appendix B
22	See Fill Sequence Plan Drawing C-2
23	See Cover (Borrow) Material Stockpile on Drawing C-2
24	See Fill Sequence Plan Drawings C-2 to C-10
25	See Fill Sequence Plan Drawings C-5 to C-10
26	See Fill Sequence Plan Drawings C-11, C-12, & C-13
27	See Fill Sequence Plan Drawing C-13
28	There is an existing perimeter fence
29	See Fill Sequence Plan Drawing C-2
30	See Attachment L-1, Water Quality Monitoring Plan
31	Manatee County uses the Financial Test Method
PART H – HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410 (1), FAC)	
32	See references to previously submitted reports listed in Part H
33	See Attachment H-1, Well Data Report by EDM dated July 16, 2015
PART I – GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.410 (2), FAC)	
34	See referenced reports in Part I

PART B

DISPOSAL FACILITY GENERAL INFORMATION – SEE PART B OF APPLICATION IN PART A – NO ADDITIONAL INFORMATION

PART C. PROHIBITIONS (62-701.300, FAC)

C 1 General Siting Criteria

The following Siting Criteria applies to the Lean Road Class I Landfill which includes all three stages defined as the Stage I Landfill, Stage II Landfill and Stage III Landfill.

(a) The Lena Road Landfill is located in an area where the geological formations or other subsurface features provide support for the solid waste. This is documented in Part H – Hydrogeological Investigation Requirements, and Part I – Geotechnical Investigation Requirements. There are no potable water wells within 500-feet of the landfill. The landfill is served by a public water supply. This is documented in Part H Hydrogeological Investigation Requirements which contain the well inventory when the landfill construction permit was issued and an updated inventory as of July 2015. Since this is an existing facility constructed prior to 1994, the facility is not subject to this prohibition per 62-701.300 (18) (18) Existing facilities as explained in C-2 below.

(b) No waste is being placed in a dewatered pit.

(c) The landfill is not subject to frequent and periodic flooding. The landfill lies outside the 100-year floodplain. See the flood map included in Part F General Criteria for Landfills. Storm water is being managed per the permit. See the Part K Operation Plan – Section 10 Storm Water Management for description of the storm water management plan.

(d) No solid waste is being placed in any natural or artificial bodies of water including ground water.

(e) There are bodies of water within 200-feet of the landfill, but the bodies of water are contained completely within the property boundaries of the disposal facility as shown on the aerial photograph on Drawing C-2 of the Fill Sequence Plan from 2015 to 2035. In addition, the landfill has permanent leachate control methods that result in compliance with the water quality standards and criteria.

(f) No solid waste is stored on the right of way of any public highway, road or alley. The limits of the solid waste disposed of in the landfill are shown on Drawing C-2 of the Fill Sequence Plan from 2015 to 2035.

C-2 Exemptions

Since the Lena Road Class I Landfill, including all three stages, was constructed prior to 1992, the Lena Road Class I Landfill qualifies for the exemption in 62-701.300 (18) for existing facilities which states:

"(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."

C-3 Burning Restrictions

Burning of solid waste is prohibited at the Lena Road Class I Landfill.

C-4 Hazardous Waste Restriction

Hazardous waste is prohibited from disposal in the Lena Road Class I Landfill.

C-5 PCB Disposal Restrictions

Disposal of liquids containing polychlorinated biphenyl (PCB) or non-liquid PCBs in the form of contaminated soil, rags, or other debris is prohibited from disposal in the Lena Road Class I Landfill.

C-6 Biomedical Waste Restrictions

Disposal of biomedical waste is prohibited from disposal in the Lena Road Class I Landfill.

C-7 Class I Surface Water Restrictions

No Class I surface Waters are located within 3,000 feet.

C-8 Special Waste for Landfills Restrictions

The follows types of waste are prohibited from disposal in the landfill:

a. Lead-acid batteries
b. Used oil, except as provided in Chapter 62-710, F.A.C.
c. White goods
d. Whole tires, except as provided in Chapter 62-711, F.A.C.

Special Waste for Waste-to-Energy Facilities – This facility is not a waste-to-energy facility. Ash from waste-to-energy facilities is prohibited.

C-9 Liquid Restrictions

Non-containerized liquid waste shall not be placed in the landfill except if the waste is household waste other than septic waste, or the waste is leachate or gas condensate derived from the landfill. Containers holding liquid waste shall not be placed in a solid waste disposal unit unless:

- The container is a small container similar in size to that normally found in household waste.
- The container is designed to hold liquids for use other than storage.

- The waste is household waste.
- 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.

C-10 Used Oil Restrictions

Used oil and solid waste purposely contaminated with used oil is prohibited from disposal in the landfill except for 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.

PART D: SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS (62-701.302, FAC)

D 9. Plans or Drawings for the Solid Waste Management Facility

The drawings for the Lena Road Class I Landfill are shown on the Fill Sequence Plan from 2016 to 2036 dated July 2015. There are 14 drawings that are 24" by 36". Reduced size prints (11" x 17") are provided in Appendix B in this binder. The full sized drawings are provided electronically.

D 9.a. Regional Map

A regional map showing the project location in relation to major roadways and population centers is provided on Figure D-1.

D 9.b. Aerial Photograph

An aerial photograph taken on March 4, 2015 is included on the Sheet C-2 of the Fill Sequence Plan drawings. This photograph is less than one year old. The photograph shows the facility site and relevant surface features located within 1000 feet of the facility.

Also included in the Fill Sequence Plan drawings (Sheet C-3) is the topographic survey developed from the aerial photograph taken on March 4, 2015. This topographic map is the base map for the plan drawings in the Fill Sequence Plan drawing. As requested by the Department, this topographic map is signed and sealed by the surveyor who was responsible for taking the aerial photograph and developing the topographic survey.

D 9.c. Boundary Survey

A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor was submitted with the original permit application. A copy of the survey is included in Part D of the 2010 operations permit application for this facility.

D 10. Documentation that Manatee County Owns the Property

The documentation that Manatee County owns the property is on file with the Department in the previous permit application. Manatee County still owns the property.

D 11. Waste Reduction and Recycling Goals

At the Manatee County Lena Road Class I Landfill there are designated areas for waste diverted from the landfill. These areas include the Waste Tire Facility, White Goods / Scrap Metal Facility, Yard Waste Facility and Household Hazardous Waste Drop-off Facility. These facilities 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).

D 12 History of Enforcement Actions Taken by the Department

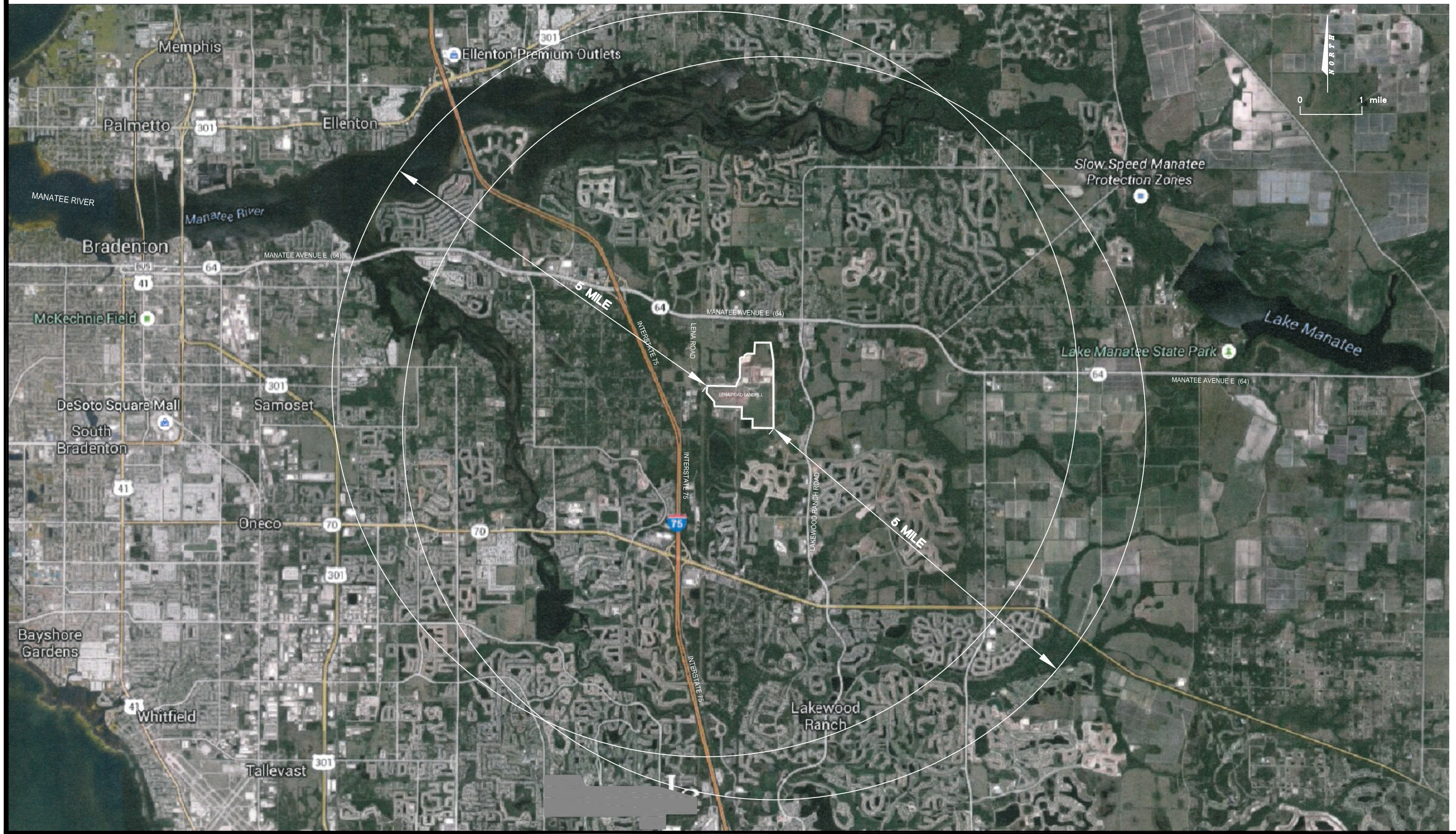
The Department has taken no enforcement actions against this Facility since the last permit renewal or in the last ten years.

D 13 Proof of Publication

A copy of the proof of publication is included as Attachment D-1.

D 14 Airport Safety

The Tampa/Orlando Terminal Area Chart is incorporated into Figure E-1. The location of the Lena Road Class I Landfill was added to the chart along with a 5 mile radius circle. The Chart shows no airports within 5 miles of the Facility. Since this is an existing landfill and no lateral expansions are requested, and the facility is beyond five miles from an airport, the Facility complies with 62-701.320(13), FAC.



ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

REGIONAL MAP
WITH 5 MILE RADIUS FROM LANDFILL

FIGURE
D-1

U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\mlr_FIG_D-1_5 Mile Radius.dwg Aug28,2015 - 2:39pm Plotted By: cast2327

ATTACHMENT D-1

PART E: ENGINEERING REPORT (62-701.330(3)(d), FAC)

E 4 a. Current and Projected Population to be Served

According to the State of Florida Department of Economic and Business Research, the current population of Manatee County is 345,734 and the projected population in 2020 is 377,335. See Attachment E-1. The Lena Road landfills provide for all Class I solid waste disposal in all of Manatee County including all municipalities.

E 4.b. Expected Types and Quantities of Waste

The Lena Road Landfill receives approximately 1,280 tons per day of mixed municipal solid waste. Approximately 950 tons per day are disposed in the landfill and the remaining amounts are diverted or recycled.

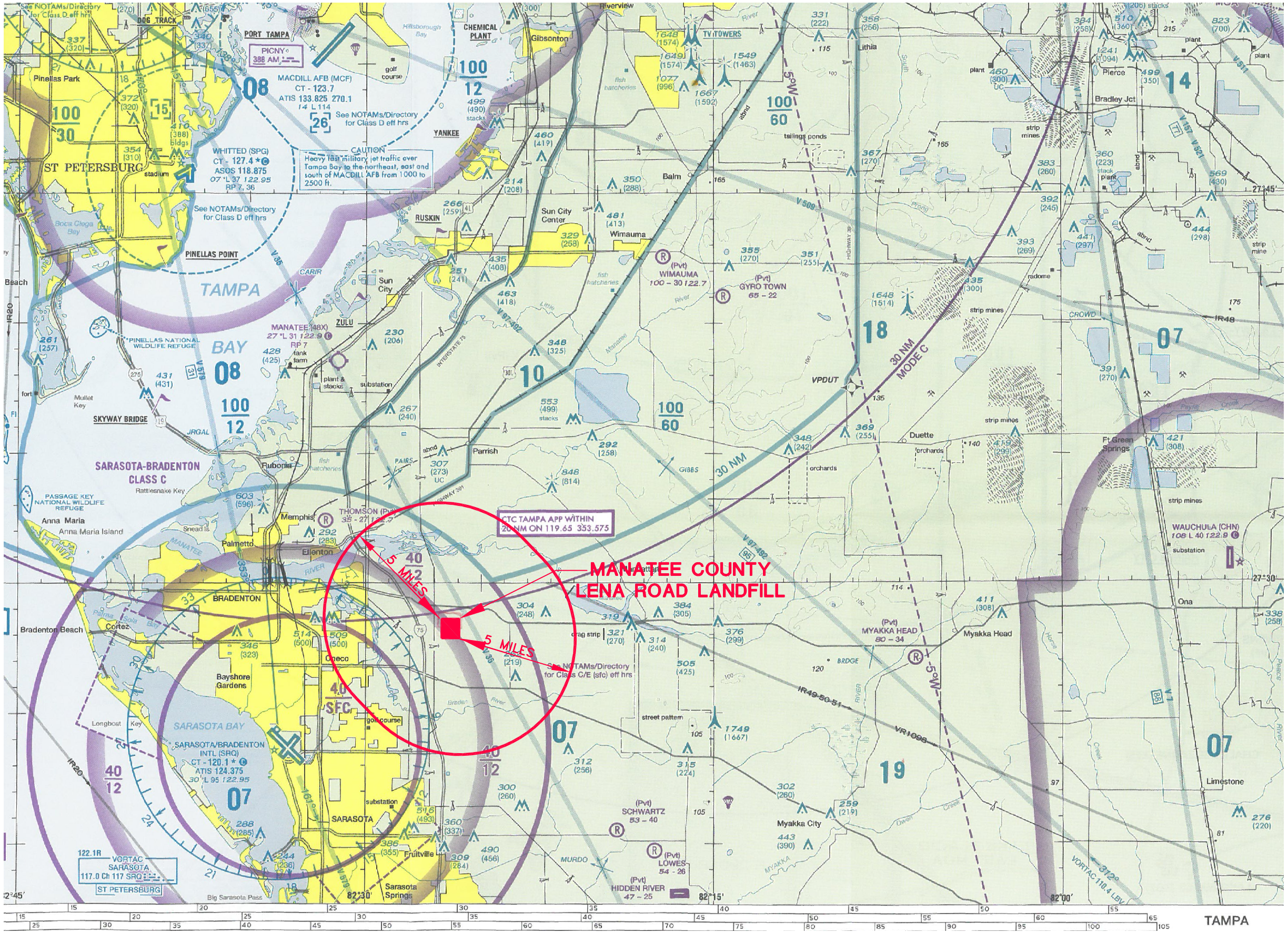
E 4.c. Planned Active Life

An aerial photograph taken on March 4, 2015 is included on the cover sheet of the Drawings. From this photograph and topographic map is created. An annual report is prepared which compares the new topographic map to previous maps to determine the volume of landfill airspace consumed. The new map is also compared to the final build out plan to estimate the volumes for the remaining site life. This report is based on the rate of landfill airspace consumed. Thus the analysis takes into account such variables as landfill density, initial compaction density, changes to the waste stream including material types and amounts.

Attachment E-2 provides the 2015 landfill capacity report which indicates the facility has a remaining life to 2046.

E 4.d. Source and Type of Cover Material

The County has an open purchase order to buy cover soil as needed to supplement the on-site stockpiles. The County typically maintains a stockpile of one year of cover soil needs. Other sources of cover material include County construction projects. Most all soils found in Manatee County are sandy loam soils and are suitable for use as landfill cover. To minimize soil usage, Manatee County has purchased mechanically installed tarp-type alternate daily cover system (ADC).



NORTH

0 5

SCALE: (STATUTE MILES)

Map Source:
Federal Aviation Administration
Tampa/Orlando VFR Terminal Area Chart
50th Edition Effective 5 February 2015

ATKINS	MANATEE COUNTY - LENA ROAD LANDFILL OPERATIONS PERMIT RENEWAL 2015	TERMINAL AREA CHART (TAC)	FIGURE E-1

U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\mlr_FIG_E-1_Terminal Area Chart.dwg Aug28,2015 - 2:31pm Plotted By: cost2327

ATTACHMENT E-1

Projections of Florida Population by County, 2015-2040, with Estimates for 2014

County and State	Estimates April 1, 2014	Projections, April 1					
		2015	2020	2025	2030	2035	2040
Lee	653,485	670,419	758,272	845,908	928,622	1,003,956	1,073,866
Leon	281,292	284,088	298,269	311,239	323,805	335,780	346,393
Levy	40,473	40,763	43,041	45,161	47,075	48,740	50,212
Liberty	8,668	8,715	9,208	9,681	10,132	10,577	10,971
Madison	19,303	19,315	19,487	19,652	19,739	19,761	19,850
Manatee	339,545	345,734	377,335	406,879	434,327	460,707	484,984
Marion	337,455	341,591	373,809	405,002	434,725	463,073	488,058
Martin	148,585	149,806	157,339	164,261	170,213	175,376	179,817
Miami-Dade	2,613,692	2,643,826	2,796,775	2,944,420	3,090,216	3,220,718	3,343,739
Monroe	74,044	74,101	74,387	74,665	74,935	75,199	75,454
Nassau	75,321	76,800	84,415	91,866	99,115	105,721	111,622
Okaloosa	190,666	192,336	200,631	207,716	213,951	219,532	225,363
Okeechobee	39,828	40,029	41,132	41,989	42,620	43,150	43,637
Orange	1,227,995	1,257,393	1,408,052	1,545,578	1,669,667	1,779,733	1,876,748
Osceola	295,553	305,980	361,095	414,560	463,174	507,944	550,087
Palm Beach	1,360,238	1,377,325	1,463,928	1,543,212	1,615,147	1,678,656	1,736,534
Pasco	479,340	489,693	543,038	595,361	645,371	692,278	733,885
Pinellas	933,258	941,195	948,798	956,577	964,092	971,455	978,541
Polk	623,174	634,555	693,095	750,240	805,761	856,073	901,077
Putnam	72,523	72,610	73,056	73,462	73,829	74,155	74,442
Saint Johns	207,443	214,752	253,430	290,874	325,021	356,499	386,139
Saint Lucie	282,821	286,216	323,184	359,807	394,623	426,133	455,371
Santa Rosa	159,785	163,306	178,297	192,323	205,334	217,421	229,257
Sarasota	387,140	390,490	412,873	433,621	452,848	469,462	484,253
Seminole	437,086	442,772	471,638	498,142	522,261	543,127	562,260
Sumter	111,125	117,095	141,440	165,195	188,224	210,780	232,488
Suwannee	44,168	44,739	47,314	49,740	51,991	54,076	55,917
Taylor	22,932	22,977	23,566	24,148	24,702	25,205	25,586
Union	15,647	15,864	16,389	16,896	17,386	17,861	18,278
Volusia	503,851	507,845	528,311	546,993	563,850	578,801	591,980
Wakulla	31,285	31,494	33,864	36,146	38,330	40,424	42,344
Walton	59,793	61,324	69,414	77,330	85,021	92,308	98,591
Washington	24,959	25,228	26,237	27,165	28,038	28,858	29,590
FLORIDA	19,507,369	19,789,625	21,236,667	22,600,346	23,872,566	25,027,345	26,081,392

Source: Florida Demographic Estimating Conference, February 2015 and the University of Florida, Bureau of Economic and Business Research, Florida Population Studies, Bulletin 171, April 2015

ATTACHMENT E-2

ATKINS

Atkins North America, Inc.
482 South Keller Road
Orlando, Florida 32810-6101
Telephone: +1.407.647.7275
www.atkinsglobal.com/northamerica

April 28, 2015

Ms. Melissa Madden
Solid Waste Section
Southwest District
13051 North Telecom Parkway
Temple Terrace, Florida 33637

RE: Lena Road Landfill, Manatee County
WACS ID No.: SWD-41-44795
Landfill Operation Permit No.: 39884-018-SO/01
Landfill Capacity Report for 2015

Dear Ms. Madden:

ATKINS, on behalf of Manatee County, is submitting this information required by Landfill Operation Permit Specific Condition C.13. Method and Sequence of Filling - Subpart e.

Based on the topographic map developed from the March 4, 2015 aerial photograph, and the average solid waste filling rate of 452,000 cubic yards over the last 11 years, we project the landfill has a remaining life of 31 years, and a landfill final closure date of 2046. Enclosed are the following:

- Spreadsheet entitled "Manatee County Lena Road Landfill – Remaining Landfill Life Estimate - 2015" dated March 4, 2015.
- Chart 1 "Plot of Cumulative Landfill Volume Consumed and Tons In place - September 9, 1991-March 4, 2015"
- Stage I, II and III Landfill topography based on the March 4, 2015 photograph
- Aerial Photograph dated March 4, 2015

The survey demonstrates that the above-grade side slopes are no greater than the design slopes, that the top elevation does not exceed the design elevation, and that all other design features and related improvements conform to the Department approved permit drawings.

Sincerely,

RAYMUNDO G. CASTRO
LICENSE
No 60036
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Raymundo Castro, P.E. #60036
Project Engineer

Cc: Bryan White, Manatee County , w/ spreadsheet and Chart 1

u:\so\projects\manatee lfr\wacs-01 monitoring\2015 aerial photograph\landfill life\fdep ltr march 28, 2015.docx

Manatee County Lena Road Landfill

REMAINING LANDFILL LIFE ESTIMATE - 2015

MARCH 4, 2014

Landfill	Estimated Design Capacity Cubic Yards	Estimated Volume Used as of February 28, 2014 Cubic Yards	Estimated Volume Used Feb. 28, 2014 to Mar. 4, 2015 Cubic Yards	Estimated Volume Remaining as of March 4, 2015 Cubic Yards
Stage I	13,179,520	13,158,153	Note 2	-
Stage II	12,705,440	-	-	12,705,440
Stage III	6,751,640	5,317,300	314,373	1,119,967
Totals	32,636,600	18,475,453	314,373	13,825,407

Remaining Landfill Life in Years Based on Annualized Filling Rate (See Note 3) **30.6**

Estimated Landfill Closure Year **2046**

Notes:

1. Landfill volume change is based on an aerial photograph taken by I.F. Rooks & Associates on March 4, 2015.
2. Solid waste disposal moved from the Stage I Landfill to the Stage III Landfill on January 15, 2004.
   The Stage III Landfill already had 659,000 CY of solid waste disposed of in it prior to January 15, 2004.
3. The filling rate for the Stage III Landfill between January 15, 2004 and March 4, 2015 has averaged 452,000 cubic yards per year.
   This average filling rate was used to project the remaining landfill life and the estimated landfill closure year.
4. The landfill life estimate is for the Stage I, II and III landfills which have a total area of 316 acres.

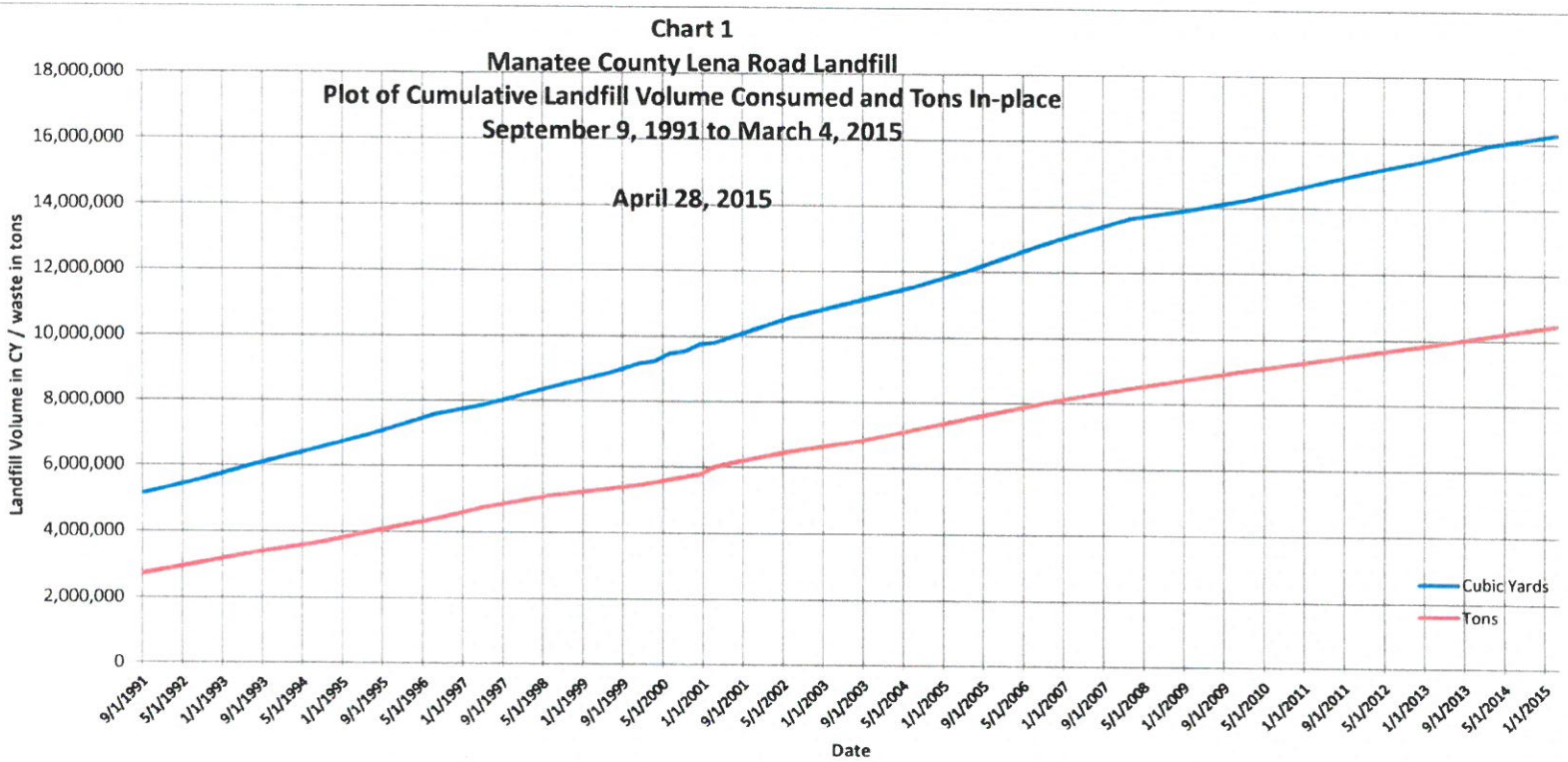


Chart 1
Manatee County Lena Road Landfill
Plot of Cumulative Landfill Volume Consumed and Tons In-place
September 9, 1991 to March 4, 2015
April 28, 2015
Landfill Volume in CY / waste in tons
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
9/1/1991
5/1/1992
1/1/1993
9/1/1993
5/1/1994
1/1/1995
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5/1/2010
1/1/2011
9/1/2011
5/1/2012
1/1/2013
9/1/2013
5/1/2014
1/1/2015
Date
Cubic Yards
Tons

Part F General Criteria for Landfills

F 1 Flood Plain

The Lena Road Class I Landfill toe of the proposed final cover slope is plotted on Figure F-1 which also shows the approximate boundaries of the flood zones as shown on the following Federal Insurance Administration flood maps:

- National Flood Insurance Program - Flood Insurance Rate Map (FIRM) - Manatee County, Florida (Unincorporated Areas) - Panel 327 of 575 - Community Panel Number: 120153 0327E - Map Revised: March 17, 2014.
- National Flood Insurance Program - Flood Insurance Rate Map (FIRM) - Manatee County, Florida (Unincorporated Areas) - Panel 329 of 575 - Community Panel Number: 120153 0329EC - Map Revised: March 17, 2014.

A small western area of the Stage III Landfill appears to be in Zone A. Zone A is defined as: "An area inundated by 1% annual chance of flooding for which no base flood elevations (BFE) were determined." The perimeter storm water berm separates the landfill from inundation during flood events. The storm water retention area compensates for any lost water storage capacity of the floodplain taken by the landfill. The landfill does not restrict the flow of the 100-year flood.

F 2 Minimum Horizontal Separation

The closest distance from the property boundary to the toe of the proposed final cover slope is on the west side of the Stage III Landfill. This minimum distance is approximately 300 feet, which is greater than the required minimum separation distance of 100 feet.

NORTH

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A	Cross section line
23 - - - 23	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT	5000-foot grid ticks: Florida State Plane coordinate system, west zone (FIPSZONE 0902), Transverse Mercator
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
March 17, 2014
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015
FLOOD PLAIN MAP

FIGURE F-1

U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\mlr_FIG_F-1_Flood Plain Map_2015.dwg Jul23,2015 - 6:17pm Plotted By: cast2327

PART G

LANDFILL CONSTRUCTION REQUIREMENTS – NOT APPLICABLE

Part H: Hydrogeological Investigation Requirements

Part H 1&2: HYDROGEOLOGICAL AND GEOTECHNICAL REPORTS

The following hydrogeological and geotechnical reports were referenced in the application in Part H. These reports were provided to the Department with the 2010 application, bound separately. The information in these reports was reviewed and found to still represent the site conditions.

1. "COMPILATION OF HYDROGEOLOGICAL AND GROUNDWATER DATA FOR LENA ROAD LANDFILL STAGE II AREA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED AUGUST 29, 1985.

2. "SITE EXPLORATION PROPOSED SLURRY WALL LEACHATE CONTROL SYSTEM LENA ROAD LANDFILL, STAGE II, MANATEE COUNTY, FLORIDA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED OCTOBER 31, 1988.

Part H 1 g and i: PUBLIC AND PRIVATE WATER USE PERMITS

Attachment H-1 provides the results of a data base search of all well records within 1 miles of the landfill. These results include all well construction permits and water use permits. The maps on pages 4 and 5 show all location records that were returned for this area. Each location is indexed to a number for which the available data is presented on the remaining pages of the report. A summary of these record is provided starting on page 6 of the report. Only two wells within 1/4 mile (no. 24 and 30) were issued a Water Use Permits (WUP) by the Southwest Florida Water Management District. The data shows no potable wells within 500 feet of the waste storage and disposal areas. The closest down gradient WUP (no. 20) is located approximately 3000 feet northwest of the Stage II Landfill. The two closest up gradient WUP's are located approximately 1,500 feet northeast of the Stage II Landfill, (no. 24) and the other is approximately 1,500 feet southeast of the Stage I Landfill (no. 30).

Part H 1 h: LOCATION OF EXISTING CONTAMINATED AREAS

There are no known contaminated areas outside the limits of the landfill slurry wall.

ATTACHMENT H-1

Environmental Data Report

Well Data Report

Lena Road Landfill

Manatee County, Florida

Prepared For:

Atkins North America, Inc.-Tampa
4030 West Boy Scout Blvd Suite 700
Tampa, FL 33607

Prepared By:

Environmental Data Management, Inc.
2840 West Bay Drive, Suite 208
Largo, Florida 33770

July 16, 2015

Environmental Data Management, Inc.
2840 West Bay Drive, Suite 208
Largo, Florida 33770
Tel. (727) 586-1700
http://www.edm-net.com

July 16, 2015

Brad Bayne
Atkins North America, Inc.-Tampa
4030 West Boy Scout Blvd
Tampa, FL 33607

Subject: **Well Data Report - EDM Project #22912**

Dear Mr. Bayne

Thank you for choosing Environmental Data Management, Inc. The following report provides the results of our well data research that you requested for the following location:

Lena Road Landfill

Manatee County, Florida

The following database records were researched for this report. The distances searched from the Subject Property are indicated.

- **Florida Water Management Districts Well Data (WELLSFWMD) - 1 Mile**
- **FDEP Drinking Water Program Office/Public Water Supply Data (FLPWS) - 1 Mile**
- **FDOH SuperAct Community Water Well Data (WELLSADOHC) - 1 Mile**
- **FDOH SuperAct Non- Community Water Well Data (WELLSADOHN) - 1 Mile**

EDM has obtained water well information from the various Florida Water Management District databases, the FDEP Drinking Water Program Office's Public Water System database and the FDOH SuperAct Water Well database. In most cases, the data contains the Latitude and Longitude of the well system, or address information, which is used by EDM to plot these locations within our Geographic Information System (GIS). However, some data records do not contain adequate location information to allow plotting within our GIS and therefore do not appear in this report. Upon request, EDM will be happy to conduct a detailed search of our databases based upon any additional criteria that you supply.

The EDM Well Data report consists of a Map of the Study Area showing the location of any well systems, relative to the Subject Property. Well sites found within the research area are labeled with a Map ID Number and the corresponding data for each well site can be found in the "Detail Reports" section of the report.

Thank you for selecting EDM as your data research provider. If you have any questions regarding this report or our service in general, please feel free to contact us. We appreciate the opportunity to be of service to you and look forward to working with you in the future.

ENVIRONMENTAL DATA MANAGEMENT, INC.

Executive Summary

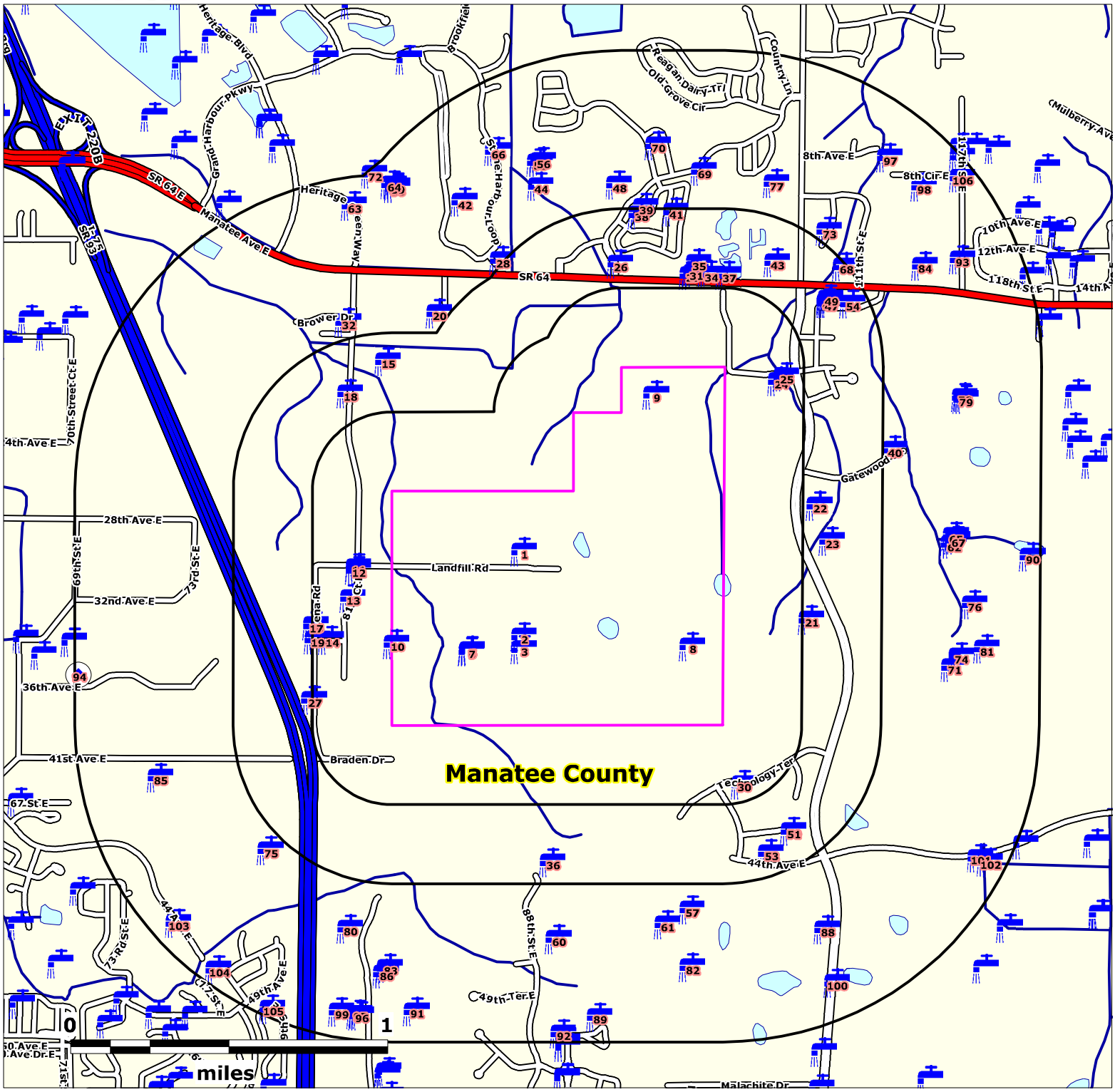
Report Date: 7/16/2015

Client Information	Project Information
Atkins North America, Inc.-Tampa 4030 West Boy Scout Blvd Suite 700 Tampa FL 33607 Client Job No: Client P.O. No:	Well Data Report Lena Road Landfill Manatee County, Florida EDM Job No# 22912

The following table displays the databases that were included in the research provided, the respective search distance for each database and the number of records identified for each database. The distance values indicated are measured from the centroid of the Subject Property. The absence of records in this table and the Site Summary Tables indicates that our research found no data for other sites located within the specified search distances.

	Search Radius (Miles)	From 0 - .13 mi	From .13 - .25 mi	From .26 - .5 mi	From .51 - 1.0 mi	Greater than 1 Mile	Totals
FDEP DATABASES							
FDEP Public Water System Basic Facility Report(FLPWS)	1.00	0	0	0	0	0	**0**
FDOH DATABASES							
FDOH Well Surveillance Program Public Water Wells(WELLSADOHC)	1.00	0	0	0	0	0	**0**
FDOH Well Surveillance Program Private Water Wells(WELLSADOHN)	1.00	0	0	0	0	1	1
WMD DATABASES							
SWFWMD Water Use Permit and Well Construction Permit Report(WELLSWFWMD)	1.00	1	0	7	29	68	105

Well Data Report
Street Map



Source: US Census Bureau TIGER Files

Map Scale and Property Boundaries are Approximate

Subject Property

Lena Road Landfill
Manatee County, FL

EDM Job No: 22912
July 16, 2015

1234S56E
Sec/Twp/Rng

FDEP Public Water System-1 mile

Water Mgt District Site -1 mile

FDOH Public Drinking Water Well -1 mile

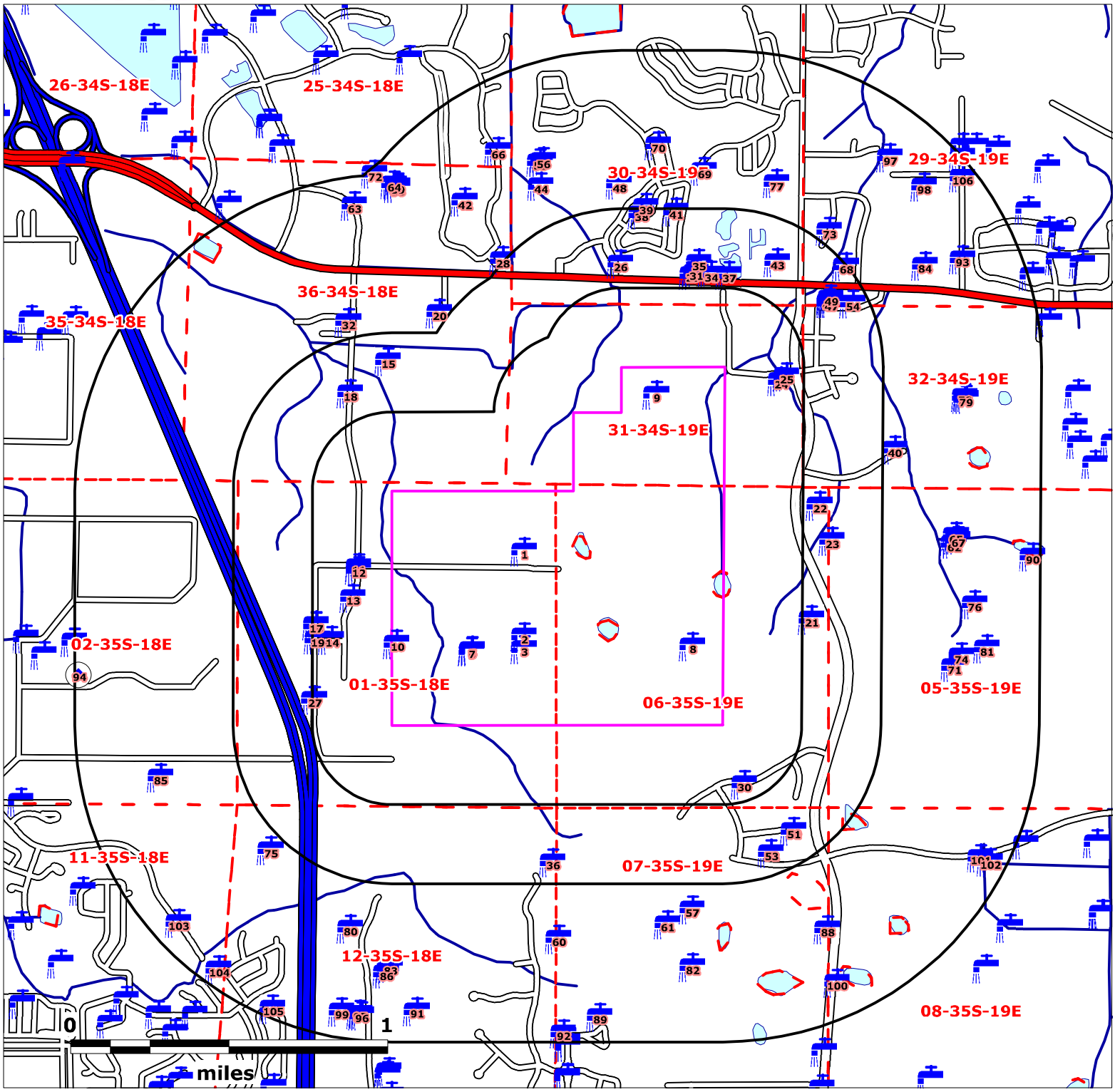
FDOH Private Drinking Water Well -1 mile

Contaminants Detected

Approximate Site Boundary

Centroid Latitude: 12.345678
Centroid Longitude: -12.345678

Well Data Report
Sec-Twp-Rng Map



Source: US Census Bureau TIGER Files

Map Scale and Property Boundaries are Approximate

Subject Property

Lena Road Landfill
Manatee County, FL

EDM Job No: 22912
July 16, 2015

1234S56E
Sec/Twp/Rng

FDEP Public Water System-1 mile

Water Mgt District Site -1 mile

FDOH Public Drinking Water Well -1 mile

FDOH Private Drinking Water Well -1 mile

Contaminants Detected

Approximate Site Boundary

Centroid Latitude: 12.345678
Centroid Longitude: -12.345678

ENVIRONMENTAL DATA MANAGEMENT
Well Data Report
Summary Table

MAPID#	FAC ID NO, NAME AND LOCATION	Dist/Dir:	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
			REGULATORY LISTS					
1)	560473/723288 Manatee County Dot Landfill Div LENA LAND FILLER WELLSWFWMD	0.1 W		X				
2)	579331/736394 Manatee County Dot Landfill Div 3333 LENA ROAD WELLSWFWMD	0.3 S		X				
3)	579320/736383 Manatee County Dot Landfill Div 3333 LENA ROAD (LANDFIL) WELLSWFWMD	0.3 S		X				
4)	813734/827666 Manatee County 3331 LENA RD WELLSWFWMD	0.4 S		X				
5)	813733/827666 Manatee County 3331 LENA RD WELLSWFWMD	0.4 S		X				
6)	813730/827665 Manatee County 3331 LENA RD WELLSWFWMD	0.4 S		X				
7)	813731/827665 Manatee County 3331 LENA RD WELLSWFWMD	0.4 S		X				
8)	182601/446105 Manatee County Dot Landfill Div LENA ROAD LANDFILL WELLSWFWMD	0.5 SE		X				
9)	206815/470319 Manatee Co Solid Waste Division CALLER SERVICE 25010 WELLSWFWMD	0.6 NE		X				
10)	499964/680556 Manatee County Dot Landfill Div LENA LANDFILL WELLSWFWMD	0.6 S		X				
11)	576324/734412 Ron Martin 3103 81ST CT E WELLSWFWMD	0.6 W		X				
12)	525925/696339 Bridgeport Developement Inc 3115 81ST COURT EAST WELLSWFWMD	0.6 W		X				
13)	523575/694862 Mbk Properties Inc 3231 81ST COURT EAST WELLSWFWMD	0.7 W		X				
14)	507061/684946 James Kersey 8008 34TH AVE EAST WELLSWFWMD	0.8 W		X				
15)	409723/618329 Roger L. Musgrave .5 MILE SOUTH OF SR64 ON LENA R WELLSWFWMD	0.8 N		X				

MAPID#	FAC ID NO, NAME AND LOCATION	Dist/Dir:	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
			REGULATORY LISTS					
16)	582843/738726 Manatee County Dot Landfill Div 3331 LENA ROAD WELLSWFWMD	0.8 W		X				
17)	560580/723335 Manatee County Dot Landfill Div 3333 LENA RD LAND FILL WELLSWFWMD	0.8 W		X				
18)	32248/104296 Howard Johnson 2008 LENA RD,BRADENTON WELLSWFWMD	0.8 N		X				
19)	534961/701584 D&D Dynasty Building Inc 7905 34TH AVE EAST WELLSWFWMD	0.8 W		X				
20)	10439/1 ROGER MUSGRAVE 8503 RT 64 E WELLSWFWMD	0.8 N		X				
21)	732428/783416 East Manatee Fire Rescue Distric 3200 LAKEWOOD RANCH BLVD 34202 SCT WELLSWFWMD	0.8 E		X				
22)	663192/766304 Crowder Brothers Hardware Inc 11066 GATEWOOD DR WELLSWFWMD	0.8 E		X				
23)	7846/69 SCHROEDER-MANATEE RANCH INC SCHROEDER-MANATEE RANCH INC WELLSWFWMD	0.9 E		X				
24)	7846/56 SCHROEDER-MANATEE RANCH INC 4715 LORRAINE RD WELLSWFWMD	0.9 NE		X				
25)	463253/657940 Schroeder-Manatee Ranch, Inc. LIFT STATION OFF LAKEWOOD RANCH WELLSWFWMD	0.9 NE		X				
26)	370216/588477 Manatee County School District 9501 SR 64 EAST WELLSWFWMD	0.9 N		X				
27)	599278/749273 Stb LLC 3705 LENA ROAD WELLSWFWMD	0.9 S		X				
28)	4443/41 HARBOURVEST LLC 10481 SIX MILE CYPRESS PKY WELLSWFWMD	0.9 N		X				
29)	4507/7 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1 NE		X				
30)	7846/78 SCHROEDER-MANATEE RANCH INC SCHROEDER-MANATEE RANCH INC WELLSWFWMD	1 SE		X				

MAPID#	FAC ID NO, NAME AND LOCATION	Dist/Dir:	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
31)	4507/1 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1 NE		X				
32)	38713/300483 Brower, Howard RT 2, BOX 337 WELLSWFWMD	1 N		X				
33)	4507/6 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1 NE		X				
34)	372041/589940 River Road Plantation Ltd & River Rd ACREAGE NORTH OF SR 64 WELLSWFWMD	1 NE		X				
35)	577936/735467 AmSouth Bank 10808 SR 64 EAST WELLSWFWMD	1 NE		X				
36)	816553/828806 Manatee County 3331 LENA RD WELLSWFWMD	1.0 S		X				
37)	4507/5 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1.0 NE		X				
38)	385952/600646 Lloyd E Williams Jr 1134 MILLBROOK CIRCLE WELLSWFWMD	1.1 N		X				
39)	820904/830493 MILLBROOK HOMEOWNERS ASSOCIATI 1130 MILLBROOK CIR WELLSWFWMD	1.1 N		X				
40)	626183/768984 Schroeder-Manatee Ranch Inc. 3604 POPE RD WELLSWFWMD	1.1 E		X				
41)	4507/4 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1.1 N		X				
42)	397965/609845 Us Homes Corporation SR 64 AND I-75 SEC 36 WELLSWFWMD	1.1 N		X				
43)	371434/589437 River Road Plantation Ltd & River Rd SR 64 NEW GOLF COURSE WELLSWFWMD	1.1 NE		X				
44)	469732/662092 School District of Manatee County / A 9501 SR 64 EAST WELLSWFWMD	1.1 N		X				
45)	780371/814420 JPMORGAN CHASE BANK NATL ASSOC 11030 SR 64 E WELLSWFWMD	1.1 NE		X				

MAPID#	FAC ID NO, NAME AND LOCATION	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
		REGULATORY LISTS					
46)	780372/814421 **Dist/Dir:** 1.1 NE JPMORGAN CHASE BANK NATL ASSOC 11030 SR 64 E WELLSWFWMD		X				
47)	780369/814418 **Dist/Dir:** 1.2 NE JPMORGAN CHASE BANK NATL ASSOC 4915 SR 64 E WELLSWFWMD		X				
48)	373561/591228 **Dist/Dir:** 1.2 N River Road Plantation Ltd & River Rd SR64 AND UPPER MANATEE RIVER RD WELLSWFWMD		X				
49)	780737/814595 **Dist/Dir:** 1.2 NE JPMORGAN CHASE BANK NATL ASSOC 11030 SR 64 E WELLSWFWMD		X				
50)	386733/601207 **Dist/Dir:** 1.2 SE Schroeder-Manatee Ranch, Inc. N OF HIGHSCHOOL SEC 7 WELLSWFWMD		X				
51)	7846/7 **Dist/Dir:** 1.2 SE SCHROEDER-MANATEE RANCH INC 4715 LORRAINE RD WELLSWFWMD		X				
52)	7846/45 **Dist/Dir:** 1.2 SE SCHROEDER-MANATEE RANCH INC 4715 LORRAINE RD WELLSWFWMD		X				
53)	26188/720091 **Dist/Dir:** 1.2 SE Schroeder-Manatee Ranch Inc. W SIDE OF LWR BLV/ 1 3/4 MI SR64 WELLSWFWMD		X				
54)	763724/807119 **Dist/Dir:** 1.2 NE DDRM Lakewood Ranch LLC 11050 SR 64 E WELLSWFWMD		X				
55)	12436/2 **Dist/Dir:** 1.2 N MANATEE CO SCHOOL BOARD 2802 B 27TH ST E WELLSWFWMD		X				
56)	504338/683228 **Dist/Dir:** 1.2 N School Board Of Manatee County, Attn: 9501 SR64 EAST WELLSWFWMD		X				
57)	7846/77 **Dist/Dir:** 1.2 S SCHROEDER-MANATEE RANCH INC SCHROEDER-MANATEE RANCH INC WELLSWFWMD		X				
58)	4443/44 **Dist/Dir:** 1.2 N HARBOURVEST LLC 10481 SIX MILE CYPRESS PKY WELLSWFWMD		X				
59)	4443/43 **Dist/Dir:** 1.2 N HARBOURVEST LLC 10481 SIX MILE CYPRESS PKY WELLSWFWMD		X				
60)	809581/825867 **Dist/Dir:** 1.2 S Newton Developments, Inc. MALACHITE DR WELLSWFWMD		X				

MAPID#	FAC ID NO, NAME AND LOCATION	Dist/Dir:	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
			REGULATORY LISTS					
61)	626125/800011 Schroeder-Manatee Ranch Inc. 0 N/A WELLSWFWMD	1.2 S		X				
62)	844836/841244 SCHROEDER-MANATEE RANCH INC 4810 LORRAINE RD WELLSWFWMD	1.2 E		X				
63)	4443/59 HARBOURVEST LLC ATTN: MIKE CAMPBELL 551 N CATTLEMAN RD SUITE 202 WELLSWFWMD	1.3 N		X				
64)	429145/633579 Harllee Farms N OF SR 64 1 MILE EAST OF I-75 WELLSWFWMD	1.3 N		X				
65)	844838/841244 SCHROEDER-MANATEE RANCH INC 4810 LORRAINE RD WELLSWFWMD	1.3 E		X				
66)	442142/643378 Harllee Farms NE SR 64 & I 75 WELLSWFWMD	1.3 N		X				
67)	844837/841244 SCHROEDER-MANATEE RANCH INC 4810 LORRAINE RD WELLSWFWMD	1.3 E		X				
68)	363779/583641 Mariee Cantolino ACREAGE,UPPER MANATEE RIVER ROAD WELLSWFWMD	1.3 NE		X				
69)	4507/3 BRUCE WILLIAMS FARM ASSOCIATES & MYAK 714 MANATEE AVE E WELLSWFWMD	1.3 NE		X				
70)	38616/300386 Moore'S Dairy Farm Inc 11408 UPPER MANATEE RIVER RD WELLSWFWMD	1.3 N		X				
71)	626121/842008 Schroeder-Manatee Ranch Inc. 4810 LORRAINE RD WELLSWFWMD	1.3 E		X				
72)	4443/47 HARBOURVEST LLC 10481 SIX MILE CYPRESS PKY WELLSWFWMD	1.3 N		X				
73)	589765/743212 Frank Losee 1212 110 STREET EAST WELLSWFWMD	1.3 NE		X				
74)	7846/6 SCHROEDER-MANATEE RANCH INC 4715 LORRAINE RD WELLSWFWMD	1.3 E		X				
75)	263934/521634 Hunt Building Corp. S.R. 70 & I-75 WELLSWFWMD	1.3 S		X				

MAPID#	FAC ID NO, NAME AND LOCATION	REGULATORY LISTS: FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
76)	844835/841244 **Dist/Dir:** 1.3 E SCHROEDER-MANATEE RANCH INC 4810 LORRAINE RD WELLSWFWMD		X				
77)	371433/589436 **Dist/Dir:** 1.3 NE River Road Plantation Ltd & River Rd SR 64 NEW GOLF COURSE WELLSWFWMD		X				
78)	254952/516103 **Dist/Dir:** 1.4 E Manatee Co. Public Water Dept. CALLER SERVICE 25010 WELLSWFWMD		X				
79)	650565/758918 **Dist/Dir:** 1.4 E Lakewood Ranch Commerce Park Owners A 0 LAKEWOOD RANCH WELLSWFWMD		X				
80)	398070/609929 **Dist/Dir:** 1.4 S Sewwtp FARM LAND WELLSWFWMD		X				
81)	398096/609945 **Dist/Dir:** 1.4 E SMR Communities, Inc. FARM LAND WELLSWFWMD		X				
82)	254716/515964 **Dist/Dir:** 1.4 S Manatee Co. Public Water Dept. CALLER SERVICE 25010 WELLSWFWMD		X				
83)	502119/681873 **Dist/Dir:** 1.4 S Ronald & Mariann Markham 5008 96TH STREET EAST WELLSWFWMD		X				
84)	501253/681366 **Dist/Dir:** 1.5 NE Randy Giddens 11431 STATE ROAD 64 WELLSWFWMD		X				
85)	794090/820319 **Dist/Dir:** 1.5 S KOLZE, RALPH M III KOLZE, SUSAN M 7212 41ST AVE E WELLSWFWMD		X				
86)	712477/773950 **Dist/Dir:** 1.5 S Sandlwood Business Park Lllc 0 NO ASSIGNED ADDRESS WELLSWFWMD		X				
87)	802463/823992 **Dist/Dir:** 1.5 SE Lake Erie College Of Osteopathic 4800 LAKEWOOD RANCH BLVD WELLSWFWMD		X				
88)	778074/813204 **Dist/Dir:** 1.5 SE Lake Erie College Of Osteopathic 4798 LAKEWOOD RANCH BLVD 34202 SCT WELLSWFWMD		X				
89)	644611/754951 **Dist/Dir:** 1.5 S Polk, Arthur R 4914 96TH WELLSWFWMD		X				
90)	844834/841244 **Dist/Dir:** 1.5 E SCHROEDER-MANATEE RANCH INC 4810 LORRAINE RD WELLSWFWMD		X				

MAPID#	FAC ID NO, NAME AND LOCATION	Dist/Dir:	FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
91)	816532/828798 manatee county 4751 66th street west WELLSWFWMD	1.5 S		X				
92)	773123/811127 MELOCHE, BRIAN L 5004 96TH ST E 34211 SCT WELLSWFWMD	1.5 S		X				
93)	441448/642841 Randy Giddens 1220 117TH STREET EAST WELLSWFWMD	1.6 NE		X				
94)	AAH1270 GRANDI STEVEN GRANDI 6907 36TH AVE E WELLSADOHN	1.6 W						X
95)	720626/777546 Sandalwood Business Park LLC 5002 LENA RD SCT WELLSWFWMD	1.6 S		X				
96)	709070/772388 Sandlewood Business Park LLC 5002 LENA RD WELLSWFWMD	1.6 S		X				
97)	771019/810189 Carino, Jorge T 11653 8TH AVE CIR E WELLSWFWMD	1.6 NE		X				
98)	455928/653146 Rich Yonker 6209 111TH STREET EAST/BLK B WELLSWFWMD	1.6 NE		X				
99)	702128/768530 Creekwood East Corp Parkllc 4920 LENA RD WELLSWFWMD	1.6 S		X				
100)	850318/843728 Central Park Lifestyles, LLC Lakewood Ranch Blvd WELLSWFWMD	1.6 SE		X				
101)	7846/59 SCHROEDER-MANATEE RANCH INC 4715 LORRAINE RD WELLSWFWMD	1.7 SE		X				
102)	648602/757492 Lakewood Ranch Inc. Lakewood Ranch WELLSWFWMD	1.7 SE		X				
103)	277559/530222 Edward Brown 7319 52ND DRIVE EAST WELLSWFWMD	1.7 S		X				
104)	779085/813768 GILCHRIST, LARRY D GILCHRIST, ELSIE L 4804 78TH ST E WELLSWFWMD	1.7 S		X				
105)	301339/544861 Gary Howard 5109 76TH STREET EAST WELLSWFWMD	1.7 S		X				

MAPID#	FAC ID NO, NAME AND LOCATION		REGULATORY LISTS: FLPWS	WELLSWFWMD	WELLSFWMD	WELLSJRWMD	WELLSADOHC	WELLSADOHN
106)	514568/689512 Edward Guimond 902 117TH STREET EAST WELLSWFWMD	**Dist/Dir:** 1.7 NE		X				

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
LENA LAND FILLER
, FL

MAP ID NUMBER: 1

Dist (Miles): 0.11
Direction: W

S W F W M D

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 723288
PERMIT ISSUED: 7/26/2005
WELL #: 1
SITE NAME: 723288 - 1
OWNER: Manatee County Dot Landfill Div
WELL LOC: LENA LAND FILLER

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 156
WELL CASING DEPTH(ft): 156
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: HSA ENGINEERS & SCIENTISTS
LICENSE NO: 9224
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
3333 LENA ROAD
, FL

MAP ID NUMBER: 2

Dist (Miles): 0.31
Direction: SW

S W F W M D

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 736394
PERMIT ISSUED: 3/15/2006
WELL #: 2
SITE NAME: 736394 - 2
OWNER: Manatee County Dot Landfill Div
WELL LOC: 3333 LENA ROAD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 22
WELL CASING DEPTH(ft): 22
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: CLINTON E SMITH
LICENSE NO: 9277
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
3333 LENA ROAD (LANDFIL)
, FL

MAP ID NUMBER: 3

Dist (Miles): 0.34

Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 736383
PERMIT ISSUED: 3/15/2006
WELL #: 1
SITE NAME: 736383 - 1
OWNER: Manatee County Dot Landfill Div
WELL LOC: 3333 LENA ROAD (LANDFIL)

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 19
WELL CASING DEPTH(ft): 19
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: CLINTON E SMITH
LICENSE NO: 9277
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County
3331 LENA RD
BRADENTON, FL

MAP ID NUMBER: 4

Dist (Miles): 0.43
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 827666
PERMIT ISSUED: 3/14/2013
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Manatee County
WELL LOC: 3331 LENA RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 20
WELL CASING DEPTH(ft): 10
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 10

CONTRACTOR: PREFERRED DRILLING SOLUTION INC
LICENSE NO: 2613
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County
3331 LENA RD
BRADENTON, FL

MAP ID NUMBER: 5

Dist (Miles): 0.43
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 827666
PERMIT ISSUED: 3/14/2013
WELL #:
SITE NAME: Proposed WCP Well
OWNER: Manatee County
WELL LOC: 3331 LENA RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: PREFERRED DRILLING SOLUTION INC
LICENSE NO: 2613
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County
3331 LENA RD
BRADENTON, FL

MAP ID NUMBER: 6

Dist (Miles): 0.43
Direction: SW

S W F W M D

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 827665
PERMIT ISSUED: 3/14/2013
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Manatee County
WELL LOC: 3331 LENA RD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 20
WELL CASING DEPTH(ft): 20
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 10

CONTRACTOR: PREFERRED DRILLING SOLUTION INC
LICENSE NO: 2613
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County
3331 LENA RD
BRADENTON, FL

MAP ID NUMBER: 7

Dist (Miles): 0.43
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 827665
PERMIT ISSUED: 3/14/2013
WELL #:
SITE NAME: Proposed WCP Well
OWNER: Manatee County
WELL LOC: 3331 LENA RD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: PREFERRED DRILLING SOLUTION INC
LICENSE NO: 2613
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
LENA ROAD LANDFILL
, FL

MAP ID NUMBER: 8

Dist (Miles): 0.53

Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 446105
PERMIT ISSUED: 9/27/1983
WELL #:
SITE NAME: 446105 - 1
OWNER: Manatee County Dot Landfill Div
WELL LOC: LENA ROAD LANDFILL

WELL USE: TEST
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: ARADAMAN & ASSOCIATES INC.
LICENSE NO: 2368
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee Co Solid Waste Division
CALLER SERVICE 25010
, FL

MAP ID NUMBER: 9

Dist (Miles): 0.57
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 470319
PERMIT ISSUED: 9/26/1988
WELL #: 1
SITE NAME: 470319 - 1
OWNER: Manatee Co Solid Waste Division
WELL LOC: CALLER SERVICE 25010

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 20
WELL CASING DEPTH(ft): 10
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 3

CONTRACTOR: STEVEN FISHER
LICENSE NO: 2884
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
LENA LANDFILL
, FL

MAP ID NUMBER: 10

Dist (Miles): 0.60

Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 680556
PERMIT ISSUED: 2/6/2003
WELL #: 1
SITE NAME: 680556 - 1
OWNER: Manatee County Dot Landfill Div
WELL LOC: LENA LANDFILL

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 12
WELL CASING DEPTH(ft): 10
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: DRIGGERS ENGNEERING SERVICES INC
LICENSE NO: 9278
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Ron Martin
3103 81ST CT E
, FL

MAP ID NUMBER: 11

Dist (Miles): 0.64

Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 734412
PERMIT ISSUED: 2/10/2006
WELL #: 1
SITE NAME: 734412 - 1
OWNER: Ron Martin
WELL LOC: 3103 81ST CT E

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 320
WELL CASING DEPTH(ft): 160
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 27

CONTRACTOR: HARRIS WELL DRILLING LLC
LICENSE NO: 2831
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Bridgeport Developement Inc
3115 81ST COURT EAST
, FL

MAP ID NUMBER: 12

Dist (Miles): 0.64

Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 696339
PERMIT ISSUED: 2/18/2004
WELL #: 1
SITE NAME: 696339 - 1
OWNER: Bridgeport Developement Inc
WELL LOC: 3115 81ST COURT EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 386
WELL CASING DEPTH(ft): 102
WELL DIAMETER (in): 4
STATIC WATER DEPTH:

CONTRACTOR: SAXBY WELL DRILLING INC
LICENSE NO: 9267
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Mbk Properties Inc
3231 81ST COURT EAST
, FL

MAP ID NUMBER: 13

Dist (Miles): 0.67
Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 694862
PERMIT ISSUED: 1/20/2004
WELL #: 1
SITE NAME: 694862 - 1
OWNER: Mbk Properties Inc
WELL LOC: 3231 81ST COURT EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 350
WELL CASING DEPTH(ft): 77
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 26

CONTRACTOR: YOUNG WELL DRILLING
LICENSE NO: 2840
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

James Kersey
8008 34TH AVE EAST
, FL

MAP ID NUMBER: 14

Dist (Miles): 0.78
Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 684946
PERMIT ISSUED: 5/19/2003
WELL #: 1
SITE NAME: 684946 - 1
OWNER: James Kersey
WELL LOC: 8008 34TH AVE EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 200
WELL CASING DEPTH(ft): 74
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 21

CONTRACTOR: THE WATER WORKS
LICENSE NO: 9052
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Roger L. Musgrave
.5 MILE SOUTH OF SR64 ON LENA R
, FL

MAP ID NUMBER: 15

Dist (Miles): 0.79

Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 618329
PERMIT ISSUED: 4/9/1999
WELL #: 1
SITE NAME: 618329 - 1
OWNER: Roger L. Musgrave
WELL LOC: .5 MILE SOUTH OF SR64 ON LENA R

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 240
WELL CASING DEPTH(ft): 54
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 25

CONTRACTOR:
LICENSE NO: 2865
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
3331 LENA ROAD
, FL

MAP ID NUMBER: 16

Dist (Miles): 0.81

Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 738726
PERMIT ISSUED: 4/18/2006
WELL #: 4
SITE NAME: 738726 - 4
OWNER: Manatee County Dot Landfill Div
WELL LOC: 3331 LENA ROAD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: GROUNDWATER PRO/PRECSION SAMPLIN
LICENSE NO: 2638
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County Dot Landfill Div
3333 LENA RD LAND FILL
, FL

MAP ID NUMBER: 17

Dist (Miles): 0.81

Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 723335
PERMIT ISSUED: 7/27/2005
WELL #: 4
SITE NAME: 723335 - 4
OWNER: Manatee County Dot Landfill Div
WELL LOC: 3333 LENA RD LAND FILL

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 20
WELL CASING DEPTH(ft): 5
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: HSA ENGINEERS & SCIENTISTS
LICENSE NO: 9224
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Howard Johnson
2008 LENA RD,BRADENTON
, FL

MAP ID NUMBER: 18

Dist (Miles): 0.81
Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 104296
PERMIT ISSUED: 4/27/1992
WELL #: 1
SITE NAME: 104296 - 1
OWNER: Howard Johnson
WELL LOC: 2008 LENA RD,BRADENTON

WELL USE: DOMESTIC
WELL TOTAL DEPTH(ft): 150
WELL CASING DEPTH(ft): 37
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 15

CONTRACTOR: C. V. GREEN WELL DRILLING
LICENSE NO: 1360
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

D&D Dynasty Building Inc
7905 34TH AVE EAST
, FL

MAP ID NUMBER: 19

Dist (Miles): 0.82

Direction: W

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 701584
PERMIT ISSUED: 5/26/2004
WELL #: 1
SITE NAME: 701584 - 1
OWNER: D&D Dynasty Building Inc
WELL LOC: 7905 34TH AVE EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 460
WELL CASING DEPTH(ft): 120
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 20

CONTRACTOR: MYAKKA WELL DRILLING & PUMP SER
LICENSE NO: 9281
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Musgrave Real Estate Holdings, LP / Attn: Roger Musgrave
8500 State Road 64 East
Bradenton, FL 34212

MAP ID NUMBER: 20

Dist (Miles): 0.82

Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 10439
WUP REV #: 3
WTHDRWL #: 1
PERMIT ISSUED: 8/24/2012
PERMIT EXPIRED: 8/24/2022
PERMIT STATUS: Approved

PROJECT NAME: Roger L. Musgrave
OWNER: Musgrave Real Estate Holdings, LP / Attn: Roger Musgrave
PERMITT Musgrave Real Estate Holdings, LP / Attn: Roger Musgrave
SECTION: 36
TOWNSHIP: 34
RANGE: 18

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Livestock
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 34000
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 51000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

East Manatee Fire Rescue Distric
3200 LAKEWOOD RANCH BLVD 34202 SCT
N/A, FL

MAP ID NUMBER: 21

Dist (Miles): 0.83

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 783416
PERMIT ISSUED: 4/8/2009
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: East Manatee Fire Rescue Distric
WELL LOC: 3200 LAKEWOOD RANCH BLVD 34202 SCT

WELL USE: AUGMENTATION
WELL TOTAL DEPTH(ft): 340
WELL CASING DEPTH(ft): 120
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 35

CONTRACTOR: HARRIS WELL DRILLING LLC
LICENSE NO: 2831
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Crowder Brothers Hardware Inc
11066 GATEWOOD DR
BRADENTON, FL

MAP ID NUMBER: 22

Dist (Miles): 0.83

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 766304
PERMIT ISSUED: 9/18/2007
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Crowder Brothers Hardware Inc
WELL LOC: 11066 GATEWOOD DR

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 397
WELL CASING DEPTH(ft): 122
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 35

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 23

Dist (Miles): 0.86

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 69
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 32
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 349900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 596000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 69
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 32
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 349900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 596000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 24

Dist (Miles): 0.87

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 56
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 31
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 10200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 33400

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 56
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 31
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 10200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 33400

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc.
LIFT STATION OFF LAKEWOOD RANCH
, FL

MAP ID NUMBER: 25

Dist (Miles): 0.90

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 657940
PERMIT ISSUED: 8/24/2001
WELL #: 1
SITE NAME: M-56
OWNER: Schroeder-Manatee Ranch, Inc.
WELL LOC: LIFT STATION OFF LAKEWOOD RANCH

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 420
WELL CASING DEPTH(ft): 93
WELL DIAMETER (in): 5
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO: 2865
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County School District
9501 SR 64 EAST
, FL

MAP ID NUMBER: 26

Dist (Miles): 0.91
Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 588477
PERMIT ISSUED: 2/20/1997
WELL #: 1
SITE NAME: 588477 - 1
OWNER: Manatee County School District
WELL LOC: 9501 SR 64 EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 480
WELL CASING DEPTH(ft): 200
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 25

CONTRACTOR: TROUTMAN WELL DRILLING INC.
LICENSE NO: 1627
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Stb LLC
3705 LENA ROAD
, FL

MAP ID NUMBER: 27

Dist (Miles): 0.91
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 749273
PERMIT ISSUED: 10/10/2006
WELL #: 1
SITE NAME: 749273 - 1
OWNER: Stb LLC
WELL LOC: 3705 LENA ROAD

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 380
WELL CASING DEPTH(ft): 180
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 0

CONTRACTOR: MUDD'S POWER & PUMP
LICENSE NO: 9376
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lennar Homes LLC
10481 Six Mile Cypress Parkway
Fort Myers, FL 33966-6460

MAP ID NUMBER: 28

Dist (Miles): 0.92
Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4443
WUP REV #: 10
WTHDRWL #: 41
PERMIT ISSUED: 1/27/2012
PERMIT EXPIRED: 1/27/2017
PERMIT STATUS: Approved

PROJECT NAME: Heritage Harbour
OWNER: Lennar Homes LLC
PERMITT Lennar Homes LLC
SECTION: 36
TOWNSHIP: 34
RANGE: 18

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 29

Dist (Miles): 0.95

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 6
WTHDRWL #: 7
PERMIT ISSUED: 5/2/2003
PERMIT EXPIRED: 9/7/2012
PERMIT STATUS: Approved

PROJECT NAME: LINKS AT GREENFIELD PLANTATION
OWNER: The Links Partnership, Ltd
PERMITT The Links Partnership, Ltd
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Proposed
WELL TYPE: Withdrawal of Groundwater
WELL USE: Augmentation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: RECREATION/AESTHETIC
PERMITTED DAILY AVG (gal): 26000
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 830100

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 30

Dist (Miles): 0.96

Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 78
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 6
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 49600
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 153500

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 78
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 6
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 49600
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 153500

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 31

Dist (Miles): 0.96
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 7
WTHDRWL #: 1
PERMIT ISSUED: 9/7/2012
PERMIT EXPIRED: 9/7/2022
PERMIT STATUS: Approved

PROJECT NAME: Links at Greenfield Plantation
OWNER: Tony Johnson
PERMITT The Links Partnership, LTD /Attn: Greg Christovich
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: General Recreational
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Brower, Howard
RT 2, BOX 337
, FL

MAP ID NUMBER: 32

Dist (Miles): 0.97
Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 300483
PERMIT ISSUED: 1/1/1970
WELL #: 1
SITE NAME: 300483 - 1
OWNER: Brower, Howard
WELL LOC: RT 2, BOX 337

WELL USE: DOMESTIC
WELL TOTAL DEPTH(ft): 102
WELL CASING DEPTH(ft): 50
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 23

CONTRACTOR: TROUTMAN WELL DRILLING INC.
LICENSE NO: 1627
WELL DRILL: COMBINATION (TWO OR MORE METHODS)

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 33

Dist (Miles): 0.98
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 7
WTHDRWL #: 6
PERMIT ISSUED: 9/7/2012
PERMIT EXPIRED: 9/7/2022
PERMIT STATUS: Approved

PROJECT NAME: Links at Greenfield Plantation
OWNER: Tony Johnson
PERMITT The Links Partnership, LTD /Attn: Greg Christovich
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Augmentation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 311200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 833300

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

River Road Plantation Ltd & River Rd Plantation Golf Ptnshp
ACREAGE NORTH OF SR 64
, FL

MAP ID NUMBER: 34

Dist (Miles): 0.98
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 589940
PERMIT ISSUED: 3/27/1997
WELL #: 1
SITE NAME: 589940 - 1
OWNER: River Road Plantation Ltd & River Rd Plantatio
WELL LOC: ACREAGE NORTH OF SR 64

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 1110
WELL CASING DEPTH(ft): 610
WELL DIAMETER (in): 10
STATIC WATER DEPTH: 351

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

AmSouth Bank
10808 SR 64 EAST
, FL

MAP ID NUMBER: 35

Dist (Miles): 1.00
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 735467
PERMIT ISSUED: 2/28/2006
WELL #: 1
SITE NAME: 735467 - 1
OWNER: AmSouth Bank
WELL LOC: 10808 SR 64 EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 300
WELL CASING DEPTH(ft): 66
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 30

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee County
3331 LENA RD
N/A, FL

MAP ID NUMBER: 36

Dist (Miles): 1.00
Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 828806
PERMIT ISSUED: 4/30/2013
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Manatee County
WELL LOC: 3331 LENA RD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 13.2
WELL CASING DEPTH(ft): 13.2
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 5

CONTRACTOR: Terracon
LICENSE NO: 7352
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 37

Dist (Miles): 1.01
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 7
WTHDRWL #: 5
PERMIT ISSUED: 9/7/2012
PERMIT EXPIRED: 9/7/2022
PERMIT STATUS: Approved

PROJECT NAME: Links at Greenfield Plantation
OWNER: Tony Johnson
PERMITT The Links Partnership, LTD /Attn: Greg Christovich
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Re-Pump
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 311200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 833300

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lloyd E Williams Jr
1134 MILLBROOK CIRCLE
, FL

MAP ID NUMBER: 38

Dist (Miles): 1.08

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 600646
PERMIT ISSUED: 12/18/1997
WELL #: 1
SITE NAME: 600646 - 1
OWNER: Lloyd E Williams Jr
WELL LOC: 1134 MILLBROOK CIRCLE

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 420
WELL CASING DEPTH(ft): 70
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 33

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

MILLBROOK HOMEOWNERS ASSOCIATI
1130 MILLBROOK CIR
Bradenton, FL

MAP ID NUMBER: 39

Dist (Miles): 1.10

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 830493
PERMIT ISSUED: 7/16/2013
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: MILLBROOK HOMEOWNERS ASSOCIATI
WELL LOC: 1130 MILLBROOK CIR

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 460
WELL CASING DEPTH(ft): 23
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 10

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch Inc.
3604 POPE RD
BRADENTON, FL

MAP ID NUMBER: 40

Dist (Miles): 1.10

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 768984
PERMIT ISSUED: 12/13/2007
WELL #: 1
SITE NAME: 69
OWNER: Schroeder-Manatee Ranch Inc.
WELL LOC: 3604 POPE RD

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 1100
WELL CASING DEPTH(ft): 210
WELL DIAMETER (in): 12
STATIC WATER DEPTH: 27

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 41

Dist (Miles): 1.12

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 6
WTHDRWL #: 4
PERMIT ISSUED: 5/2/2003
PERMIT EXPIRED: 9/7/2012
PERMIT STATUS: Approved

PROJECT NAME: LINKS AT GREENFIELD PLANTATION
OWNER: The Links Partnership, Ltd
PERMITT The Links Partnership, Ltd
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: General Recreational
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: RECREATION/AESTHETIC
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Us Homes Corporation
SR 64 AND I-75 SEC 36
, FL

MAP ID NUMBER: 42

Dist (Miles): 1.12

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 609845
PERMIT ISSUED: 9/1/1998
WELL #: 1
SITE NAME: 609845 - 1
OWNER: Us Homes Corporation
WELL LOC: SR 64 AND I-75 SEC 36

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 16
WELL CASING DEPTH(ft): 6
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 4.3

CONTRACTOR: R K SERVICES
LICENSE NO: 9082
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

River Road Plantation Ltd & River Rd Plantation Golf Ptnshp
SR 64 NEW GOLF COURSE
, FL

MAP ID NUMBER: 43

Dist (Miles): 1.13
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 589437
PERMIT ISSUED: 3/14/1997
WELL #: 1
SITE NAME: RIVER ROAD PLANTA
OWNER: River Road Plantation Ltd & River Rd Plantatio
WELL LOC: SR 64 NEW GOLF COURSE

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 180
WELL CASING DEPTH(ft): 18
WELL DIAMETER (in): 4
STATIC WATER DEPTH:

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: NOT ENTERED

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

School District of Manatee County / Attn: Michael Pendley
9501 SR 64 EAST
, FL

MAP ID NUMBER: 44

Dist (Miles): 1.14
Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 662092
PERMIT ISSUED: 12/5/2001
WELL #: 1
SITE NAME: 662092 - 1
OWNER: School District of Manatee County / Attn: Mich
WELL LOC: 9501 SR 64 EAST

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 6
WELL CASING DEPTH(ft): 1
WELL DIAMETER (in): 1.5
STATIC WATER DEPTH: 5

CONTRACTOR: ARDAMAN & ASSOCIATES
LICENSE NO: 9113
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

JPMORGAN CHASE BANK NATL ASSOC
11030 SR 64 E
Bradenton, FL

MAP ID NUMBER: 45

Dist (Miles): 1.15
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 814420
PERMIT ISSUED:
WELL #:
SITE NAME: Proposed WCP Well
OWNER: JPMORGAN CHASE BANK NATL ASSOC
WELL LOC: 11030 SR 64 E

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

JPMORGAN CHASE BANK NATL ASSOC
11030 SR 64 E
N/A, FL

MAP ID NUMBER: 46

Dist (Miles): 1.15
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 814421
PERMIT ISSUED: 7/22/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: JPMORGAN CHASE BANK NATL ASSOC
WELL LOC: 11030 SR 64 E

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 298
WELL CASING DEPTH(ft): 21
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 1

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

JPMORGAN CHASE BANK NATL ASSOC
4915 SR 64 E
Bradenton, FL

MAP ID NUMBER: 47

Dist (Miles): 1.15
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 814418
PERMIT ISSUED: 7/22/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: JPMORGAN CHASE BANK NATL ASSOC
WELL LOC: 4915 SR 64 E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 360
WELL CASING DEPTH(ft): 70
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 1

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

River Road Plantation Ltd & River Rd Plantation Golf Ptnshp
SR64 AND UPPER MANATEE RIVER RD
, FL

MAP ID NUMBER: 48

Dist (Miles): 1.15

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 591228
PERMIT ISSUED: 4/11/1997
WELL #: 1
SITE NAME: 591228 - 1
OWNER: River Road Plantation Ltd & River Rd Plantatio
WELL LOC: SR64 AND UPPER MANATEE RIVER RD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 16
WELL CASING DEPTH(ft): 16
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

JPMORGAN CHASE BANK NATL ASSOC
11030 SR 64 E
N/A, FL

MAP ID NUMBER: 49

Dist (Miles): 1.16
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 814595
PERMIT ISSUED: 7/27/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: JPMORGAN CHASE BANK NATL ASSOC
WELL LOC: 11030 SR 64 E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 320
WELL CASING DEPTH(ft): 75
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 25

CONTRACTOR: PATTERSON WELL DRILLING CO
LICENSE NO: 1127
WELL DRILL: COMBINATION (TWO OR MORE METHODS)

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc.
N OF HIGHSCHOOL SEC 7
, FL

MAP ID NUMBER: 50

Dist (Miles): 1.17
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 601207
PERMIT ISSUED: 1/12/1998
WELL #: 1
SITE NAME: 601207 - 1
OWNER: Schroeder-Manatee Ranch, Inc.
WELL LOC: N OF HIGHSCHOOL SEC 7

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 635
WELL CASING DEPTH(ft): 635
WELL DIAMETER (in): 8
STATIC WATER DEPTH:

CONTRACTOR: HARRY CANNON WELL DRILLING
LICENSE NO: 1376
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 51

Dist (Miles): 1.17

Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 7
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: General Agricultural
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 7
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: General Agricultural
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 52

Dist (Miles): 1.18

Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 45
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 45
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch Inc.
W SIDE OF LWR BLV/ 1 3/4 MI SR64
, FL

MAP ID NUMBER: 53

Dist (Miles): 1.18
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 720091
PERMIT ISSUED: 5/26/2005
WELL #: 1
SITE NAME: SCHROEDER-MANAT
OWNER: Schroeder-Manatee Ranch Inc.
WELL LOC: W SIDE OF LWR BLV/ 1 3/4 MI SR64

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 546
WELL CASING DEPTH(ft): 546
WELL DIAMETER (in): 8
STATIC WATER DEPTH:

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

DDRM Lakewood Ranch LLC
11050 SR 64 E
BRADENTON, FL

MAP ID NUMBER: 54

Dist (Miles): 1.20
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 807119
PERMIT ISSUED: 8/30/2010
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: DDRM Lakewood Ranch LLC
WELL LOC: 11050 SR 64 E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 270
WELL CASING DEPTH(ft): 105
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 21

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

School Board Of Manatee County/Attn: Mr. Michael Pendley
1 Matzke Way
Bradenton, FL 34206

MAP ID NUMBER: 55

Dist (Miles): 1.21

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 12436
WUP REV #: 1
WTHDRWL #: 2
PERMIT ISSUED: 8/5/2013
PERMIT EXPIRED: 8/5/2033
PERMIT STATUS: Approved

PROJECT NAME: Freedom/Haile Elementary School
OWNER: School Board Of Manatee County, Attn: Mr. Michael Pendley
PERMITT School Board Of Manatee County, Attn: Mr. Michael Pendley
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 20800
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 65100

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

School Board Of Manatee County, Attn: Mr. Michael Pendley
9501 SR64 EAST
, FL

MAP ID NUMBER: 56

Dist (Miles): 1.22
Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 683228
PERMIT ISSUED: 4/10/2003
WELL #: 1
SITE NAME: 683228 - 1
OWNER: School Board Of Manatee County, Attn: Mr. Mi
WELL LOC: 9501 SR64 EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 360
WELL CASING DEPTH(ft): 122
WELL DIAMETER (in): 5
STATIC WATER DEPTH:

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2880
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

Report Date: 7/16/2015

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 57

Dist (Miles): 1.23

Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 77
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Dismantled
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 77
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 7
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Dismantled
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lennar Homes LLC
10481 Six Mile Cypress Parkway
Fort Myers, FL 33966-6460

MAP ID NUMBER: 58

Dist (Miles): 1.24

Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4443
WUP REV #: 10
WTHDRWL #: 44
PERMIT ISSUED: 1/27/2012
PERMIT EXPIRED: 1/27/2017
PERMIT STATUS: Approved

PROJECT NAME: Heritage Harbour
OWNER: Lennar Homes LLC
PERMITT Lennar Homes LLC
SECTION: 25
TOWNSHIP: 34
RANGE: 18

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Re-Pump
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 316200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lennar Homes LLC
10481 Six Mile Cypress Parkway
Fort Myers, FL 33966-6460

MAP ID NUMBER: 59

Dist (Miles): 1.24

Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4443
WUP REV #: 10
WTHDRWL #: 43
PERMIT ISSUED: 1/27/2012
PERMIT EXPIRED: 1/27/2017
PERMIT STATUS: Approved

PROJECT NAME: Heritage Harbour
OWNER: Lennar Homes LLC
PERMITT Lennar Homes LLC
SECTION: 25
TOWNSHIP: 34
RANGE: 18

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Augmentation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 316200
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Newton Developments, Inc.
MALACHITE DR
N/A, FL

MAP ID NUMBER: 60

Dist (Miles): 1.24
Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 825867
PERMIT ISSUED: 12/14/2012
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Newton Developments, Inc.
WELL LOC: MALACHITE DR

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 24.5
WELL CASING DEPTH(ft): 24.5
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 7

CONTRACTOR: NATIONAL ENV TECHNOLOGY INC
LICENSE NO: 11093
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch Inc.
0 N/A
N/A, FL

MAP ID NUMBER: 61

Dist (Miles): 1.25
Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 800011
PERMIT ISSUED: 10/15/2009
WELL #: 1
SITE NAME: M10
OWNER: Schroeder-Manatee Ranch Inc.
WELL LOC: 0 N/A

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 1138
WELL CASING DEPTH(ft): 61
WELL DIAMETER (in): 10
STATIC WATER DEPTH: 34

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SCHROEDER-MANATEE RANCH INC
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 62

Dist (Miles): 1.25

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 841244
PERMIT ISSUED: 1/22/2015
WELL #: 2
SITE NAME: Proposed WCP Well
OWNER: SCHROEDER-MANATEE RANCH INC
WELL LOC: 4810 LORRAINE RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 12
WELL CASING DEPTH(ft): 1
WELL DIAMETER (in): 1
STATIC WATER DEPTH: 3

CONTRACTOR: SUBSURFACE ENVIRONMENTAL
LICENSE NO: 11271
WELL DRILL: HYDRAULIC PUNCH

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lennar Homes LLC
10481 Six Mile Cypress Parkway
Fort Myers, FL 33966-6460

MAP ID NUMBER: 63

Dist (Miles): 1.25
Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4443
WUP REV #: 10
WTHDRWL #: 59
PERMIT ISSUED: 1/27/2012
PERMIT EXPIRED: 1/27/2017
PERMIT STATUS: Approved

PROJECT NAME: Heritage Harbour
OWNER: Lennar Homes LLC
PERMITT Lennar Homes LLC
SECTION: 0
TOWNSHIP: 0
RANGE: 0

WELL STATUS: Existing
WELL TYPE: Surface Withdrawal
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 430000
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Harllee Farms
N OF SR 64 1 MILE EAST OF I-75
, FL

MAP ID NUMBER: 64

Dist (Miles): 1.25

Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 633579
PERMIT ISSUED: 3/28/2000
WELL #: 1
SITE NAME: 633579 - 1
OWNER: Harllee Farms
WELL LOC: N OF SR 64 1 MILE EAST OF I-75

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 1110
WELL CASING DEPTH(ft): 462
WELL DIAMETER (in): 12
STATIC WATER DEPTH: 10

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SCHROEDER-MANATEE RANCH INC
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 65

Dist (Miles): 1.25

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 841244
PERMIT ISSUED: 1/22/2015
WELL #: 4
SITE NAME: Proposed WCP Well
OWNER: SCHROEDER-MANATEE RANCH INC
WELL LOC: 4810 LORRAINE RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 12
WELL CASING DEPTH(ft): 1
WELL DIAMETER (in): 1
STATIC WATER DEPTH: 3

CONTRACTOR: SUBSURFACE ENVIRONMENTAL
LICENSE NO: 11271
WELL DRILL: HYDRAULIC PUNCH

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Harllee Farms
NE SR 64 & I 75
, FL

MAP ID NUMBER: 66

Dist (Miles): 1.26

Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 643378
PERMIT ISSUED: 10/17/2000
WELL #: 1
SITE NAME: 643378 - 1
OWNER: Harllee Farms
WELL LOC: NE SR 64 & I 75

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 640
WELL CASING DEPTH(ft): 640
WELL DIAMETER (in): 8
STATIC WATER DEPTH: 8

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SCHROEDER-MANATEE RANCH INC
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 67

Dist (Miles): 1.26
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 841244
PERMIT ISSUED: 1/22/2015
WELL #: 3
SITE NAME: Proposed WCP Well
OWNER: SCHROEDER-MANATEE RANCH INC
WELL LOC: 4810 LORRAINE RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 12
WELL CASING DEPTH(ft): 1
WELL DIAMETER (in): 1
STATIC WATER DEPTH: 3

CONTRACTOR: SUBSURFACE ENVIRONMENTAL
LICENSE NO: 11271
WELL DRILL: HYDRAULIC PUNCH

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Mariee Cantolino
ACREAGE,UPPER MANATEE RIVER ROAD
, FL

MAP ID NUMBER: 68

Dist (Miles): 1.26

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 583641
PERMIT ISSUED: 9/17/1996
WELL #: 1
SITE NAME: MARIE CANTOLINO
OWNER: Mariee Cantolino
WELL LOC: ACREAGE,UPPER MANATEE RIVER ROAD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 300
WELL CASING DEPTH(ft): 300
WELL DIAMETER (in): 8
STATIC WATER DEPTH:

CONTRACTOR: TROUTMAN WELL DRILLING INC.
LICENSE NO: 1627
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

The Links Partnership, LTD /Attn: Greg Christovich
112 Seagate Avenue
Neptune Beach, FL 32266

MAP ID NUMBER: 69

Dist (Miles): 1.27

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4507
WUP REV #: 6
WTHDRWL #: 3
PERMIT ISSUED: 5/2/2003
PERMIT EXPIRED: 9/7/2012
PERMIT STATUS: Approved

PROJECT NAME: LINKS AT GREENFIELD PLANTATION
OWNER: The Links Partnership, Ltd
PERMITT The Links Partnership, Ltd
SECTION: 30
TOWNSHIP: 34
RANGE: 19

WELL STATUS: Plugged
WELL TYPE: Withdrawal of Groundwater
WELL USE: General Recreational
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: RECREATION/AESTHETIC
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Moore'S Dairy Farm Inc
11408 UPPER MANATEE RIVER RD
, FL

MAP ID NUMBER: 70

Dist (Miles): 1.30
Direction: N

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 300386
PERMIT ISSUED: 1/24/1977
WELL #: 1
SITE NAME: 300386 - 1
OWNER: Moore'S Dairy Farm Inc
WELL LOC: 11408 UPPER MANATEE RIVER RD

WELL USE: DOMESTIC
WELL TOTAL DEPTH(ft): 310
WELL CASING DEPTH(ft): 63
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 7

CONTRACTOR: LOWELL PEMELMAN & SON
LICENSE NO: 1013
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch Inc.
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 71

Dist (Miles): 1.31
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 842008
PERMIT ISSUED: 2/27/2015
WELL #: 1
SITE NAME: M6
OWNER: Schroeder-Manatee Ranch Inc.
WELL LOC: 4810 LORRAINE RD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 840
WELL CASING DEPTH(ft): 55
WELL DIAMETER (in): 10
STATIC WATER DEPTH: 30

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lennar Homes LLC
10481 Six Mile Cypress Parkway
Fort Myers, FL 33966-6460

MAP ID NUMBER: 72

Dist (Miles): 1.31
Direction: NW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 4443
WUP REV #: 10
WTHDRWL #: 47
PERMIT ISSUED: 1/27/2012
PERMIT EXPIRED: 1/27/2017
PERMIT STATUS: Approved

PROJECT NAME: Heritage Harbour
OWNER: Lennar Homes LLC
PERMITT Lennar Homes LLC
SECTION: 36
TOWNSHIP: 34
RANGE: 18

WELL STATUS: Existing
WELL TYPE: Monitor
WELL USE:
MONITOR TYPE (if appl): STAFF GAGE
MONITOR USE (if appl): LAKE WATER LEVEL

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 0
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 0

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Frank Losee
1212 110 STREET EAST
, FL

MAP ID NUMBER: 73

Dist (Miles): 1.31
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 743212
PERMIT ISSUED: 6/26/2006
WELL #: 1
SITE NAME: 743212 - 1
OWNER: Frank Losee
WELL LOC: 1212 110 STREET EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 200
WELL CASING DEPTH(ft): 90.2
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 25

CONTRACTOR: LLOYD CULBREATH WELL DRILLING
LICENSE NO: 9054
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch Inc.
Attn: Rex Jensen 14400 Covenant Way
Bradenton, FL 34202

MAP ID NUMBER: 74

Dist (Miles): 1.32
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 26
WTHDRWL #: 6
PERMIT ISSUED: 11/7/2012
PERMIT EXPIRED: 9/26/2026
PERMIT STATUS: Approved

PROJECT NAME: Schroeder - Manatee Ranch Inc.
OWNER: Schroeder-Manatee Ranch Inc.
PERMITT Schroeder-Manatee Ranch Inc.
SECTION: 5
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: RECREATION/AESTHETIC
PERMITTED DAILY AVG (gal): 424900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 1192000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 26
WTHDRWL #: 6
PERMIT ISSUED: 11/7/2012
PERMIT EXPIRED: 9/26/2026
PERMIT STATUS: Approved

PROJECT NAME: Schroeder - Manatee Ranch Inc.
OWNER: Schroeder-Manatee Ranch Inc.
PERMITT Schroeder-Manatee Ranch Inc.
SECTION: 5
TOWNSHIP: 35
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Withdrawal of Groundwater
WELL USE: Irrigation
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 424900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 1192000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Hunt Building Corp.
S.R. 70 & I-75
, FL

MAP ID NUMBER: 75

Dist (Miles): 1.32
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 521634
PERMIT ISSUED: 8/30/1990
WELL #: 1
SITE NAME: 521634 - 1
OWNER: Hunt Building Corp.
WELL LOC: S.R. 70 & I-75

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 198
WELL CASING DEPTH(ft): 77
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 30

CONTRACTOR: THE WATER WORKS
LICENSE NO: 9052
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SCHROEDER-MANATEE RANCH INC
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 76

Dist (Miles): 1.33

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 841244
PERMIT ISSUED: 1/22/2015
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: SCHROEDER-MANATEE RANCH INC
WELL LOC: 4810 LORRAINE RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 12
WELL CASING DEPTH(ft): 1
WELL DIAMETER (in): 1
STATIC WATER DEPTH: 3

CONTRACTOR: SUBSURFACE ENVIRONMENTAL
LICENSE NO: 11271
WELL DRILL: HYDRAULIC PUNCH

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

River Road Plantation Ltd & River Rd Plantation Golf Ptnshp
SR 64 NEW GOLF COURSE
, FL

MAP ID NUMBER: 77

Dist (Miles): 1.33
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 589436
PERMIT ISSUED: 3/14/1997
WELL #: 1
SITE NAME: RIVER ROAD PLANTA
OWNER: River Road Plantation Ltd & River Rd Plantatio
WELL LOC: SR 64 NEW GOLF COURSE

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 593
WELL CASING DEPTH(ft): 40
WELL DIAMETER (in): 8.75
STATIC WATER DEPTH:

CONTRACTOR: DAVID CANNON WELL DRILLING INC
LICENSE NO: 9069
WELL DRILL: NOT ENTERED

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee Co. Public Water Dept.
CALLER SERVICE 25010
, FL

MAP ID NUMBER: 78

Dist (Miles): 1.37
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 516103
PERMIT ISSUED: 2/1/1989
WELL #: 1
SITE NAME: 516103 - 1
OWNER: Manatee Co. Public Water Dept.
WELL LOC: CALLER SERVICE 25010

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 25
WELL CASING DEPTH(ft): 6
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: STEVEN FISHER
LICENSE NO: 2884
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lakewood Ranch Commerce Park Owners Association, Inc.
0 LAKEWOOD RANCH
N/A, FL

MAP ID NUMBER: 79

Dist (Miles): 1.37
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 758918
PERMIT ISSUED: 4/17/2007
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Lakewood Ranch Commerce Park Owners Ass
WELL LOC: 0 LAKEWOOD RANCH

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 25
WELL CASING DEPTH(ft): 25
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 0

CONTRACTOR: PSI
LICENSE NO: 9218
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Sewwtp
FARM LAND
, FL

MAP ID NUMBER: 80

Dist (Miles): 1.38
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 609929
PERMIT ISSUED: 9/2/1998
WELL #: 2
SITE NAME: 609929 - 2
OWNER: Sewwtp
WELL LOC: FARM LAND

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 14
WELL CASING DEPTH(ft): 14
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: PROFESSIONAL SERVICES INDUSTRIES
LICENSE NO: 9206
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SMR Communities, Inc.
FARM LAND
, FL

MAP ID NUMBER: 81

Dist (Miles): 1.39
Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 609945
PERMIT ISSUED: 9/2/1998
WELL #: 2
SITE NAME: 609945 - 2
OWNER: SMR Communities, Inc.
WELL LOC: FARM LAND

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 15
WELL CASING DEPTH(ft): 15
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: PROFESSIONAL SERVICES INDUSTRIES
LICENSE NO: 9206
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Manatee Co. Public Water Dept.
CALLER SERVICE 25010
, FL

MAP ID NUMBER: 82

Dist (Miles): 1.40

Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 515964
PERMIT ISSUED: 2/1/1989
WELL #: 1
SITE NAME: 515964 - 1
OWNER: Manatee Co. Public Water Dept.
WELL LOC: CALLER SERVICE 25010

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 23
WELL CASING DEPTH(ft): 13
WELL DIAMETER (in): 2
STATIC WATER DEPTH:

CONTRACTOR: STEVEN FISHER
LICENSE NO: 2884
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Ronald & Mariann Markham
5008 96TH STREET EAST
, FL

MAP ID NUMBER: 83

Dist (Miles): 1.44
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 681873
PERMIT ISSUED: 3/10/2003
WELL #: 1
SITE NAME: 681873 - 1
OWNER: Ronald & Mariann Markham
WELL LOC: 5008 96TH STREET EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 320
WELL CASING DEPTH(ft): 58
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 30

CONTRACTOR: C.V. GREEN WELL DRILLING
LICENSE NO: 9051
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Randy Giddens
11431 STATE ROAD 64
, FL

MAP ID NUMBER: 84

Dist (Miles): 1.46
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 681366
PERMIT ISSUED: 2/26/2003
WELL #: 1
SITE NAME: 681366 - 1
OWNER: Randy Giddens
WELL LOC: 11431 STATE ROAD 64

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 397
WELL CASING DEPTH(ft): 397
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 25

CONTRACTOR: HARRY CANNON WELL DRILLING
LICENSE NO: 1376
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

KOLZE, RALPH M III KOLZE, SUSAN M
7212 41ST AVE E
Bradenton, FL

MAP ID NUMBER: 85

Dist (Miles): 1.46
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 820319
PERMIT ISSUED: 4/9/2012
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: KOLZE, RALPH M III KOLZE, SUSAN M
WELL LOC: 7212 41ST AVE E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 185
WELL CASING DEPTH(ft): 62
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 40

CONTRACTOR: THOMPSON WELL DRILLING
LICENSE NO: 9326
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Sandlwood Business Park Lllc
0 NO ASSIGNED ADDRESS
N/A, FL

MAP ID NUMBER: 86

Dist (Miles): 1.46
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 773950
PERMIT ISSUED: 5/1/2008
WELL #:
SITE NAME: Proposed WCP Well
OWNER: Sandlwood Business Park Lllc
WELL LOC: 0 NO ASSIGNED ADDRESS

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR: ARTESIAN WELLS INC.
LICENSE NO: 9004
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lake Erie College Of Osteopathic
4800 LAKEWOOD RANCH BLVD
LWR, FL

MAP ID NUMBER: 87

Dist (Miles): 1.48
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 823992
PERMIT ISSUED: 9/14/2012
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Lake Erie College Of Osteopathic
WELL LOC: 4800 LAKEWOOD RANCH BLVD

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 161
WELL CASING DEPTH(ft): 39
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 40

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lake Erie College Of Osteopathic
4798 LAKEWOOD RANCH BLVD 34202 SCT
Bradenton, FL

MAP ID NUMBER: 88

Dist (Miles): 1.48
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 813204
PERMIT ISSUED: 6/6/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Lake Erie College Of Osteopathic
WELL LOC: 4798 LAKEWOOD RANCH BLVD 34202 SCT

WELL USE: PUBLIC SUPPLY - LIMITED U
WELL TOTAL DEPTH(ft): 180
WELL CASING DEPTH(ft): 120
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 40

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Polk, Arthur R
4914 96TH
N/A, FL

MAP ID NUMBER: 89

Dist (Miles): 1.49
Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 754951
PERMIT ISSUED: 1/30/2007
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Polk, Arthur R
WELL LOC: 4914 96TH

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 210
WELL CASING DEPTH(ft): 84
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 0

CONTRACTOR: WATERLINE WELL DRILLING
LICENSE NO: 9265
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

SCHROEDER-MANATEE RANCH INC
4810 LORRAINE RD
BRADENTON, FL

MAP ID NUMBER: 90

Dist (Miles): 1.50

Direction: E

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 841244
PERMIT ISSUED: 1/22/2015
WELL #:
SITE NAME: Proposed WCP Well
OWNER: SCHROEDER-MANATEE RANCH INC
WELL LOC: 4810 LORRAINE RD

WELL USE: MONITOR
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 1
STATIC WATER DEPTH:

CONTRACTOR: SUBSURFACE ENVIRONMENTAL
LICENSE NO: 11271
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

manatee county
4751 66th street west
Bradenton, FL

MAP ID NUMBER: 91

Dist (Miles): 1.54

Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 828798
PERMIT ISSUED: 4/30/2013
WELL #: 2
SITE NAME: Proposed WCP Well
OWNER: manatee county
WELL LOC: 4751 66th street west

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 16.8
WELL CASING DEPTH(ft): 16.8
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 5

CONTRACTOR: Terracon
LICENSE NO: 7352
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

MELOCHE, BRIAN L
5004 96TH ST E 34211 SCT
Bradenton, FL

MAP ID NUMBER: 92

Dist (Miles): 1.54

Direction: S

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 811127
PERMIT ISSUED: 3/15/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: MELOCHE, BRIAN L
WELL LOC: 5004 96TH ST E 34211 SCT

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 300
WELL CASING DEPTH(ft): 140
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 30

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Randy Giddens
1220 117TH STREET EAST
, FL

MAP ID NUMBER: 93

Dist (Miles): 1.56
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 642841
PERMIT ISSUED: 10/5/2000
WELL #:
SITE NAME: 642841 - 1
OWNER: Randy Giddens
WELL LOC: 1220 117TH STREET EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in): 4
STATIC WATER DEPTH:

CONTRACTOR: LLOYD CULBREATH WELL DRILLING
LICENSE NO: 9054
WELL DRILL:

FDOH WELL SURVEILLANCE PROGRAM
PRIVATE WATER WELL DATA

Report Date: 7/16/2015

(WELLSADOHN)

PERMIT NUMBER AND LOCATION:

AAH1270

6907 36TH AVE E
BRADENTON, FL 34208

OWNER INFO:

WELL PERMIT NO:
COUNTY: MANATEE

MAP ID NUMBER: 94
Dist (Miles): 1.57
Direction: W

WELLSADOHN

WELL TYPE: Private
WELL CASING: PVC
ACTION:

WELL STATUS: ACTIVE
WELL DEPTH: 0
COMMENTS:

WATER USE: POTABLE
CASING LENGTH: 0

SANITARY SEAL?: Yes
CASING DIAMETER: 4

CONTAMINANT INFO:

	PETROLEUM:	SOLVENT:	NITRATES:	EDB:	METALS:	VOC'S:	ARSENIC:	PESTICIDES:
LAST SAMPLED:								
LAST RESULTS*:	6	6	6	6	6	6	6	6
HIGH RESULTS*:	0	0	0	0	0	0	0	0

* 0-Not sampled in last 12 mos, 1-Sampled but below detect level, 2- < 1/4 MCL/HAL , 3- >= 1/4 but <1/2 MCL/HAL, 4- >= 1/2 MCL/HAL, 5- >=MCL/HAL, 6- Never Sampled

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Sandalwood Business Park LLC
5002 LENA RD SCT
N/A, FL

MAP ID NUMBER: 95

Dist (Miles): 1.61
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 777546
PERMIT ISSUED: 8/15/2008
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Sandalwood Business Park LLC
WELL LOC: 5002 LENA RD SCT

WELL USE: PLUGGED
WELL TOTAL DEPTH(ft): 89
WELL CASING DEPTH(ft): 89
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 17

CONTRACTOR: ARTESIAN WELLS INC.
LICENSE NO: 9004
WELL DRILL: PLUGGED BY APPROVED METHOD

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Sandlewood Business Park LLC
5002 LENA RD
N/A, FL

MAP ID NUMBER: 96

Dist (Miles): 1.61
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 772388
PERMIT ISSUED: 3/17/2008
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Sandlewood Business Park LLC
WELL LOC: 5002 LENA RD

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 350
WELL CASING DEPTH(ft): 82
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 50

CONTRACTOR: ARTESIAN WELLS INC.
LICENSE NO: 9004
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Carino, Jorge T
11653 8TH AVE CIR E
Bradenton, FL

MAP ID NUMBER: 97

Dist (Miles): 1.61
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 810189
PERMIT ISSUED: 2/2/2011
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Carino, Jorge T
WELL LOC: 11653 8TH AVE CIR E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 440
WELL CASING DEPTH(ft): 200
WELL DIAMETER (in): 5
STATIC WATER DEPTH: 30

CONTRACTOR: AMERICAN DRILLING of Sarasota
LICENSE NO: 2224
WELL DRILL: ROTARY

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Rich Yonker
6209 111TH STREET EAST/BLK B
, FL

MAP ID NUMBER: 98

Dist (Miles): 1.62
Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 653146
PERMIT ISSUED: 5/17/2001
WELL #: 1
SITE NAME: 653146 - 1
OWNER: Rich Yonker
WELL LOC: 6209 111TH STREET EAST/BLK B

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 245
WELL CASING DEPTH(ft): 84
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 42

CONTRACTOR: PARRISH WELL DRILLING
LICENSE NO: 9132
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Creekwood East Corp Parkllc
4920 LENA RD
bradenton, FL

MAP ID NUMBER: 99

Dist (Miles): 1.62
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 768530
PERMIT ISSUED: 11/16/2007
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Creekwood East Corp Parkllc
WELL LOC: 4920 LENA RD

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 90
WELL CASING DEPTH(ft): 71
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 18

CONTRACTOR: THOMPSON WELL DRILLING
LICENSE NO: 9326
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Central Park Lifestyles, LLC
Lakewood Ranch Blvd
Bradenton, FL

MAP ID NUMBER: 100

Dist (Miles): 1.64
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 843728
PERMIT ISSUED: 5/14/2015
WELL #: 1
SITE NAME: Proposed WCP Well
OWNER: Central Park Lifestyles, LLC
WELL LOC: Lakewood Ranch Blvd

WELL USE: MONITOR
WELL TOTAL DEPTH(ft): 17
WELL CASING DEPTH(ft): 2
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 4

CONTRACTOR: PREFERRED DRILLING SOLUTION INC
LICENSE NO: 2613
WELL DRILL: AUGER

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen

, FL

MAP ID NUMBER: 101

Dist (Miles): 1.66

Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 59
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 10
TOWNSHIP: 36
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Alternative Use
WELL USE: Re-Use
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: LANDSCAPE/RECREATION
PERMITTED DAILY AVG (gal): 424900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 1192000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER USE PERMIT DATA:

PERMIT #: 7846
WUP REV #: 27
WTHDRWL #: 59
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS: Approved

PROJECT NAME:
OWNER: Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
PERMITT Schroeder-Manatee Ranch, Inc./Attn: Rex Jensen
SECTION: 10
TOWNSHIP: 36
RANGE: 19

WELL STATUS: Existing
WELL TYPE: Alternative Use
WELL USE: Re-Use
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE: AGRICULTURAL
PERMITTED DAILY AVG (gal): 424900
PERMITTED CROP PROT DAILY AVG (gals) 0
PEAK DAILY RATE (gals): 1192000

WELL CONSTRUCTION PERMIT DATA:

PERMIT #:
PERMIT ISSUED:
WELL #:
SITE NAME:
OWNER:
WELL LOC:

WELL USE:
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO:
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Lakewood Ranch Inc.
Lakewood Ranch
N/A, FL

MAP ID NUMBER: 102

Dist (Miles): 1.69
Direction: SE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 757492
PERMIT ISSUED: 3/19/2007
WELL #:
SITE NAME: Proposed WCP Well
OWNER: Lakewood Ranch Inc.
WELL LOC: Lakewood Ranch

WELL USE: MONITOR
WELL TOTAL DEPTH(ft):
WELL CASING DEPTH(ft):
WELL DIAMETER (in):
STATIC WATER DEPTH:

CONTRACTOR:
LICENSE NO: 9001
WELL DRILL:

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Edward Brown
7319 52ND DRIVE EAST
, FL

MAP ID NUMBER: 103

Dist (Miles): 1.69
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 530222
PERMIT ISSUED: 9/24/1992
WELL #: 1
SITE NAME: 530222 - 1
OWNER: Edward Brown
WELL LOC: 7319 52ND DRIVE EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 140
WELL CASING DEPTH(ft): 66
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 10

CONTRACTOR: C. V. GREEN WELL DRILLING
LICENSE NO: 1360
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

GILCHRIST, LARRY D GILCHRIST, ELSIE L
4804 78TH ST E
N/A, FL

MAP ID NUMBER: 104

Dist (Miles): 1.72
Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 813768
PERMIT ISSUED: 6/21/2011
WELL #: 4
SITE NAME: Proposed WCP Well
OWNER: GILCHRIST, LARRY D GILCHRIST, ELSIE L
WELL LOC: 4804 78TH ST E

WELL USE: IRRIGATION - LANDSCAPE
WELL TOTAL DEPTH(ft): 18
WELL CASING DEPTH(ft): 18
WELL DIAMETER (in): 2
STATIC WATER DEPTH: 7

CONTRACTOR:
LICENSE NO:
WELL DRILL: HAND DRIVER (WELL POINT, SAND POINT)

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Gary Howard
5109 76TH STREET EAST
, FL

MAP ID NUMBER: 105

Dist (Miles): 1.72

Direction: SW

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 544861
PERMIT ISSUED: 10/22/1993
WELL #: 1
SITE NAME: 544861 - 1
OWNER: Gary Howard
WELL LOC: 5109 76TH STREET EAST

WELL USE: IRRIGATION
WELL TOTAL DEPTH(ft): 150
WELL CASING DEPTH(ft): 76
WELL DIAMETER (in): 3
STATIC WATER DEPTH: 15

CONTRACTOR: THE WATER WORKS
LICENSE NO: 9052
WELL DRILL: CABLE TOOL

WATER MANAGEMENT DISTRICT WELL DATA

(WELLSWFWMD)

OWNER/PERMITTEE NAME AND ADDRESS:

Edward Guimond
902 117TH STREET EAST
, FL

MAP ID NUMBER: 106

Dist (Miles): 1.72

Direction: NE

SWFWMD

WATER USE PERMIT DATA:

PERMIT #:
WUP REV #:
WTHDRWL #:
PERMIT ISSUED:
PERMIT EXPIRED:
PERMIT STATUS:

PROJECT NAME:
OWNER:
PERMITT
SECTION:
TOWNSHIP:
RANGE:

WELL STATUS:
WELL TYPE:
WELL USE:
MONITOR TYPE (if appl):
MONITOR USE (if appl):

PREDOMINANT WATER USE:
PERMITTED DAILY AVG (gal):
PERMITTED CROP PROT DAILY AVG (gals)
PEAK DAILY RATE (gals):

WELL CONSTRUCTION PERMIT DATA:

PERMIT #: 689512
PERMIT ISSUED: 9/9/2003
WELL #: 1
SITE NAME: 689512 - 1
OWNER: Edward Guimond
WELL LOC: 902 117TH STREET EAST

WELL USE: DOMESTIC
WELL TOTAL DEPTH(ft): 300
WELL CASING DEPTH(ft): 65
WELL DIAMETER (in): 4
STATIC WATER DEPTH: 10

CONTRACTOR: C.V. GREEN WELL DRILLING
LICENSE NO: 9051
WELL DRILL: CABLE TOOL

Agency List Descriptions

Florida Department of Environmental Protection (FDEP)

FDEP Public Water System Basic Facility Report(FLPWS)

The FDEP Dinking Water Program Basic Facility Report contains information on the location and type of public water systems regulated by the department.

Agency File Date: 5/3/2013 **Received by EDM:** 3/17/2014 **EDM Database Updated:** 3/17/2014

Florida Department of Health (FDOH)

FDOH Well Surveillance Program Public Water Wells(WELLSADOHC)

The FDOH Well Surveillance group manages several programs to identify and monitor areas in Florida where contaminated drinking water is suspected and may pose a threat to public health. The section coordinates with the County Health Departments (CHDs) to locate potable wells and conduct water sampling for contaminants of concern. This report contains data on public water wells that is contained in the Well Surveillance Program database.

Agency File Date: 5/1/2014 **Received by EDM:** 5/5/2014 **EDM Database Updated:** 5/6/2014

FDOH Well Surveillance Program Private Water Wells(WELLSADOHN)

The FDOH Well Surveillance group manages several programs to identify and monitor areas in Florida where contaminated drinking water is suspected and may pose a threat to public health. The section coordinates with the County Health Departments (CHDs) to locate potable wells and conduct water sampling for contaminants of concern. This report contains data on private water wells that is contained in the Well Surveillance Program database.

Agency File Date: 5/1/2014 **Received by EDM:** 5/5/2014 **EDM Database Updated:** 5/6/2014

Water Management District (WMD)

SFWMD Water Use Regulation Facility Site Report(WELLSFWMD)

The South Florida Water Management District (SFWMD) Water Use Regulation Facility Site database contains of information on permitted SFWMD well, pump and culvert locations as specified on Water Use Permits.

Agency File Date: 1/16/2015 **Received by EDM:** 1/16/2015 **EDM Database Updated:** 1/16/2015

SJRWMD Water Well and Pump Permit Report(WELLSJRWMD)

The St Johns River Water Management District (SJRWMD) Consumptive Use Well Permit Database contains information on the location and characteristics of SJRWMD permitted water well stations.

Agency File Date: 11/25/2013 **Received by EDM:** 11/25/2013 **EDM Database Updated:** 1/10/2014

SWFWMD Water Well Withdrawal and Permit Report(WELLSWFWMD)

The Southwest Florida Water Management District (SWFWMD) Water Use Permit and Well Construction Permit databases contain information on the location and characteristics of SWFWMD permitted water wells.

Agency File Date: 7/14/2015 **Received by EDM:** 7/14/2015 **EDM Database Updated:** 7/16/2015

Part I 1a, b, c, d and e: GEOTECHNICAL REPORTS

The following geotechnical reports were referenced in the application in Part I. These reports were provided to the Department in the 2010 application, bound separately.

1. "COMPILATION OF HYDROGEOLOGICAL AND GROUNDWATER DATA FOR LENA ROAD LANDFILL STAGE II AREA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED AUGUST 29, 1985.

2. "SITE EXPLORATION PROPOSED SLURRY WALL LEACHATE CONTROL SYSTEM LENA ROAD LANDFILL, STAGE II, MANATEE COUNTY, FLORIDA" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED OCTOBER 31, 1988.

3. "PROGRESS REPORT SLURRY WALL CONSTRUCTION LENA ROAD LANDFILL" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED JULY 22, 1989 THROUGH AUGUST 18, 1989.

4. "PROGRESS REPORT SLURRY WALL CONSTRUCTION LENA ROAD LANDFILL" REPORT PREPARED BY ARDAMAN & ASSOCIATES, INC., DATED JUNE 19, 1989 THROUGH JULY 21, 1989.

5. "REPORT OF GEOTECHNICAL ENGINEERING SERVICES LENA ROAD LANDFILL STAGE 2 MANATEE COUNTY" PREPARED BY ANDREYEV ENGINEERING, INC., DATED SPETEMBER 30, 2010.

Part I 1.b: SINKHOLE POTENTIAL INVESTIGATION

An evaluation of the sinkhole occurrences on-site was address in the Andreyev reported referenced above. According to the conclusions of that report, the sinkhole potential at this site is classified as low.

Part I 1.d.(1): FOUNDATION BEARING CAPACITY ANALYSIS

The foundation bearing capacity analysis is provided in the Andreyev report referenced above.

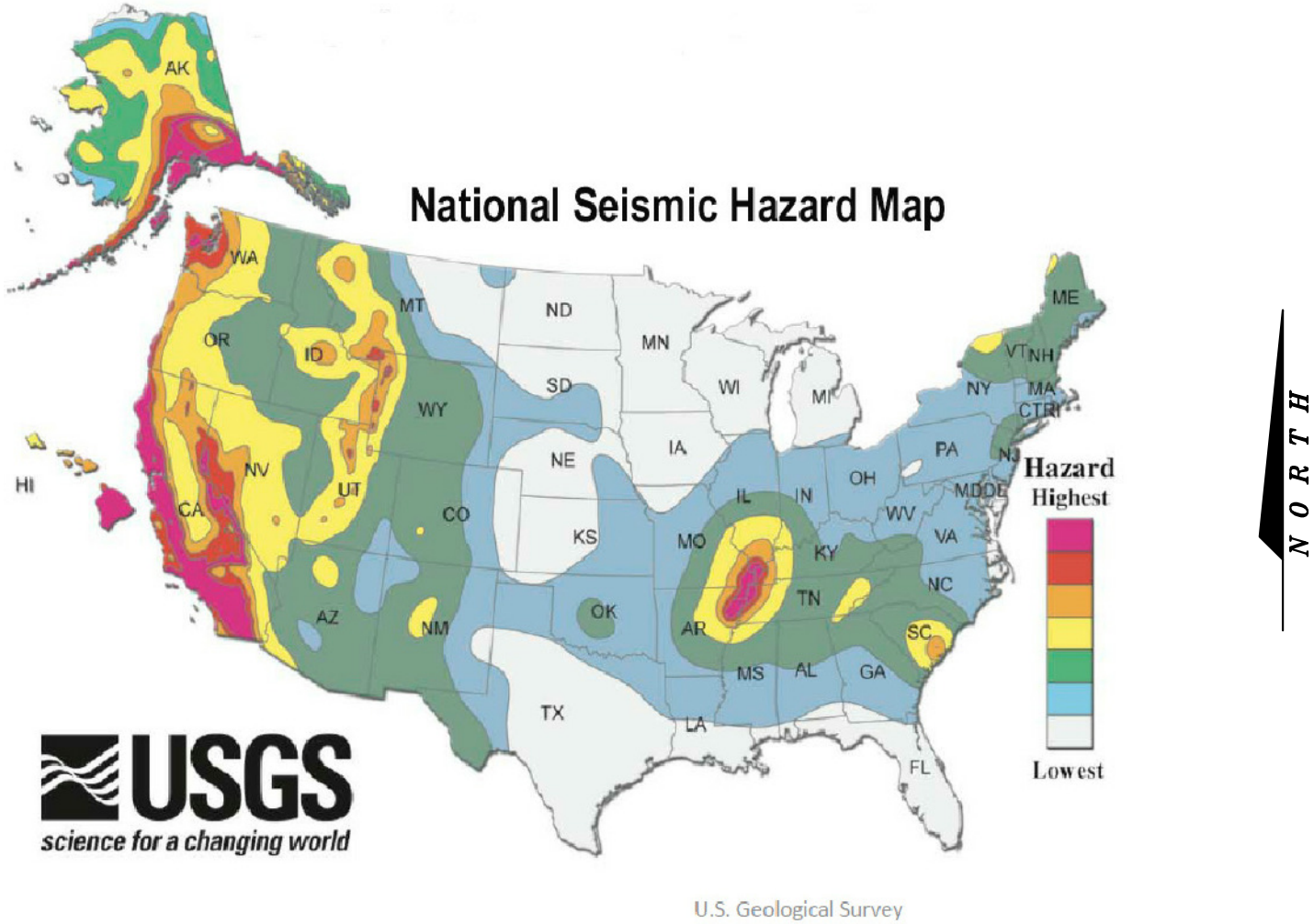
Part I 1.d.(3): SLOPE STABILITY ANALYSIS

The a slope stability analysis was provided in the Andreyev report referenced above using the current design configuration of 4H:1V side slopes between 20-foot wide terraces at El. 55, El. 75. El. 95 and El. 115 +/- and 4% slope to maximum landfill El. 136. The perimeter landfill berm is at crest El. 38 +/-.

The results of the analysis indicated that the minimum factor of safety against failure encountered was about 1.68, which is adequate as compared to the minimum acceptable of 1.5.

Part I 1.f.: SEISMIC IMPACT

The original geotechnical investigation did not detect any faults or unstable areas in or around the landfill site that would affect the construction or stability of the landfill. There is no seismic impact on the stability of the landfill. As shown on Figure I-1, Seismic Risk Map of the United States from the Uniform Building Code, the landfill is within Zone 0, which is a zone designated as "No Damage."



REVISION: JULY 30, 2015

ATKINS	MANATEE COUNTY LENA ROAD LANDFILL OPERATIONS PERMIT RENEWAL 2015	SEISMIC RISK MAP OF THE UNITED STATES	FIGURE I-1

PART J

VERTICAL EXPANSION OF LANDFILLS – NOT APPLICABLE

MANATEE COUNTY
LENA ROAD CLASS I LANDFILL
OPERATIONS PLAN

October 27, 2015

Part K

Prepared by:
Manatee County Government
Utilities Department, Solid Waste Division
3333 Lena Road
Bradenton, Florida 34211
941-748-5543

Contents

Contents

1.0 Trained Operators

Manatee County Government personnel operate the Lena Road Landfill. The County requires at least one trained landfill operator certified in accordance with F.A.C., Chapter 62-701.500 (1) and one spotter at the working face at all times during waste disposal operations. The spotter is responsible for guiding vehicles and for assisting code enforcement with enforcing provisions for controlling the waste received. An example of a typical workweek staff schedule is shown in Figure K-1.

General daily operations are as follows:

Time	Activity
7:00 am	Landfill Operations Supervisors, Solid Waste Disposal Chiefs and/or the Solid Waste Maintenance Chief (all certified, trained operators) arrive; distribute daily assignments and checks attendance and equipment sheets. The equipment moves to the working area to prepare the roads and sites for that working day. At least one trained operator is always on site during operations. At least one trained spotter is assigned to the working face each time waste is received to inspect each load from the ground level.
8:00 am	The Scalehouse opens and traffic is routed to the appropriate disposal area.
9:00 am	Personnel begin the morning break times
11:30 pm	Personnel begin the lunch break times
2:00 pm	Personnel begin the afternoon break times
5:00 pm	The Scalehouse closes, entry gates are closed, and the working faces are cleared and covered with approved cover material.
5:45 pm	Operators leave work sites and cleanup equipment.
6:00 pm	Equipment and buildings are secured; alarm set, gates locked and personnel depart.

Landfill Operations - Typical Workweek Staff Schedule

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	
Keith Jones Disposal Chief	Keith Jones Disposal Chief	Keith Jones Disposal Chief	Keith Jones Disposal Chief		
Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	
Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator		
Darrel Seegmiller Landfill Operator	Darrel Seegmiller Landfill Operator			Darrel Seegmiller Landfill Operator	Darrel Seegmiller Landfill Operator
Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	
Mike George Landfill Operator	Mike George Landfill Operator			Mike George Landfill Operator	Mike George Landfill Operator
Tim Harper Landfill Operator	Tim Harper Landfill Operator			Tim Harper Landfill Operator	Tim Harper Landfill Operator
		Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief
Juan Garza Landfill Operator	Juan Garza Landfill Operator		Juan Garza Landfill Operator	Juan Garza Landfill Operator	
		Don Lusby Landfill Operator	Don Lusby Landfill Operator	Don Lusby Landfill Operator	Don Lusby Landfill Operator
		Danny Newman Landfill Operator	Danny Newman Landfill Operator	Danny Newman Landfill Operator	Danny Newman Landfill Operator
Matt Stull Landfill Operator	Matt Stull Landfill Operator	Matt Stull Landfill Operator	Matt Stull Landfill Operator		
Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	
Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	
Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	
John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	
Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	
Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	
Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	

Note: This schedule is updated as needed

FIGURE K - 1

2.0 Operations Plan

a. Designation of Responsible Operating and Maintenance Personnel

The Manatee County Solid Waste Management Facility (Landfill) is owned by Manatee County Government and operated under the direction of the Utilities Department, Solid Waste Division. An After Hours Contact List is provided in Table K-1, and a list of landfill positions is given below:

Solid Waste Division Manager	Landfill Superintendent *
Landfill Operation Supervisor (2) *	Household Hazardous Waste Technician
Fiscal Specialist *	
Solid Waste Maintenance Chief *	
Solid Waste Disposal Chief (2)*	Office Assistant
Landfill Operator (14)*	Landfill Attendant*

* Trained spotters

b. Contingency Operations for Emergencies

In the event of an emergency, the County may close the landfill during the emergency event, but will maintain open access to the landfill after the emergency condition passes or the threat level drops. For example, the landfill will be closed during a hurricane, but opened after the hurricane has passed. On-site equipment may not be sufficient to maintain the excess volume of waste generated as a result of an emergency. If so, back-up landfill equipment will be rented within 24 hours from the County's approved bid list. Additionally, back-up equipment will be provided for equipment breakdowns and down time for routine maintenance. In the case of equipment failure or emergencies, rental equipment or equipment from other County agencies will be delivered to the site within 24 hours.

Emergency conditions at the landfill may occur as a result of natural weather events (tornado, flooding, hurricane, etc.) or fire. Staff is currently equipped to mobilize to alternative sites that will be designated as such in conjunction with the Manatee County Emergency Management Department. In the event that emergency conditions interrupt operations at the landfill, a contingency plan will be developed and implemented to establish temporary operations on a case-by-case basis, dependent on conditions at alternative sites such as the closed Erie Road Landfill. Such temporary operations will accept storm debris only, and will be terminated and disposal operations resumed at Lena Road Landfill as soon as practical. If the Lena Road Landfill cannot operate during an emergency, solid waste collection trucks will be diverted to Waste Management's Okeechobee Landfill.

When an emergency condition threatens the landfill operation, the following actions will be taken:

1. Daily cover shall be applied to all exposed refuse before a major storm arrives, if possible.
2. All landfill equipment shall be parked near any natural windscreens such as earthen mounds and berms.
3. All lightweight signs and equipment shall be secured.

4. When operation resumes, work shall commence in dry areas only (up from the active face).
5. Refuse shall not be disposed of in standing water.

Table K-1
Emergency and After Hours Contacts
Lena Road Landfill/Solid Waste Division

Person/Agency		Telephone Number	
Fire Department Battalion Captain Stacey Bailey Chief Byron Teates Manatee County Fire Rescue Administration Office: 3200 Lakewood Ranch Blvd Bradenton,FL 34211 First Responder: Station 2 803 60th Street Court East Bradenton, FL 34202		911 or Non-Emergency 941-751-5611	
Ambulance	911	Sheriff	911
Bomb Squad	911	Non-Emergency	941-747-3011
Public Safety Hazardous		911	
Vacant, Solid Waste Division Manager		H_____ C: _____ Office: 941-748-5543	
Bryan White, Landfill Superintendent		H: 941-322-2369 C: 941-812-2455	
Bob Bennett, Landfill Operations Supervisor		H: 941-758-1741 C: 941-704-7855	
Anthony Detweiler, Landfill Operations Supervisor		H: 941-322-8703 C: 941-812-8796	
Eric Siegfried, Solid Waste Disposal Chief		H: 941-756-3507 C: 941-730-6554	
Keith Jones, Solid Waste Disposal Chief		C: 941-704-6640	
Richard Jones, Solid Waste Maintenance Chief		C: 941-322-4104	
Cari Walz, Household Hazardous Waste Technician		H: 941-358-6820 C: 941-348-7123	

Person/Agency	Telephone Number
David Pickup, Manager-Special Waste	C: 941-962-7087
Jeanne' Detweiler, Superintendent Solid Waste Enforcement	C: 941-812-4301
Debora Braziel-Jones, Solid Waste Collections Supervisor	H: 941-350-9399
Barb Grunas, Solid Waste Collections Supervisor	County Cell: 941-405-9817
Department of Environmental Protection Melissa Madden	Office: 813-470-5700 Direct: 813-4705795

Fire Event

Small fires on the working face will be controlled by a water wagon, bulldozer or landfill compactor and ample water and cover material to extinguish the fire. On-site stockpiles of soil cover material are available for suppressing fires. In the event an uncontrollable fire does occur at the landfill site, the East Manatee Fire Rescue District (941-751-5611) is the responding Department and will be called immediately. The East Manatee Fire Rescue District presently maintains a fire station approximately 3.5 miles west of the facility. In the event of a fire or other emergency, the landfill operator will notify the FDEP within twenty-four (24) hours by telephone and within seven (7) days a written report will be submitted describing the origins of the emergency, actions taken, result of the actions taken, and an analysis of the success or failure of the actions.

A hot load area is provided in a location away from the working face to allow vehicles arriving at the landfill with a fire in their load to dump quickly in an area where the material can be spread out and quickly sprayed by the water wagon. All water sprayed on hot loads will be managed as leachate. The location of the hot load area will change from time to time with the changing working face locations. Hot loads will not be dumped on the working face until sufficiently cool to avoid combustion.

The landfill has accommodations for wet weather solid waste disposal for the residential or small business patrons. The location of the wet weather operations area changes depending upon progression of the fill sequence. The area is bermed and a stabilized tipping surface is provided.

The solid waste disposed of in the wet weather area is loaded into dump trucks and transported to the working face for proper disposal. The wet weather area is also cleaned at the end of each day in order to provide proper litter and vector control.

c. Control of Types of Materials Received

Procedures for observing waste as it is brought to the landfill and unloaded are provided in Section K.2.e. The load-checking program is described in Section K.6. The landfill may dispose of Class I solid waste as defined in 62-701.200 (13).

The following separate areas are maintained for special wastes:

1. Lead-Acid Battery Collection Area
2. Household Hazardous Waste Collection Site
3. White Goods/Scrap Metal Storage Area
4. Yard Waste Processing Area
5. Tire Storage Area
6. Freon Containing Staging Area
7. E-Scrap

Special wastes such as white goods, tires, and yard wastes, require special handling and management. The locations for the Waste Tire Facility, White Goods/Scrap Metals Facility, Household Hazardous Waste Drop-off Facility and Yard Waste Facility are shown on Sheet C-2 of the Fill Sequence Plan. The County temporarily stores white goods and whole tires prior to processing. The white goods are stored in an upright position until such time as the contracted commercial recyclers remove them. Waste tires are stored in the permitted waste tire site prior to removal by the recycler. Tires mixed in loads are removed from the active face. Yard wastes are processed on site by a contracted vendor and removed from the site for re-use in land applications or waste-to-energy plants as fuel. Waste types not accepted for landfilling include all hazardous wastes, all infectious wastes, pesticides and unexpended pesticide containers, free liquids, flammable and volatile wastes, and radioactive wastes.

Asbestos

Asbestos waste haulers are required to notify the landfill operator in advance and provide information on the estimated volume and delivery date of friable asbestos. All incoming asbestos material is required to comply with all applicable permit conditions and to be wet down and double bagged. Asbestos will not be accepted during adverse weather conditions. Asbestos is covered with non-asbestos containing waste or soil and the location will be recorded. Additional procedures for handling asbestos are given in Section K-14.0.c Special Waste Handling - Asbestos.

Hazardous Waste

If hazardous wastes are located at any area of the landfill, the area must be isolated and management notified immediately. Management/Supervisory staff must notify the below listed agencies dependent on the type of material brought to the landfill.

Management/Supervisory staff must notify the following offices for handling and proper disposal of hazardous wastes:

1. Environmental Management Department - (941) 742-5980
2. Sheriff's Department/HazMat Section - (941) 721-2693
3. Utilities Department Director - (941) 792-8811, Extension 5323
4. Household Hazardous Waste Technician (941)348-7123
   (Household Hazardous Waste & E-Scrap Only)

All events regarding receipt of non-household hazardous waste material are kept at the landfill office.

A brief outline of the following materials/programs is given below.

Typical household hazardous wastes (HHW) are as follows:

paint	pesticides	used motor oil	ammunition
herbicides	aerosol cans	propane tanks	flares
gasoline	mercury containing devices	cleaning supplies	

The Household Hazardous Waste Technician (Tech) responsible for operation of the Household Hazardous Waste Collection and Storage Facility must be notified if HHW material is to be disposed. The Tech will arrange for removal and proper disposal. The maximum onsite storage and frequency for removing these recyclables from the site is as follows:

- Used oil (up to 1000 gallons) is to be removed quarterly
- Paints (up to 16,600 gallons) are to be removed quarterly
- Batteries (up to 300 batteries) are to be removed quarterly
- Light bulbs (up to 800) are to be removed at least quarterly
- Electronic devices (up to 50,000 pounds) are to be removed quarterly
- Household Hazardous Waste (up to 2,500 pounds) are to be removed quarterly

A detailed Operations Plan for the HHW facility in provided in Attachment K-2

White Goods

All white goods containing Freon (e.g., refrigerators, air conditioners) are segregated from the waste stream and placed upright in the staging area. Freon is removed by a certified operator, and the item marked as being Freon free. The compressors are removed and oils drained off-site for collection by a licensed hazardous waste transporter under the direction of the scrap metal processor. The white goods are then moved to the general white goods/scrap metal area for collection by the scrap metal contractor at the location indicated on Sheet C-2 of the Drawings.

All white goods, as defined in 62-701.200 (141), entering the landfill in separated loads are sent directly to the designated white goods/scrap metal storage area to be collected by a private scrap metal contractor for recycling purposes.

Up to 400 tons of scrap metal and white goods (a maximum of 600 pieces of white goods) can be stored in this area. The minimum frequency for removal is every six months.

Yard Waste

All incoming yard waste is directed to the designated area to be processed on site by a contracted vendor and removed from the site for re-use in land applications or waste-to-energy plants as fuel. Mulch is also used for the wet weather area during rainy season to assure access to the tipping area during rain events. The minimum frequency for processing yard trash is once every six months or when 3,000 tons (12,000 cubic yards) are accumulated. The contracted vendor then removes the

shredded material for resale to various outlets for land applications or waste-to-energy plants for fuel. The fines generated are also utilized at the landfill and mixed with soil for use as initial cover.

Tires

Tires entering the landfill are directed to the permitted storage area. Large agricultural equipment tires and large or solid forklift tires that cannot be processed for recycling are sent to the landfill disposal area for disposal in the landfill. The contracted vendor removes the tires to a waste-to-energy facility for processing and use as a fuel additive. Removal by the vendors is conducted on an on-call basis.

Batteries

State regulations prohibit disposal of lead-acid batteries in a landfill. The County prohibits collection of batteries by its franchised waste haulers. The Solid Waste Management Act aids in providing for proper disposal by requiring that all entities that sell batteries at retail shall accept used batteries as trade-ins for new batteries.

The County accepts batteries at no cost to its residents who bring them to the landfill facility. Upon entering the scales, the transporter is advised to place all batteries in the storage shed located in the Community Drop Off area. In addition, batteries are accepted at the HHW Facility during its collection events.

The Household Hazardous Waste Technician conducts frequent inspections of the storage shed and HHW Facility to monitor the number of batteries on site. When the on-site count reaches 300, the contracted battery vendor is called to remove them for recycling and/or proper disposal.

The contracted vendor collects the batteries on an on-call basis. When the vendor arrives on site, they are met by the Household Hazardous Waste Technician who observes the transfer of batteries from the collection shed to the vendor's vehicle. The vendor must sign a battery log before the batteries are removed from the facility. The log is also signed by the Household Hazardous Waste Technician verifying the count of batteries removed. The collection agreement is renewed or updated on an annual basis.

d. Weighing Incoming Waste

The Scalehouse operations are supervised and operated by the Manatee County Utilities Department, Solid Waste Section. Three scales are located at the entrance to the landfill. Two are inbound and one is outbound. The weighing of waste is required prior to entering the landfill and weight records are reported to the Department quarterly. Vehicles that enter the electronic scales are recorded on an information management system. This system records the date, type of vehicle, weight, material to be disposed, daily transaction number, and any other information available pertaining to account name or status. The driver is directed to the appropriate disposal area by the scale attendant.

e. Vehicle Traffic Control and Unloading

The landfill facility is surrounded by fencing and other natural barriers that limit vehicle access to the landfill. Directional signs have been placed to safely direct vehicles to the current waste disposal area. These signs have large legible letters and are cleaned, refurbished and moved as necessary. The signs are strategically placed so that the route is clear to the drivers. In addition, verbal instruction is issued by the Scalehouse attendant as required. Fencing or temporary barricades are employed as additional traffic control features. Speed limit, safety, and prohibitive practice signs are also placed as necessary in order to encourage a safe, clean operating area.

The Disposal Chiefs direct disposal operations. The landfill attendant acts as the spotter at the active face. Unloading is permitted only at the designated tipping area next to the working face. At the fill areas, temporary signs and at least one spotter direct vehicles to the proper tipping areas. The spotter directs those persons requiring additional assistance. Haulers are responsible for unloading their own vehicles. Wastes requiring special handling are coordinated with and unloaded under the direct supervision of landfill personnel. Spotters shall be trained and stationed per 62-701.320 (15) (d) Spotter location. The spotter shall be stationed where they can inspect each shipment of waste for unauthorized waste. If spotters are located on heavy equipment spreading the waste at the working face, the heavy equipment operator shall be trained as a spotter and as a heavy equipment operator. When unauthorized waste is discovered, the operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop operation and notify another person on the ground or on other equipment who will come to the active area and remove the unauthorized waste before operations are resumed. Also, each load of waste must be visually inspected for unauthorized waste prior to being compacted. The spotter may move about the working face on foot or on a vehicle as needed to properly direct the positioning of vehicles for unloading and to observe waste as it is unloaded.

Any suspicious loads or vehicles are stopped by the Scalehouse staff for inspection. The County also has a random load inspection program in place as discussed in Section K.6. Spot checking also occurs at the active face. If the spotter detects prohibited, special or hazardous waste while the hauler is still present, the waste is reloaded into the vehicle and is removed from the site. If the hauler cannot be identified, it is the County's responsibility to remove the waste from the landfill for proper disposal.

f. Method and Sequence of Filling Waste

The Fill Sequence Plan from 2016 to 2036 is bound separately and included in Appendix B with the permit application.

g. Waste Compaction and Application of Cover

Waste is typically dumped at the toe of the active face and is spread over the face in a maximum two-foot lift with dozers. Upon completion of waste spreading, compactors typically roll the waste with six passes prior to spreading of additional waste. To achieve the optimum compaction, while minimizing initial cover usage, the active face slopes are maintained at approximately 5:1 (H:V).

The flatter the slope, the greater is the compaction rate and greater amount of soil to cover the waste. The 5:1 face slope provides a good compromise between compaction and soil usage. The compaction with the given equipment and working conditions is approximately 1,200 lb/cy.

Cover material for daily operations of the landfill is obtained from the designated stockpile area. The location for the Cover Material Stockpile is shown on Sheet C-2 of the Fill Sequence Plan drawings. The stockpile is located in the footprint of the Stage II Landfill, as shown on the Fill Sequence Plans located in Appendix B to this permit application. The landfill currently has sufficient cover material available for one year. The County has an open purchase order to buy cover soil as needed to supplement the on-site stockpiles. To minimize soil usage, Manatee County has purchased mechanically operated tarp-type alternate daily cover system (ADC). Tarps are laid across the working face and taken up the next day. Tarps are loaded to minimize the effects of wind uplift. If waste is not deposited on the working face within 24 hours, then soil is used as the cover material. The areas of the working face not covered by the tarps are covered with soil.

h. Operations of Gas, Leachate, and Storm Water Controls - Leachate management is described in K-8.0, gas monitoring in K-9.0 and storm water controls in K-10.0

i. Water Quality Monitoring - See Part L of this permit application.

j. Maintaining and Cleaning the Leachate Collection System – The entire LCRS was jetted and pressure cleaned in June and July 2015. The report on the pressure cleaning is provided in Appendix A to the permit application.

3.0 Landfill Records and Record Locations

The operating records consist of all records, reports, analytical results, demonstrations, and notifications required by Chapter 62-701, F.A.C., all permits and permit modifications, and training records. The operating records are maintained within the filing system at the landfill facility.

Operating records denoting events are maintained by the landfill staff in accordance with the Operational Permit. Some examples of daily operations of the landfill are:

Operation and maintenance of the facility
Special wastes monitoring
Manpower and equipment usage
Storm water and leachate issues
Compliance with permits, applicable rules, regulations and laws
Fill sequence plan adherence

4.0 Waste Records

Monthly waste records are kept on site and submitted to the FDEP quarterly. A sample report is included as Figure K-2.

FIGURE K-2

MANATEE COUNTY CLASS I LANDFILL
WASTE RECORDS

YEAR 2009

TOTAL WASTE RECEIVED AND WASTE TYPE	SOLID WASTE RECEIVED MONTHLY REPORTED IN TONS												TOTAL
	FIRST QUARTER			SECOND QUARTER			THIRD QUARTER			FOURTH QUARTER			FOR
(SEE NOTE BELOW) *	January	February	March	April	May	June	July	August	September	October	November	December	YEAR
TOTAL WASTE RECEIVED													
Household Waste	18.7	11.7	30.3	10.9	7.1	27.7							
Commercial Waste	12740.43	11234.2	12594.7	12360.78	12160	11889.6							
Ash Residue	0	0	0	0	0	0							
Incinerator by-pass Waste	0	0	0	0	0	0							
Construction & Demolition Debris	916	831.5	1243.5	998.2	724.1	964.7							
Treated Biomedical Waste	0	0	0	0	0	0							
Agricultural Waste	64.8	141	50.8	215.1	32.9	467.6							
Industrial Waste	0	0	0	0	0	0							
Yard Trash	2241.5	2309.9	3378.5	3924.2	2485	2484.8							
Sewage Sludge	226	131.2	176.7	690.8	586.1	430.7							
Industrial Sludge	0	0	0	0	0	0							

* The Landfill Operator shall:

1) Weigh all solid waste as it is received;
2) Record, in tons per day, the amount of solid waste received;
3) Estimate the amount received by waste type as listed in this table; and,
4) Compile the reports monthly, and send copies to the Department quarterly.

5.0 Access Controls

Access to the landfill is controlled by a six-foot high chain link fence along the west side of the landfill and a barbed-wire and/or field fence around the remainder of the site. The access gates are locked at the close of each business day. Signs indicating hours of operation, operating and permitting authorities, and directions for persons delivering waste are posted at the entrance. Additional signs are used along the site access roads and at the working face to direct traffic to the proper disposal areas.

6.0 Load Checks

The County has a random load inspection program in accordance with F.A.C. Chapter 62.701 and inspects at least three loads per week. Drivers with loads selected for random inspection are instructed to dump their loads at a designated location near the working face but segregated from other waste. The selected load is inspected to determine if the load contains any unauthorized waste. Spot-checking also occurs at the active face. The Load Inspection Form is included as Figure K-3.

If the spotter detects a load of unauthorized waste while the hauler is still present, the waste is reloaded into the vehicle and is removed from the site. If the hauler has left the site, attempts will be made to identify the generator, hauler, or other party responsible for shipping the waste. Identified responsible parties will be contacted and asked to remove the unauthorized waste. If the generator, hauler, or other party responsible for shipping the waste cannot be identified, or if they will not remove the waste, the County will remove the waste from the landfill for proper disposal.

If any regulated hazardous wastes are identified by random load inspection, or are otherwise discovered to be improperly deposited at Lena Road Landfill, the landfill operator shall notify the FDEP, the person responsible for shipping the wastes to the landfill and the generator of the wastes, if known. The area where the wastes are deposited shall be immediately cordoned off from public access. If the generator or hauler cannot be identified, the landfill operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.

A small quantity of unauthorized waste which must be stored on-site while awaiting removal for disposal will be stored in the household hazardous waste collection area until it can be removed by contractor for proper disposal. Waste quantities too large to store in the household hazardous waste collection area, will be isolated at the landfill face with temporary berms constructed around the waste to ensure containment of any surface runoff. The area will be properly marked with signs, and temporary fencing will be used to prevent unauthorized access to the material until it can be shipped off-site for proper disposal.

Sources found or suspected to be previously responsible for shipping regulated hazardous waste will be informed of landfill requirements and referred to FDEP for hazardous waste information. Subsequent shipments from such sources will be scrutinized for unauthorized or hazardous waste. Inspection results, information, and observations resulting from each random inspection will be recorded and retained at the landfill for at least three years.

Supervisors, landfill operators, and spotters are trained to identify unauthorized wastes or potential sources of regulated hazardous wastes. This training emphasizes familiarity with containers and labels typically used for hazardous wastes and hazardous materials. Controlling types of waste received is discussed in Section K.2.e.

LOAD INSPECTION FORM

DATE: _____ TIME: _____ INSPECTOR: _____

LOCATION: _____

DRIVER NAME: _____

COMPANY NAME: _____ DECAL #: _____

TAG #: _____ TRUCK DESCRIPTION: _____

ORIGIN OF WASTE: _____

WASTE COMPOSITION: _____

_____

NOTE QUANTITY OF THE FOLLOWING, IF APPLICABLE:

FLUORESCENT LAMPS (10 or more) _____

MERCURY CONTAINING DEVICES _____
Thermostats, Thermometers, Bilge Pumps, Manometers, Etc.

BIO-HAZARD MATERIALS FOUND _____

OTHER HAZARDOUS MATERIALS FOUND _____

TIRES, LEAD ACID BATTERIES _____

OIL BASED PAINT _____

IF YES, EXPLAIN CIRCUMSTANCES OF COLLECTION: _____

_____

IF YES, MANAGEMENT INFORMED: Yes _____ No _____

NAME AND TITLE: _____

7.0 Waste Compaction

a. Waste Layer Thickness

Waste is typically dumped at the toe of the working face and is spread over the face in a maximum of two-foot lifts prior to compaction. This procedure continues throughout the day for a typical lift thickness of no more than 10-feet.

b. First Waste Layer

The area to be filled has been completely covered by waste during previous permit periods. The first layer of waste placed above the leachate collection system in Stage II will be a minimum of four feet in compacted thickness and shall consist of selected wastes containing no large rigid objects that may damage the leachate collection system. Special care shall be exercised when filling around pump stations to prevent damage.

c. Slopes and Lift Depths

The exterior landfill side slope is constructed at 4:1 (H:V) or slightly steeper because settlement of the side slope causes a lesser slope to result in a final slope of no more than 4:1. Any temporary slopes for such structures as storm water diversion dikes, roads, excavations, etc. are constructed with slopes no steeper than 3:1. The lift depths shall be 10-feet or less. The typical minimum top slopes to promote drainage are generally one percent within the bermed working face, and two percent on the intermediate cover areas.

d. Working Face

The active face width is no greater than necessary to accommodate the peak number of disposal vehicles at one time. The wider the active face, the more cover soil is used. The County uses an active face of 150 feet in width. The working area of the active face has a slope of approximately 5 horizontal to 1 vertical. The objective for the dimensions of the active face is to maximize the volume to face surface ratio.

e. Initial Cover Controls

Materials used as initial cover include street sweepings, ditch cleanings, crushed glass, and/or a tarp as an alternative daily cover (ADC), soil, soil with up to 25% fines from the yard processing area, and recovered screen material (RSM) from FDEP permitted facilities. The tarp, when used, covers the working face with a weighted tarp. Currently, 100' x 40' tarps are used to cover the working face. Initial cover is applied daily at a minimum thickness of six inches. Soil with up to 25% fines (by volume) from yard trash processing, may be used for initial cover.

f. Initial Cover Applications

The tarp alternative daily cover system is the primary method of daily cover. Soil is used to supplement ADC and when conditions prohibit use of ADC. For those times when conditions prohibit the use of ADC, initial cover will be stockpiled near the active face for use at the end of each day. Dozers used for spreading waste will spread cover soil, when used or authorized equipment for tarp cover application will be utilized to cover the exposed refuse when ADC is used.

g. Intermediate Cover

An additional 12 inches of compacted cover soil (intermediate cover) is placed over six inches of initial cover, within seven days of cell completion, on areas that are not scheduled to receive wastes within 180 days. The top of the intermediate soil cover is graded at a minimum of two percent. These areas have sod to reduce erosion. Prior to placement of additional wastes in these areas, the intermediate cover is removed and stockpiled adjacent to the active face for use as initial cover.

h. Final Cover Timing

Final cover is placed after the landfill is closed.

i. Scavenging

Scavenging is prohibited.

j. Litter Policing

Litter fences are installed near the active face to capture wind-blown litter. Manatee County contracts a temporary labor employer to police the landfill property daily to ensure that litter outside the working area is picked up within 24 hours. Litter fences are also installed along the top of the banks, parallel with interior storm water ditches to minimize litter from entering the storm water management system.

k. Erosion Control

Erosion is controlled with sod and terraces. Manatee County has implemented an aggressive sod plan to protect intermediately covered side slopes from erosion. Temporary piping is used to remove runoff from the sod covered terraces. This temporary piping drains collected runoff for discharge into the perimeter storm water ditch system.

The landfill is inspected daily for signs of erosion and exposed solid waste. Erosion control measures are employed to correct any erosion which exposes waste or causes malfunction of the storm water management system. Such measures are implemented within three days of occurrence. Typically this requires replacing the eroded cover soil with clean cover soil, and

covering the soil with sod, or removing debris from the storm water inlets, pipes and outlet structures. If the erosion cannot be corrected within seven days of occurrence, the landfill operator shall notify the Department and propose a correction schedule.

8.0 Leachate Management

a. Leachate Level Monitoring

Leachate Collection and Removal System Overview

Stage I System

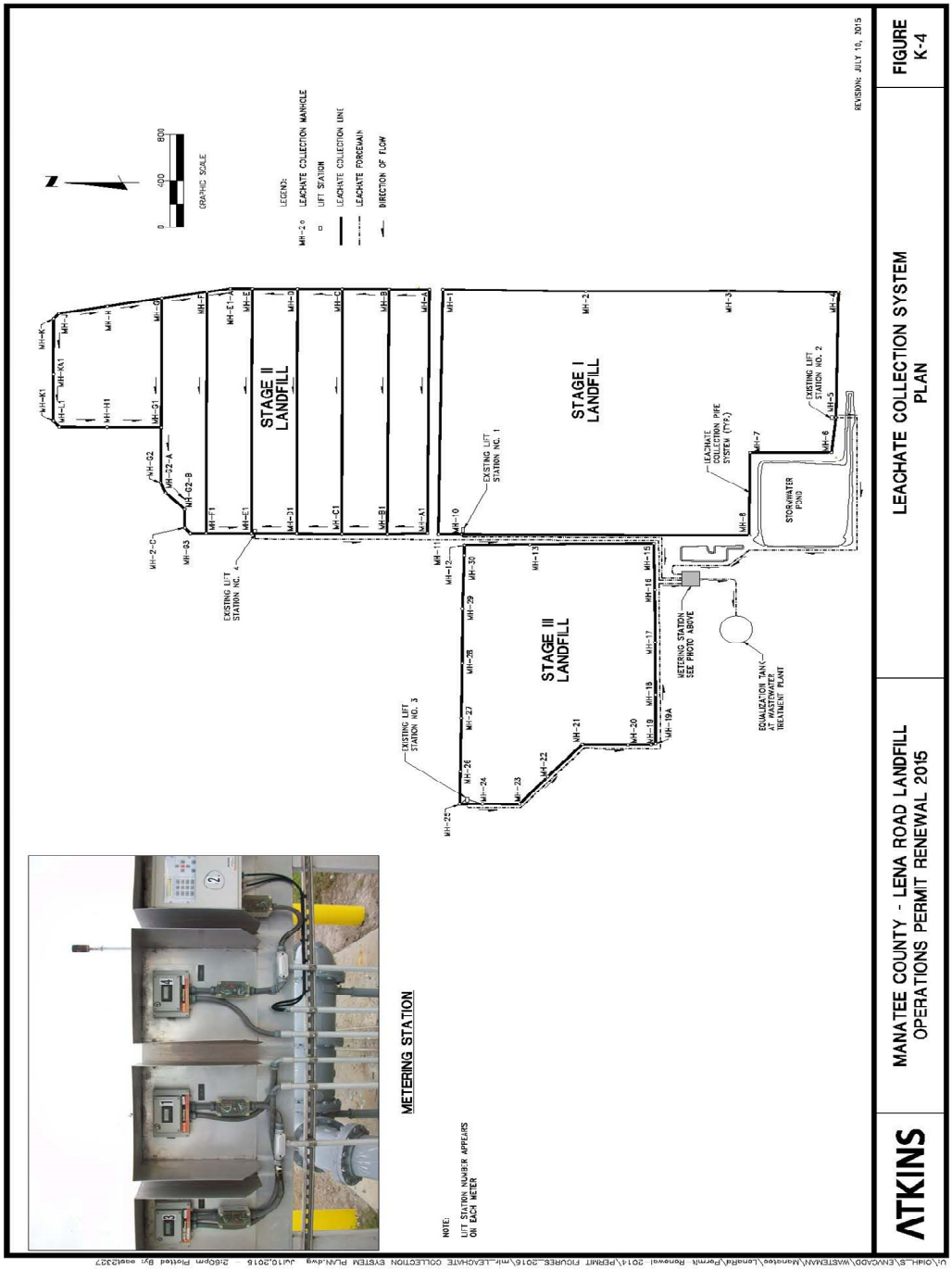
The Stage I Leachate Collection and Removal System (LCRS) as shown on Figure K-4 is a perimeter underdrain around Stage I. The underdrain is approximately 10 feet inside the perimeter slurry wall and approximately 12 feet below grade. The underdrain is an 8-inch, perforated pipe surrounded by aggregate. The pipe and aggregate are wrapped in a geotextile. Manholes and cleanouts are constructed to provide access for cleaning and repairs.

The slurry wall and underlying clay-confining unit is the containment/barrier system designed to prevent leachate movement to the outside surficial aquifer. The slurry wall and LCRS is the FDEP-approved method designed and constructed to minimize impacts, due to landfill operations, to the surrounding environment. The slurry wall is keyed into the underlying natural clay unit. The depth of the slurry wall varies, depending on depth to the clay unit.

Two lift stations are used to pump collected leachate to the wastewater treatment plant (WWTP). Lift Station No. 1 is located in the northwest corner of Stage I. Lift Station No. 2 is located at the southeast corner. Collected leachate enters the underdrain system and gravity flows back to either lift station. Both lift stations operate in the similar manner. Two submersible pumps pump collected leachate from the lift station. The first pump is activated when the low-level float senses leachate entering the lift station. The pump will operate until the float sensor deactivates. If leachate enters the lift station at a faster rate than the first pump can draw it down, the high-level float will activate the second pump to turn on. Upon deactivation of the high-level float, the second pump will shut off. Lift stations can operate in the hand or automatic setting. Both lift stations are set to operate in the automatic mode. Both pumps are 10HP 230/60 1735 RPM. From the lift stations, leachate is pumped through a 6-inch pipe to the adjacent WWTP storage tank. The flow in each forcemain will be individually metered. After the meters, the individual forcemains will be manifolded into a single 12-inch forcemain and connected to the waste treatment plant piping.

Stage II

The Stage II LCRS has a perimeter leachate collection trench and an underdrain to collect leachate which flows to Lift Station (Pump Station) 34. The location for the leachate collection system and pump station is shown on Figure K-4 and on the Fill Sequence Plan drawings. The slurry wall is keyed into the underlying clay unit to prevent movement of leachate to the outside surficial aquifer. Unlike Stages I and III, Stage II has collection laterals which run the entire


LEACHATE COLLECTION SYSTEM PLAN
FIGURE K-4
MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015
ATKINS
REVISION: JULY 10, 2015
STAGE I LANDFILL
STAGE II LANDFILL
STAGE III LANDFILL
STORMWATER POND
EXISTING LIFT STATION NO. 1
EXISTING LIFT STATION NO. 2
EXISTING LIFT STATION NO. 3
EXISTING LIFT STATION NO. 4
LEACHATE COLLECTION PIPE SYSTEM (TYP.)
METERING STATION SEE PHOTO ABOVE
EQUALIZATION TANK AT WASTEWATER TREATMENT PLANT
LEGEND:
LEACHATE COLLECTION MANHOLE
LIFT STATION
LEACHATE COLLECTION LINE
LEACHATE FORCEMAIN
DIRECTION OF FLOW
GRAPHIC SCALE
METERING STATION
NOTE:
LIFT STATION NUMBER APPEARS ON EACH METER

width of Stage II, spaced on 200 foot centers. However, until refuse is buried in Stage II, no leachate is produced so the inward gradient requirement around Stage II is not required or maintained. Ground water and rain water collected in the underdrain system is pumped into the Stage II perimeter storm water ditch. When solid waste is placed in Stage II, the pump station will pump the leachate to the wastewater treatment plant

Stage III

The Stage III LCRS is similar in design to Stage I and Stage II LCRS. The underdrain runs along the north, south, east, and west sides of Stage III, approximately 10 feet inside the slurry wall. The slurry wall ties into the west side of the Stage I slurry wall. The alignment of the slurry wall defines the footprint for Stage III. Leachate entering the underdrain gravity flows back to the lift station. One lift station, Lift Station 3, is located in the northwest corner of Stage III. Collected leachate is pumped to the WWTP. The lift station is similar in design and operation to the lift stations described for Stage I. Storm water runoff from Stage III drains from the surface through a sand trench into an underdrain. This runoff adds significantly to the total volume of leachate produced from Stage III. When above grade filling begins, top slopes will be graded to drain storm water to the perimeter storm water ditches.

Operational Performance Objectives

Objectives

It is the County's intent to maintain an inward gradient by collection and removal of leachate, with subsequent discharge to the WWTP. Staff will evaluate the following conditions in an effort to maintain water levels lower inside the slurry wall compared to levels outside the slurry wall, or to recover the inward gradient within thirty days.

- Water Levels
- WWTP Availability
- Pumping Rates
- Seasonal Variations
- Unexpected or Scheduled Downtime

Compliance Monitoring and Evaluation

Monitoring Reports

Figure K-5A is the typical Water Balance Report format used for the Lena Road Landfill. This report is used to quantify the volume of leachate generated on a daily and per month basis from Stages I and III and for when the Stage II Landfill becomes the active landfill.

Additional information includes:

- The volume of leachate pumped to the WWTP
- The volume of leachate pumped from Stages I and III
- Rainfall in gallons and inches

The content and format of the report are approved by the FDEP. Figure K-6A (K-6A will be used when the Stage II Landfill is active) is a typical Monthly Leachate Summary Report. This report is used to summarize the following information:

- Total leachate
- Total rainfall
- Total leachate treated by the WWTP

Figure K-5A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY

LENA ROAD LANDFILL

MONTHLY WATER BALANCE REPORT

APRIL, 2010

A	B	C	D		E	F	G	H
DATE	LEACHATE STAGE I Lift Station 1 (gallons)	LEACHATE STAGE I Lift Station 2 (gallons)	LEACHATE STAGE I TOTAL (gallons)	LEACHATE STAGE II TOTAL (gallons)	LEACHATE STAGE III TOTAL (gallons)	TOTAL LEACHATE PUMPED (gallons)	RAINFALL (inches)	RAINFALL (gallons)
01-Apr-10								
02-Apr-10								
03-Apr-10								
04-Apr-10								
05-Apr-10								
06-Apr-10								
07-Apr-10								
08-Apr-10								
09-Apr-10								
10-Apr-10								
11-Apr-10								
12-Apr-10								
13-Apr-10								
14-Apr-10								
15-Apr-10								
16-Apr-10								
17-Apr-10								
18-Apr-10								
19-Apr-10								
20-Apr-10								
21-Apr-10								
22-Apr-10								
23-Apr-10								
24-Apr-10								
25-Apr-10								
26-Apr-10								
27-Apr-10								
28-Apr-10								
29-Apr-10								
30-Apr-10								
01-May-10								
TOTAL	**0**	**0**	**0**		**0**	**0**	**0.00**	**0**
Leachate Pumped as Percentage of Rainfall			#DIV/0!		#DIV/0!			

Column Notes:

A - Date of reading.
B - Leachate pumped (gallons) from Stage I by lift station 1.
C - Leachate pumped (gallons) from Stage I by lift station 2.
D - Total Stage I leachate pumpage (B+C).
E - Leachate pumped (gallons) from Stage III.
F - Total leachate pumped to WWTP storage tank (D+E).
G - Rainfall (inches) recorded on this date.
H - Rainfall (gallons) calculated based on open area (G x Area x 27,156 gal/acre-in).

	Stage I (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	--	66.0	66.0
Intermediate Cover	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

Comments

9/10/2015 - 2:53 PM "0" = no data recorded Figure K-5A.xls jlm/PBS

FIGURE K-6A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY
LENA ROAD LANDFILL
MONTHLY LEACHATE TRACKING SUMMARY -- _____ Year

	B		C	D	E	F	G	H
MONTH	STAGE I LEACHATE (gallons)	STAGE II LEACHATE (gallons)	STAGE III LEACHATE (gallons)	TOTAL LEACHATE (gallons)	RAINFALL (inches)	RAINFALL (gallons)	STAGE I LEACHATE/ RAINFALL (%)	STAGE III LEACHATE /RAINFALL (%)
JANUARY								
FEBRUARY								
MARCH								
APRIL								
MAY								
JUNE								
JULY								
AUGUST								
SEPTEMBER								
OCTOBER								
NOVEMBER								
DECEMBER								
TOTAL	0		0	0	0.00	0	#DIV/0!	#DIV/0!

Notes:
1. (B) Total leachate pumped from Stage I.
2. (C) Total leachate pumped from Stage III.
3. (D) Total leachate (Column B+C) pumped to the WWTP storage tank.
4. (E) Total rainfall in inches.
5. (F) Total rainfall in gallons (Stage I and III Open Area of 168-acres x Rainfall)
6. (G) Stage I leachate pumped as a percentage of rainfall.
7. (H) Stage III leachate pumped as a percentage of rainfall.

Landfill Stage Land Areas

	Stage I	Stage III	TOTAL
	(acres)	*(acres)*	*(acres)*
Initial Cover	--	66.0	66.0
Intermediate Cov	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

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Figure K-6A.xls;jlm/PBS

Figure K-7A (K-7A will be used when the Stage II Landfill is active.) is a typical Ground Water Gradient Monitoring Report. Seventeen ground water monitoring wells are installed around the perimeter of the landfill, outside the slurry wall to monitor the shallow aquifer. Seventeen piezometers are installed around the perimeter of the landfill inside the slurry wall to measure depth to ground water of the shallow aquifer only. No ground water samples are collected from the piezometers. This report presents ground water elevations recorded at selected monitoring wells and compares them to the ground water elevations recorded at the piezometers. These locations are shown on Figure 1 in Attachment L-1, the Water Quality Monitoring Plan. The monitoring wells are located outside the slurry wall. The piezometers are located inside the slurry wall. An inward gradient is maintained when water elevations outside the slurry wall are higher than elevations recorded inside the slurry wall.

b. Operation and Maintenance of Leachate Collection System

Quantities from Lift Station Nos. 1, 2 and 3 are recorded and submitted to FDEP on a monthly basis using the forms on Figures K-5A and K-6A. When the Stage II Landfill becomes active, Pump Station 4 will be included. Flow rates are checked and confirmed semi-annually and kept at the Lena Road Landfill. If a failure in the underdrain system is suspected, the system is videoed. Every five years, or if a problem is suspected, the underdrain is cleaned by hydro jetting. Manholes are visually inspected on a monthly basis. When necessary, the manholes are cleaned to promote drainage towards the lift station.

c. Leachate as Hazardous Waste

Based on years of analysis, leachate from the landfill is not a hazardous waste. If at any time the leachate is determined to be hazardous, it will be managed in accordance with Rule 62-730, F.A.C. If the leachate analysis indicates a contaminate listed in 40 CFR Part 261.24 exceeds the regulatory level, a monthly sampling of leachate will begin and FDEP notified. If in any three consecutive months no listed contaminant is found to exceed the regulatory limit, the monthly sampling will be discontinued and the routine sampling schedule implemented.

d. Off-Site Discharge Agreements

All collected leachate is pumped to an equalization tank at the WWTP for treatment and disposal. Due to the common ownership of the landfill and the WWTP, the Utilities Department Director has issued a letter stating leachate will be accepted at this facility or at another off-site treatment plant as required.

e. Leachate Management Contingency Plan

In the event of short duration system failure, the landfill can store leachate. The County intends to maintain a one-foot inward gradient across the slurry wall so leachate would have to rise a foot before the facility was out of compliance with the permit condition to maintain an inward

FIGURE K-7A

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year:

Piezometers Inside Slurry Wall				Groundwater Monitoring Wells Outside Slurry Wall		
Piezometer	Riser Elevation	Leachate Elevation	Gradient Flow	Monitoring Well	Riser Elevation	Groundwater Elevation
P-3	40.36	26.46	*inward*	GW-3	39.40	34.10
P-4	40.78	22.08	*inward*	GW-4	40.53	32.82
P-5	40.73	20.82	*inward*	GW-5	39.90	32.08
P-6	40.74	19.78	*inward*	GW-6	38.95	31.30
P-7	40.60	18.82	*inward*	GW-7	39.49	29.38
P-8	40.21	18.59	*inward*	GW-8	39.75	28.45
P-9	39.97	19.36	*inward*	GW-9	39.65	28.95
P-10	39.86	19.25	*inward*	GW-10	38.34	29.25
P-11	40.52	22.39	*inward*	GW-11	38.26	30.29
P-12	43.28	29.37	*inward*	GW-12	42.09	31.64
P-13	44.78	30.35	*inward*	GW-13	44.79	32.46
P-14	45.09	29.79	*inward*	GW-14	39.63	33.86
P-15	45.57	30.89	*inward*	GW-15	42.33	35.17
P-16	44.67	24.67	*inward*	GW-16	44.41	41.41
P-17	44.28	29.60	*inward*	GW-17	42.19	35.03
P-18				GW-18		
P-19				GW-19		
P-20				GW-20		
P-21				GW-21		
P-22				GW-22		
P-23				GW-23		
P-24				GW-24		
P-25				GW-25		
P-26				GW-26		
P-27				GW-27		
P-28				GW-28		

Comments:

Date Data Collected:

Form Revised December 6, 2004

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Fig K-7A.xls:jlm/PBS

gradient. In the event of an extended power outage at the landfill (i.e., more than 7 days), the County will rent a portable generator to provide power to the lift stations.

Any treatment plant operational or power problems will be addressed by the treatment plant as a part of its permitting procedures. Generators are available to provide emergency power at the treatment plant.

Leachate will be trucked to the County's Southwest Treatment Plant or North Wastewater Treatment Plant, if necessary.

f. Leachate Generation Recording

Leachate generation records are reported on the forms in Figures K-6A and K-7A.

g. Precipitation/Leachate Comparison

Precipitation is compared to leachate collected using the form in Figures K-6A and K-7A.

h. Procedures for Water Pressure Cleaning or Video Inspecting Leachate Collection System

Every five years, or if a problem is suspected, the leachate collection pipes are pressure cleaned. Video inspection is not used unless there is a suspected problem or blockage.

9.0 Gas Monitoring

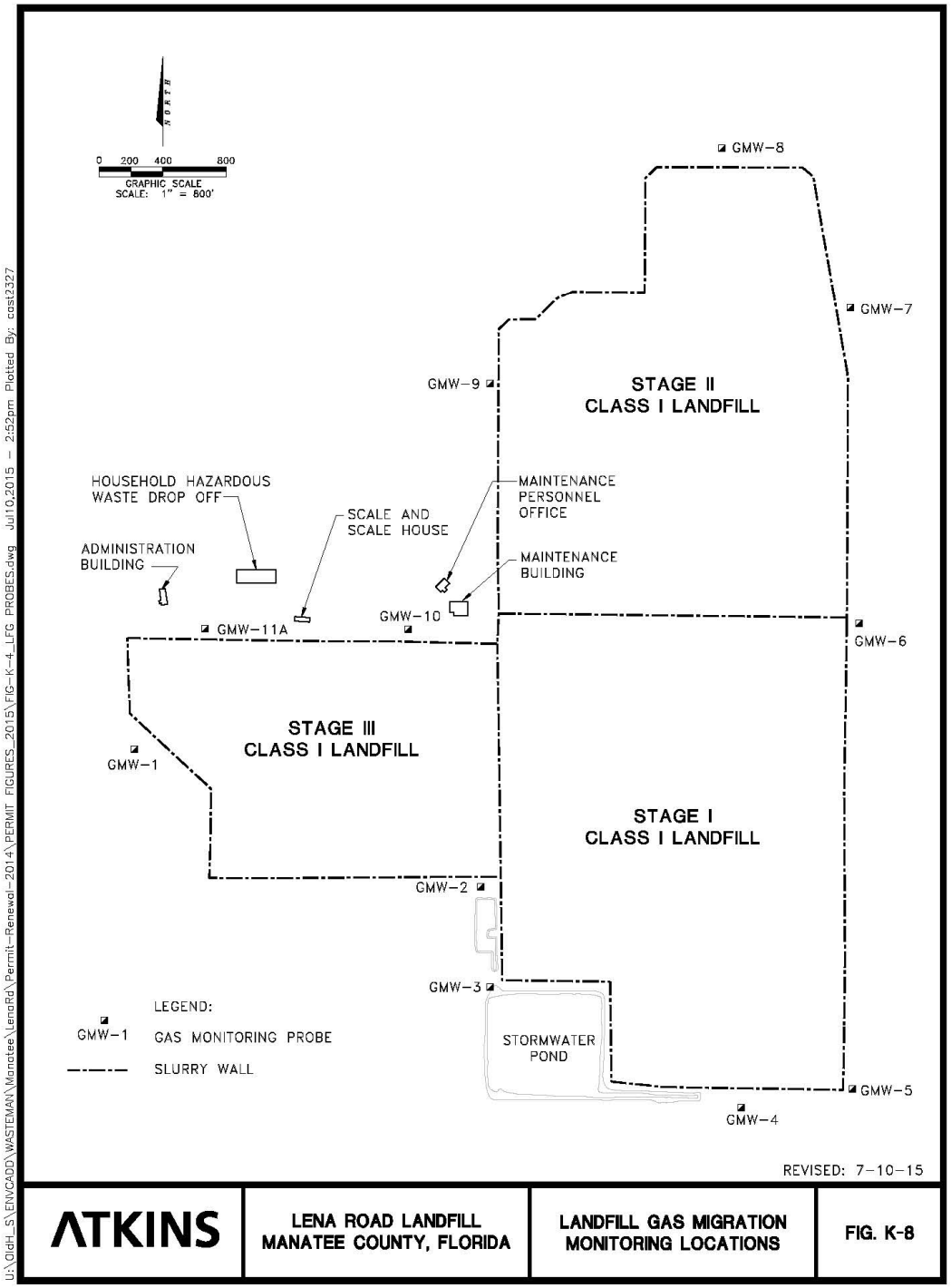
Gas monitoring is performed on a monthly and quarterly basis by a qualified solid waste engineer or consultant. The gas monitoring at the site is divided into three separate tasks: Quarterly monitoring of the gas well and points; quarterly monitoring of surface emissions on the closed portions of the landfill; and monthly monitoring of the landfill gas extraction system. Each task will be discussed in detail below.

a. Gas Well and Point Monitoring

On a quarterly basis, the solid waste engineer monitors landfill gas emissions at eleven gas wells located on the site as shown on Figure K-8. The gas monitoring wells are located along the perimeter of the landfill, and are constructed of 1¼ to 2-inch diameter PVC, encased in locking aluminum stand-boxes.

The monitoring is performed using the CES Landtec Gas Extraction Monitor Model 2000 (GEM 2000). According to Chapter 62-701.530(1) of the Florida Administrative Code, methane gas levels are required to be less than the maximum level of 25% of the Lower Explosive Limit (LEL) for the interior of structures (gas points) and less than 100% of the LEL for points at or beyond the landfill property boundary.

The gas well samples are collected by removing the PVC cap of the well and inserting the intake tube of the GEM 2000 into the casing, or attaching it to the sampling port on the top of the well cap. The sample points are monitored by walking the area of interest while exposing the GEM 2000 intake tube to the atmosphere. The monitoring event typically takes one workday. The results are reported using a typical form as shown on Figure K-9.


NORTH
0 200 400 800
GRAPHIC SCALE
SCALE: 1" = 800'
GMW-8
GMW-7
GMW-9
STAGE II
CLASS I LANDFILL
HOUSEHOLD HAZARDOUS
WASTE DROP OFF
SCALE AND
SCALE HOUSE
MAINTENANCE
PERSONNEL
OFFICE
ADMINISTRATION
BUILDING
MAINTENANCE
BUILDING
GMW-10
GMW-11A
GMW-6
STAGE III
CLASS I LANDFILL
GMW-1
STAGE I
CLASS I LANDFILL
GMW-2
GMW-3
LEGEND:
GMW-1 GAS MONITORING PROBE
SLURRY WALL
STORMWATER
POND
GMW-5
GMW-4
REVISED: 7-10-15
ATKINS
LENA ROAD LANDFILL
MANATEE COUNTY, FLORIDA
LANDFILL GAS MIGRATION
MONITORING LOCATIONS
FIG. K-8
U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\FIG-K-4_LFG PROBES.dwg Jul10,2015 - 2:52pm Plotted By: cast2327

MANATEE COUNTY LENA ROAD LANDFILL

GAS MONITORING REPORT

3RD QUARTER 2009

JULY 2009 – SEPTEMBER 2009

METHANE GAS READINGS

Date of Readings:_____

Gas Well	Reading % LEL	NOTES
Well 1	0.0	
Well 2	0.0	
Well 3	0.0	
Well 4	0.0	
Well 5	0.0	
Well 6	0.0	
Well 7	0.0	
Well 8	0.0	
Well 9A	0.0	
Well 10	0.0	
Well 11A	0.0	

FIGURE K-9

b. Surface Emission Monitoring

The solid waste engineer performs surface-emission monitoring event on a quarterly basis on the Stage I and III Landfills in compliance with Section 60.753 of the Title V Permit No. 0810055-004-AV. Quarterly monitoring will begin at the Stage II Landfill five years after solid waste is placed in the Stage II Landfill. During this event, the solid waste engineer performs surface gas sampling with Thermo Environmental Instruments Model 680 Hydrocarbon Vapormeter (HVM). The monitoring path followed the same grid system as in previous events as approved for the permit. The sensor of the HVM was maintained at approximately 5 centimeters above the Landfill surface during monitoring. The perimeter of the Landfill was checked. All landfill penetrations for gas wells, pipes, etc., areas with distressed vegetation and cracks in the soil cover were also checked for landfill gas emissions.

Locations at which a methane concentration of 500 parts per million (ppm) or greater as observed will be noted on a site map and the appropriate changes to the landfill gas system will be made. The location of interest should be rechecked within a week to verify that the problem has been rectified. This event takes approximately one day to perform. However, depending on the number of locations (if any) that are observed to be in violation, additional monitoring time may be necessary.

c. Landfill Gas Extraction System Monitoring

The solid waste engineer performs monthly monitoring of the landfill gas extraction system. There are currently 231 wells and 15 sample points in the system. The sample points include locations in the extraction system pipes leading into the flare and a point at the flare itself. The gas composition, static pressure, differential pressure, flow and temperatures at each of the well locations and points are recorded using the GEM 2000. The flare temperature and total gas flow at the flare reported by the flare computer are recorded by hand. In order to minimize the amount of air pulled into the system, it may be necessary to close some of the extraction wells. As a result, not all of the wells will be sampled on a monthly basis.

The data recorded using the GEM 2000 is reported in tabular form on a monthly basis. A sample data table is shown on Figure K-10. The table indicates which wells or point locations that are not in compliance with the landfill's Title V Air Operation Permit. Compliance at a gas well or point is achieved when the concentration of oxygen is less than 5%, the concentration of nitrogen or balance gas is less than 20%, the static pressure is less than 0 inches of water (i.e., the well is under vacuum) and the temperature is less than 131˚ F. Shaded boxes on the data table indicate out-of-compliance parameters.

FIGURE K-10

MANATEE COUNTY -- LENA ROAD LANDFILL
GAS EXTRACTION WELL -- MONTHLY MONITORING

FEBRUARY 2007

Well ID	Date and Time	CH_4 (%)	O_2 (%)	Bal (%)	Temp. (°F)	Static Pressure (inches H2O)	Corrective Action	Comments / Damage
1								Well Closed.
2								Well Closed.
3								Well Closed
4								Well Closed.
5								Well Closed.
6								Well Closed.
7								Well Closed.
8								Well Closed
9								Well Closed.
10								Well Closed.
11								Well Closed.
12								Well Closed.
13								Well Closed.
14								Well Closed.
15								Well Closed.
16								Well Closed.
17								Well Closed.
18								Well Closed.
19								Well Closed.
20								Well Closed.
21								Well Closed.
22								Well Closed.
23								Well Closed.
24								Well Closed.
25								Well Closed.
26								Well Closed.
27								Well Closed.
28								Well Closed.
29								Well Closed.
30								Well Closed
31								Well Closed.
32								Well Closed
33	2/17/2007 8:34	51.6	0.3	10.5	86	-3.5	50	
34	2/17/2007 8:38	53.1	0.1	8.5	66	-14	50	
35	2/17/2007 8:43	52.5	0.8	7.6	48	-17	100	
37	2/17/2007 8:47	41.8	5.2	25.3	78	-1.9	50	
38	2/17/2007 8:51	50.2	0.4	12.5	60	-7.1	50	
39	2/17/2007 8:55	53.6	0.8	8.2	80	-9.3	50	
40	2/17/2007 8:58	54.3	0.8	9.5	82	-7.3	35	
41								Well Closed.
42								Well Closed.
43	2/17/2007 9:02	56.7	0.4	6.9	88	-4.4	50	
44								Well Closed.
45								Well Closed
46	2/17/2007 9:06	56	0	7.5	92	-16.5	100	
47								Well Closed.
48	2/17/2007 9:18	55.8	0.8	2.6	108	-13.8	50	
49	2/17/2007 11:29	55.8	1.1	2.4	98	-13.9	100	
50	2/17/2007 11:33	56.4	0.7	0.8	93	-14.6	100	
51	2/17/2007 11:36	55.5	0.7	1.2	102	-14.1	50	
52	2/17/2007 11:39	55.4	0.6	1.4	110	-14.5	100	
53	2/17/2007 11:44	57.1	0.7	1.2	72	3	35	
54	2/17/2007 11:47	56.3	0.5	0.6	97	-3.9	50	
55	2/17/2007 12:02	56.4	0.6	0.2	90	-13.7	100	
56	2/17/2007 12:05	56.1	0.6	0.2	112	-4.2	50	
57	2/17/2007 12:11	55.5	0.9	0.1	104	-4.5	50	
58	2/17/2007 12:18	56.4	0.9	0.5	72	-9.6	50	
59	2/17/2007 12:27	55.2	0.7	0.3	78	-11.3	100	
60	2/17/2007 12:31	55.7	0.8	0.5	77	-14.6	50	
61								Well Closed.
62								Well Closed.
63								Well Closed.
64	2/17/2007 12:35	57.3	0.6	1.4	53	-14.8	100	
65								Well Closed.
66	2/17/2007 12:25	53.5	2.9	4.8	96	-12.3	50	
67	2/17/2007 12:21	54.6	0.7	0.2	65	-9.8	100	
68								Well Closed
69	2/17/2007 12:07	56.4	0.5	0.4	116	-11.8	50	
70	2/17/2007 11:59	56.2	0.9	0.1	98	-7.5	50	
71	2/17/2007 11:51	56.8	0.6	0.8	95	-10.8	50	
72								Well Closed.
73	2/17/2007 11:55	56.6	0.7	0.7	84	-13.9	50	
74								Well Closed.
75								Well Closed-Water in Well
80								Not sampled. Values 80 to 89 closed.
81								Not sampled. Values 80 to 89 closed.
82								Not sampled. Values 80 to 89 closed.
83								Not sampled. Values 80 to 89 closed.
84								Not sampled. Values 80 to 89 closed.
85								Not sampled. Values 80 to 89 closed.
86								Not sampled. Values 80 to 89 closed.
87								Not sampled. Values 80 to 89 closed.
88								Not sampled. Values 80 to 89 closed.
89								Not sampled. Values 80 to 89 closed.
00000V1A	2/17/2007 12:43	52.2	1.9	7.8	0	-0.1		
00000V1B	2/17/2007 12:45	52.2	2.1	7.4	0	-15.8		
00000V2A								
00000V2B								
0000FLAR	2/17/2007 12:50	49.6	4.1	11.5	128	0.5		

Comments

Well ID's 80 through 89, V1A, V1B, V2A, V2B, FLAR are sample ports. No pressure, flow or temperature data available.

Shaded box indicates well not in acceptable range.

Acceptable Range : O_2 < 5% , Balance Gases (typically Nitrogen) > 20% , Well under vacuum (i.e. Static Pressure < 0) and Temperature < 131 oC

When wells are encountered with out-of-compliance parameters, changes can be made to the valve setting that may improve or eliminate the problem. If the gas composition indicates high levels of oxygen or nitrogen in the gas, the valve should be turned down. This would lower the flow at the well and lessen the amount of air that may be drawn into the system. If the static pressure at the well is positive, then the valve setting should be turned up, effectively increasing the flow at the well. The valve settings should be adjusted in small increments in order to decrease the possibility of improving gas composition while causing the pressure to become positive, or vice versa.

This task typically takes between two and three days to perform, depending on the number of valve setting adjustments. A site map displaying the locations of the landfill gas collection wells is included as Attachment K-1.

10.0 Storm Water Management

10.0 Storm Water Management

a. Introduction

The purpose of this Storm Water Management Plan (SWMP) is to describe the system, operation and maintenance of the Storm Water Management System (SWMS) for the Lena Road Landfill.

The Manatee County Lena Road Landfill is located in Bradenton Florida on approximately 1,200 acres owned by Manatee County. 316 acres are designated for landfill. The rest of the property is used for wetlands mitigation, buffer, administration facilities, storm water management and the Manatee County regional wastewater treatment plant.

The Lena Road Landfill is divided into three stages which are listed below with the acreage and status for each stage:

- Stage I – 131 acres – filled and inactive
- Stage II – 110 acres – empty and inactive
- Stage III – 75 acres – partly filled and active

Figure K-11 is a site map of the Lena Road Landfill Storm Water Management System. The map shows the landfill stages, storm water swales, storm water pond and outfall structures. The landfill waste areas have a storm water drainage system. The details for the drainage system on the Stage I, II and III Landfills are shown on the Fill Sequence Plan drawings

b. Storm Water Management System Overview

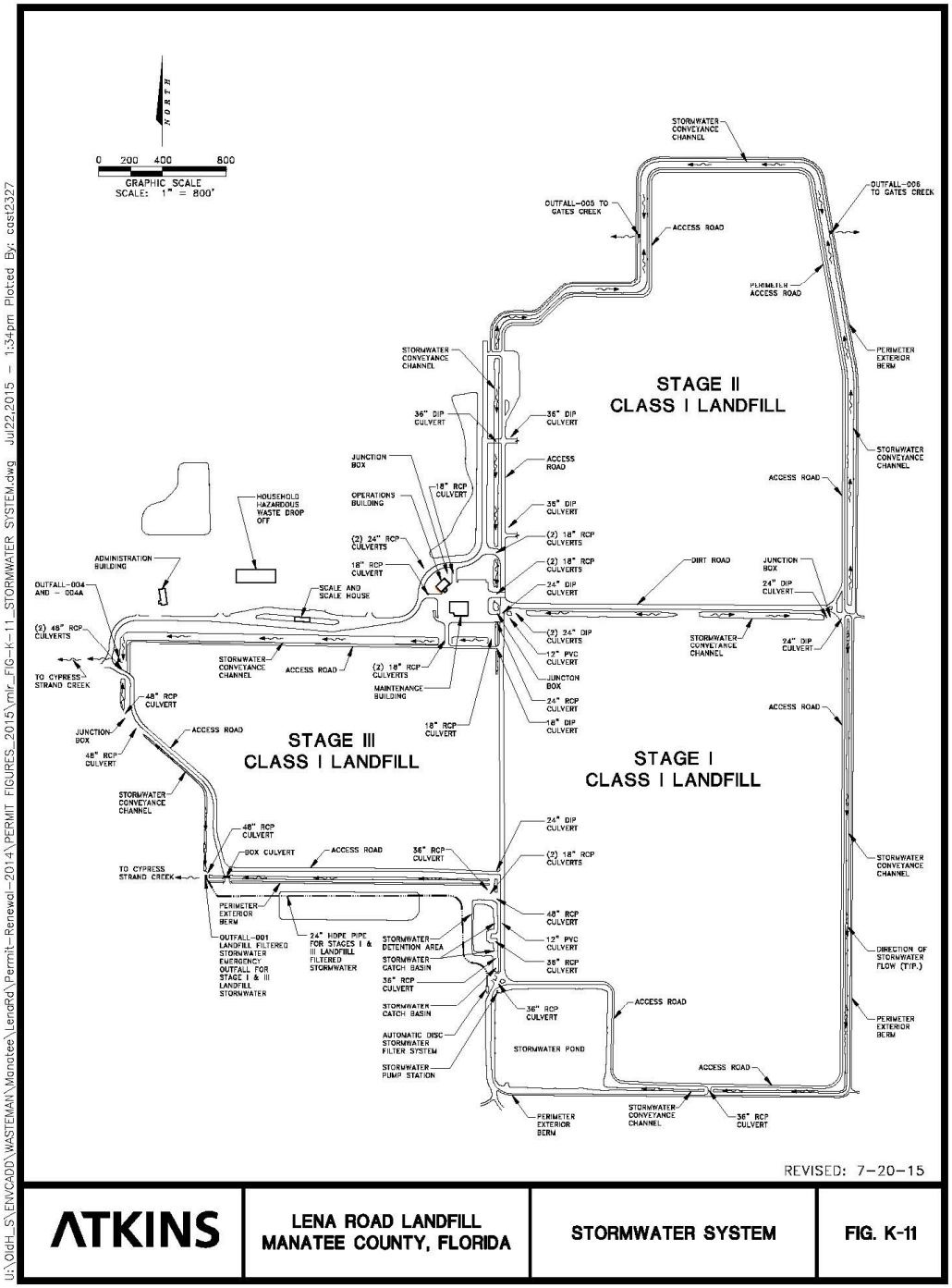
The purpose of the storm water management system is to collect clean storm water run-off from the landfill in terrace swales located on the landfill side slopes and convey the storm water to the detention areas for treatment and disposal to Cypress Strand Creek or Gates Creek. Any storm water that comes in contact with solid waste or is contaminated by leachate makes the storm water leachate, and requires discharge of the storm water to the leachate collection system for treatment at the wastewater treatment plant.

There are four permits that relate to storm water.

1. **Environmental Resource Standard General Permit #41-0224996 and #41-0177559**

Permit 41-0224996 was issued on February 25, 2005 and remains in the operational phase. There are 26 specific conditions. The most important specific conditions are:

20. For retention and dry detention ponds only: The retention and/or dry detention pond is intended to become dry within 72 hours after a rainfall event. A system that is regularly wet will be considered as not in compliance with this permit and possible modification to the system may be required.


NORTH
0 200 400 800
GRAPHIC SCALE
SCALE: 1" = 800'
STORMWATER CONVEYANCE CHANNEL
OUTFALL-005 TO GATES CREEK
OUTFALL-006 TO GATES CREEK
ACCESS ROAD
PERIMETER ACCESS ROAD
PERIMETER EXTERIOR BERM
STAGE II
CLASS I LANDFILL
36" DIP CULVERT
JUNCTION BOX
18" RCP CULVERT
OPERATIONS BUILDING
HOUSEHOLD HAZARDOUS WASTE DROP OFF
(2) 24" RCP CULVERTS
(2) 18" RCP CULVERTS
ADMINISTRATION BUILDING
OUTFALL-004 AND - 004A
SCALE AND SCALE HOUSE
DIRT ROAD
24" DIP CULVERT
(2) 48" RCP CULVERTS
TO CYPRESS STRAND CREEK
12" PVC CULVERT
MAINTENANCE BUILDING
48" RCP CULVERT
STAGE III
CLASS I LANDFILL
STAGE I
CLASS I LANDFILL
BOX CULVERT
36" RCP CULVERT
OUTFALL-001 LANDFILL FILTERED STORMWATER EMERGENCY OUTFALL FOR STAGE I & III LANDFILL STORMWATER
24" HDPE PIPE FOR STAGES I & III LANDFILL FILTERED STORMWATER
STORMWATER DETENTION AREA
STORMWATER CATCH BASIN
AUTOMATIC DISC STORMWATER FILTER SYSTEM
STORMWATER PUMP STATION
STORMWATER POND
DIRECTION OF STORMWATER FLOW (TYP.)
REVISED: 7-20-15
ATKINS
LENA ROAD LANDFILL
MANATEE COUNTY, FLORIDA
STORMWATER SYSTEM
FIG. K-11
U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\mir_FIG-K-11_STORMWATER SYSTEM.dwg Jul22,2015 - 1:34pm Plotted By: cast2327

24. The Operation and Maintenance Facility shall submit inspection reports in the form required by the Department, FDEP Form #62-343.900(6), Inspection Certification, for effluent filtration or exfiltration: 18 months after operation is authorized and every 18 months thereafter.

Permit 41-0177559 was recently modified to allow for construction of modifications to the Stage II area storm water management system. Upon completion of construction this permit will remain in the operational phase.

2. **NPDES Multi-Sector Generic Permit (MSGP)**

This permit was effective December 22, 2013 with an expiration date of December 21, 2018. The facility ID is FLR05F797-003. The requirements for this permit are included in the "Storm Water Pollution Prevention Plan for the Lena Road Landfill" which is periodically updated, with the most recent update dated January 21, 2015.

3. **Lena Road Class I Landfill Operation Permit** #39884-018-SO/01

This permit was issued January 5, 2011 with an expiration date of January 5, 2016. Specific Condition 9 of the permit describes the surface water sampling requirement.

Stage I System

The Stage I storm water perimeter swale was created by constructing two berms. The inner berm, called the landfill berm, is constructed around the area filled with solid waste, and the outer berm, called the storm water berm, was constructed around the inner berm to hold storm water runoff from the landfill in the swale until the storm water could be filtered and discharge to Cypress Strand. The storm water swale drains to an 8 acre, 40 acre-feet storm water detention pond. The pond is located at the southwest corner of the Stage I Landfill. Storm water enters the perimeter swale via direct rainfall, sheet flow down the outside slopes of the landfill, and from storm water discharge structures. Storm water collected in terrace swales on the landfill is diverted to inlets on the terrace swales which are connected to storm water pipes. The storm water pipes discharge storm water at the bottom of the landfill into the perimeter swale through the discharge structures. The Stage I system consists of a channel-wet pond detention system with in-line turbo disk sand effluent filtration system. The filter system was manufactured by Miller Leaman and consists of two skid units (Model 2SV) with 22 pods on each unit with a capacity of 500 gallons per minute, or 1000 gallons per minute total. The channel-wet pond detention system is designed to provide for the first one inch of runoff over the 154-acre contributing project area. The water quality treatment volume for Stage I is 558,875 cubic feet (12.83 ac-ft), and the system provides for 975,105 cubic feet (22.39 ac-ft). Two pumps located at the northwest corner of the pond provide the treatment volume for the wet pond in Stage I. The water quality treatment is provided between the lead pump (elevation 32.77 feet) and the all pumps off elevation of 30.77 feet. The pumps discharge through a 12" ductile iron pipe to parallel filtration system. The treated water leaves the filtration system through a 12" HDPE pipe to a junction manhole. A 24" HDPE pipe leaves the manhole and discharges via a mitered end

section in the southwest corner of Stage III, to the Outfall 001/Cypress Strand. Attenuation for the 100-year/24 hour storm event is provided by a weir housed in the pump station. When the water in the pond reaches elevation 34.3 feet, the water will discharge through the 24-inch HDPE pipe that is connected to the junction manhole.

Stage II System

The Stage II storm water management system is independent of Stages I and III. The system consists of a perimeter swale constructed with under drains and drop inlets for the discharge of storm water from the swale. Emergency Outfall Weirs 005 and 006 discharge storm water from the Stage II storm water swale to Gates Creek. The storm water swale was created by constructing two berms. The inner berm, called the landfill berm, is constructed around the area designated to be filled with solid waste, and the outer berm, called the storm water berm, was constructed around the inner berm to hold storm water runoff from the landfill in the swale until the storm water could be filter by the under drain and discharged to Gates Creek.

Because the Stage II Landfill is currently inactive and there is no solid waste, all runoff from the Stage II area is directed into the perimeter swale. The Stage II area is graded to allow runoff until the Stage II Landfill is filled with solid waste. If the storm water does not run off or evaporate fast enough, Manatee County pumps the storm water over the landfill berm into the storm water swale. Storm water entering the storm water swale due to direct rainfall, run off or from pumping accumulated storm water inside the Stage II landfill, is filter through the under drain system and discharged to Gates Creek.

When filling begins in the Stage II Landfill, the Phase areas waste disposal will be excavated prior to waste placement. All rainfall that falls within the excavated area will be contained and treated as leachate and pumped to the wastewater plant for treatment and disposal. As with the Stage I and III Landfills, as the fill increases in height, the outer slopes that are covered with intermediate soil cover will be drained to the perimeter storm water swale. Storm water that comes in contact with solid waste will be treated as leachate. Other areas of Stage II will be allowed to drain storm water runoff to the storm water management system. Details of the filling sequence and storm water drainage are shown on the Fill Sequence Plans included in Appendix B to the permit application package.

Stage III System

The Stage III system consists of a perimeter channel-pond dry detention with effluent filtration system, which will receive runoff from 74 acres of project area. The pond is designed to provide for the first one-half inch of runoff over the contributing area. The water quality treatment volume required for Stage III is 134,310 cubic feet (3.08 ac-ft) and the system provides for 146,573 cubic feet (3.36 ac-ft). The water quality treatment is provided between the pond bottom (elevation 31.0 feet) and the weir elevation of 32.4 feet. The water will drain through an under drain located in the northwest corner of Stage III and will recover in 72 hours. Attenuation for the 100-year, 24 hour storm event is provided by three outfall structures, D-001, D-004 and D-004A. D-001 consists of two identical modified FDOT Type “E” inlets. Two sides of the inlets have weirs set at elevation 32.4 feet and the front of the structure has a weir set at elevation 33.4 feet. The inlets discharge through two 42” RCPs to a double mitered end section at the southwest

corner of Stage III. Outfall D-004 consists of two FDOT Type "E" inlets in the northwest corner of Stage III and has the same weir set up as Outfall D-001. The inlets discharge through two 27" x 42" HERCP to Outfall D-004. Outfall D-004A is an existing inlet structure with the gate constructed at elevation 35.5. D-004A discharges through a 24" RCP to Outfall D-004. The existing storm water pond in the southeast corner of Stage III was excavated to elevation 31.0 feet. The top of bank was constructed to elevation 41.0 feet. The weir at the east end of the southern east-west ditch (southeast corner of Stage III) was modified and the top of the bank constructed to elevation 40.0 feet to disconnect Stage I and Stage III storm water. Forty-five linear feet of 54" inch RCP at the southwest corner of Stage III connects the north and west ditch to the south ditch.

c. Maintenance Plan

This maintenance plan applies to the storm water management system for the Stage I, II and III Landfills. The storm water management system consists of a series of swales, inlets and pipes that divert storm water from the non-working areas of the landfill to the storm water pond. The swales discharge into pipes and/or other swales, or directly into the storm water pond. Runoff from the detention pond ultimately discharges into the Cypress Strand Creek or the Gates Creek via the on-site wetlands.

Storm water perimeter ditches and the filter facility are inspected daily for sediment, wash outs, litter, vegetation and non-performance. In the event of a side-slope wash out, the slope is repaired within 3 working days. Litter fences are installed along the top bank of each swale around the active landfill to minimize litter. Excessive vegetation is removed from the swale system and storm water pond. Sediment is removed from the swale and hauled to the working face.

Storm water runoff from the areas that have at least a 6-inch compacted soil cover (free of waste) over the waste materials can be directed to flow into the storm water management system. Storm water runoff that has been in contact with waste materials is classified as leachate and cannot be diverted into the storm water management system. Storm water runoff from the upper portion of the landfill travels via sheet flow into collection terraces located along the side slopes of the landfill. Storm water runoff flows within the collection terraces and is conveyed, via storm water structures, and as shown on the Fill Sequence Drawings, down the landfill and into swales that are located along the perimeter of the landfill. The perimeter swales convey storm water runoff to a storm water management pond. Storm water runoff collected in the pond is allowed to percolate. As the water in the pond rises, it is pumped to the automatic disc filter system.

The following procedures have been implemented at the landfill to minimize maintenance requirements and to ensure efficient performance of the storm water system operation:

- No excavated cover material is stockpiled in such a manner as to direct sediment-laden runoff outside the project site property limits or into any adjacent storm water collection facility.

- All drainage ditches are inspected periodically for erosion and reshaped and re-sodded as required.

- Erosion and siltation control devices are cleaned and repaired when clogged or damaged.
- Temporary erosion control features such as silt fencing or hay bales are removed after installation of permanent erosion controls have been completed and any permanent erosion control features damaged by such removal are repaired.
- After vegetation has been established, all swales, channels, and detention ponds are mowed regularly; minimum-mowing frequency is once per year.
- The plant types in the littoral zone are checked periodically and any intruding vegetation is removed if required.
- Drainage sumps are cleaned out at least once per year and the storm sewer lines checked for plugging.
- The area in front of the control structure is checked at least quarterly to remove any excess plants or debris that could cause the structure to plug.

11.0 Equipment/Operation Features

a. Sufficient Equipment

The County has sufficient equipment to provide flexible landfill operations. Attachment K-3 provides a list of the current landfill heavy equipment for daily operations.

All landfill equipment that will be in operation on that day is serviced with special attention to any maintenance or minor repair needs. If the repair work required is more than minor in nature, it is sent to the landfill garage. The equipment is primarily serviced by Manatee County Fleet Services that operates a repair center at the Landfill Facility.

The following procedures are used in fueling equipment each day:

1. Check the following fluids to ensure they are at the manufacturer's recommended level:

    - pivot shaft oil
    - engine oil
    - hydraulic oil
    - fuel
    - transmission oil
    - radiator water
    - battery water level

2. Check and clean the following filters:

    - air cleaner
    - interior/exterior air conditioner filters

3. Pressure wash with water and/or air:

    - radiator core
    - transmission oil coolers
    - hydraulic oil coolers

4. Clean all air intake openings such as door panels, steps, hood, and air-breather intake.

5. Visually check for water, fuel and oil leaks in the final drive, radiator hoses, hydraulic hoses, fuel lines, injector pumps, fuel filters, etc.

6. Check tire inflation and/or track adjustment, chain tension and alignment on scrapers.

7. Grease all fittings at recommended intervals.

8. Complete the Daily Equipment Maintenance Report.

Fuel for the landfill equipment is pumped from a fuel tank, located as shown on Figure E-5. The tank is an above ground, double walled, steel tank with a total capacity of 20,000 gallons, and is split into two compartments. One 5,000-gallon compartment is for gasoline, and a 15,000-gallon compartment for diesel fuel. The tank is on a concrete slab, and protected by bollards. The tank is inspected weekly. Fuel and fluids (engine oil, transmission oil, hydraulic oil, or radiator fluid) are added to the equipment in the maintenance building as needed. If repairs on the equipment are necessary, the equipment is sent to the County's central maintenance shop, located off-site, or to the dealer's authorized maintenance facility.

b. Reserve Equipment

Attachment K-3 indicates the County possesses sufficient equipment to operate the landfill. In the event the dozer is out of service, the compactors can be used to spread refuse over the active face. In addition, the County can rent backup equipment from its approved Bid List or from County sources within 24 hours if necessary.

c. Communication Equipment

All equipment operators and traffic controllers are equipped with hand-held radios. This radio transmission service links the field personnel to the office and management. Telephones are available in the office, maintenance garage and Scalehouse.

d. Dust Control

Internal access roads are sprayed with water to control dust. Vegetation on filled areas assists in controlling dust from this area.

e. Fire Protection

Further details regarding the fire protection can be found in Section K.2.b.

f. Litter Control Devices

See Section K.7.i.

g. Signs

Signs are used around the site to direct traffic to the active face, white goods area, tire area, lead-acid battery drop-off, clean debris, yard waste, mulch site, speed limits, disposal rates and hours of operation, and prohibitions.

h. Shelter/Sanitation/First Aid Features

Shelter and sanitation facilities for the landfill staff are provided at the scale house and landfill office. First aid kits are provided in the cab of all heavy equipment vehicles.

First aid kits are located in the Landfill Administration Office and are maintained and inspected regularly. The kits will contain, at a minimum, the following:

sterile gauze pads	band aids (regular and non-stick)	eye wash
rolls of gauze bandage	adhesive tape	
bandage scissors	peroxide	
roll of sterile cotton gauze	safety pins	
tweezers	rubbing alcohol	
CPR mouth barrier	gloves	

In the case of accidental poisoning:

Step 1: Carefully remove poison from contact with person.

Eyes: Flush with lukewarm water, NOT HOT WATER, in a gentle stream for 10-15 minutes with eyelids open. Pour water from a container held 2-4 inches above the eye. **DO NOT RUB THE EYES.**

Skin: REMOVE any clothing that has come in contact with the poison. Flush poison off with large amounts of water poured from a container held 2-4 inches above the affected skin area for 10-15 minutes.

Mouth: REMOVE any poison from the mouth. Rinse the mouth out with water. If unable to rinse, gently rub out mouth with a clean cloth. Check mouth for any burns, cuts, unusual coloring, swelling or irritations.

Lungs: Get to fresh air as soon as possible. Loosen clothing if exposed to gases or fumes. Initiate mouth-to-mouth resuscitation if necessary.

Step 2: Give water when potential poisons have been swallowed. DO NOT give water if the person is unconscious, having convulsions or cannot swallow.

Step 3: **NEVER** make the person vomit **unless** the poison center or a physician directs you to do so.

Step 4: KEEP CALM. **DO NOT DELAY IN SEEKING HELP!**

12.0 All-Weather Access Roads

The main haul road in the landfill is paved. Vehicles leaving the main haul road en route to the working face travel across an interior road. The interior road base is constructed of construction and demolition (C&D) material and covered with a sand-shell mixture. The road is routinely maintained to provide waste hauler access to the work face. As discussed in K.2.b., during severe wet weather, small vehicles are directed to the wet weather disposal area for tipping.

13.0 Additional Record Keeping

Required landfill records are reported to the Department on a monthly, quarterly, semi-annually, annual, biennial basis. All records are maintained at the landfill for a minimum of ten years or for the design period as specified below. The design period is projected to end in the year 2071 (unless long-term care is decreased).

a. Permit Application Development

All reports used to develop permit applications and operation records will be maintained for the design period. Records such as geotechnical investigations, foundation analyses, demonstration reports, and previous permits and regulations are examples of records to be maintained.

b. Monitoring Records

All water quality, gas, and leachate monitoring records are required to be maintained for at least ten years.

In accordance with various Environmental Protection Agency (EPA), Southwest Florida Water Management District (SWFWMD), and the Florida Department of Environmental Protection (FDEP) rules, regulations and permits, the Landfill must conduct various field monitoring /maintenance activities and submit reports on a scheduled basis. The following information is intended as an overview of required activities and reports and is also addressed in individual sub-sections regarding the activity or program.

<u>Groundwater</u>

The County contracted laboratory inspects and samples 18 groundwater monitoring wells (GW-1 trough GW-18) for the Stage I and III Landfills. The results are submitted semi-annually to the Department. The wells consist of seventeen monitoring wells and one background monitoring well. When the Stage II Landfill becomes active, the County's contracted laboratory will inspect and sample eleven additional monitoring wells (GW-18 through GW-28). The County will continue to inspect and sample GW-1 and GW-2, which are in the foot print of the Stage II Landfill until the wells are abandoned.

A review of the analyses, comparisons of the data, and comments on any substantial differences in parameters is to be submitted to the FDEP every two and one-half years or as required in the permit.

<u>Leachate</u>

Flow meters which record leachate directed to the Southeast Waste Water Treatment Plant are inspected daily. The leachate quantity is reported monthly.

Department of Environmental Protection Reports
Prepare monthly groundwater report.
Prepare annual compaction and fill volumes.
Prepare groundwater report semi-annually.
Prepare leachate analysis report annual.
Prepare monthly water balance reports.
Prepare monthly report on the landfill gas readings taken at each landfill gas wellhead and flare
Prepare quarterly report of the landfill gas readings at gas monitoring probes and ambient points
Prepare quarterly report of the landfill gas surface emissions monitoring

c. Annual Estimate of the Remaining Life of Constructed Landfill

Manatee County will annually estimate the remaining solid waste disposal capacity in cubic yards and the remaining landfill life in years. The estimate will be based on the geometry of the filled landfill, final contours, scale house records for waste received and the filling rate of the landfill. The estimate will be submitted annually to FDEP by the date specified in the permit.

d. Archiving and Retrieving Records

All records pertaining to the operation of the facility will be retained throughout the design life of the landfill. All monitoring records, calibration and maintenance records and reports required by the landfill operation permit will be retained for at least ten years.

14.0 Special Waste Handling

a. Motor Vehicles

Motor vehicles are not presently accepted for disposal or temporary storage at the Lena Road Landfill.

b. Shredded Waste

Shredded municipal waste is not accepted for disposal at the Lend Road Landfill. Shredded tires may be accepted if not recycled.

c. Asbestos

Asbestos containing materials from sources covered under the National Emission Standards for Asbestos, 40 CFR Part 61, Subpart M are accepted at the Lena Road Landfill, with prior approval of the County. These materials will be placed in the landfill by appointment only, covered with a minimum of one foot of non-asbestos containing material, and the location will be recorded in accordance with 40 CFR Part 61.154. A record of the location of asbestos-containing waste will be maintained.

d. Contaminated Soil

Soils contaminated with non-hazardous waste and petroleum-contaminated soil, which has been treated pursuant to Chapter 62-713, F.A.C., will be accepted at the discretion of the County.

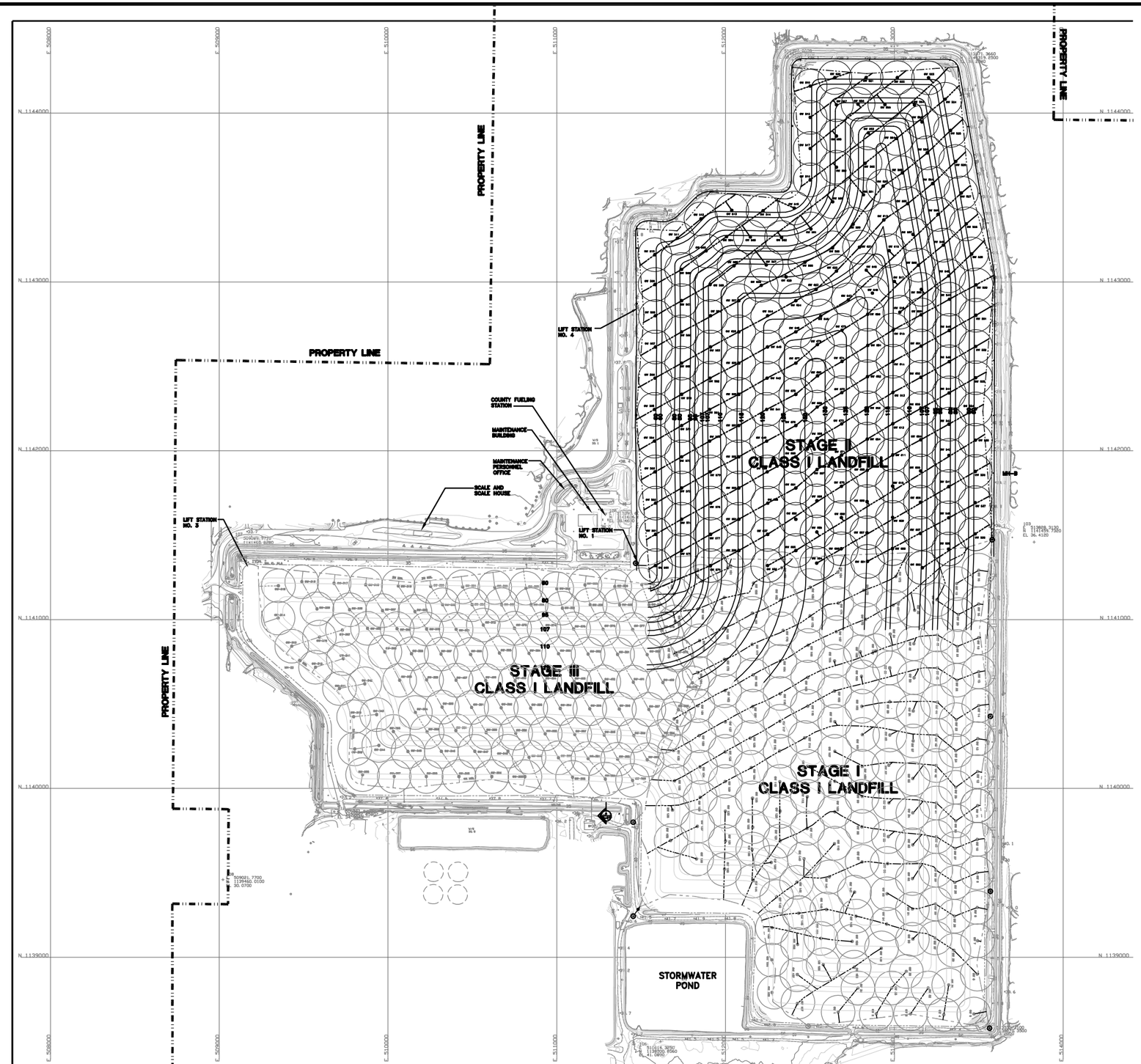
e. Biological Waste

Biological waste is not accepted.

f. Oily Waste

Materials as defined in Chapter 62-701.300 (11)(b), F.A.C., may be accepted for disposal at the discretion of the County.

ATTACHMENT K-1



NORTH

0 100 200 400

GRAPHIC SCALE
SCALE: 1" = 200'

LEGEND:

- 18" HDPE HEADER GAS PIPE
- 8" GAS LATERAL PIPE
- EXISTING 18" HPDE HEADER GAS PIPE
- EXISTING 8" HDPE LATERAL GAS PIPE
- GW 530 PROPOSED WELL HEAD
- GAS WELL RADIUS OF INFLUENCE
- GW 530 EXISTING WELL HEAD
- EXISTING GAS WELL RADIUS OF INFLUENCE

NOTE:

AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

REVISION: JULY 10, 2015

ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

GAS COLLECTION SYSTEM

FIGURE
K-1-1

ATTACHMENT K-2

Attachment K-2

Household Hazardous Waste Collection And Storage Facility

Lena Road Landfill
3333 Lena Road
Bradenton, FL 34202

Revised May 10, 2010

Prepared by:

Manatee County Government
Utilities Department
Solid Waste Division
3333 Lena Road
Bradenton, FL 34211

Revised June 10, 2011

Contents

Figures

1.0 Definitions

Conditionally Exempt Small Quantity Generators (CESQG): (40 CFR 261.5) A generator who produces no more than 100 kg (220 lbs) of hazardous waste or no more than 1 kg of acutely hazardous waste per month.

Contingency Plan: A document setting out an organized, planned, and coordinated course of action.

Hazardous Material: A substance or material including a hazardous substance, which has been determined by the Secretary of Transportation capable of posing an unreasonable risk to health, safety, and property during transportation.

Household Hazardous Waste Collection and Storage Facility: A facility established by the Manatee County Board of County Commissioners to provide hazardous waste disposal services to households.

Household: Single and multiple dwellings and other residential sources within Manatee County.

Personal Protective Equipment: Equipment used to protect individuals from chemical, physical and biological hazards.

Training: Instruction in the use of equipment, personal protective equipment, site safety and handling.

2.0 History

The Manatee County Household Hazardous Waste Collection and Storage Facility opened in May 1993 within the Stage III Landfill. This facility was removed as solid waste filled the Stage III Landfill.

The recently completed Administration Facilities includes a household hazardous waste collection and storage facility. The facility floor plan is shown on Figure K-2-1, and a cross section is shown on Figure K-2-2. The building includes forced air ventilation, dry chemical fire suppression system, and storage for hazardous waste. The building is engineered to comply with EPA, NAPA, and OSHA standards and regulations for storing hazardous chemicals and wastes. The building is also corrosion resistant and features secondary containment for the prevention of spills or leaks. The facility has a concrete slab and is under a roof as shown on the figures. The materials processed and the method of processing remains essentially the same at the new facility.

3.0 Facility Program

The Manatee County Household Hazardous Waste Collection Facility (HHW Facility) is located at 3333 Lena Road, Bradenton, Florida. The Facility has a secured storage building specifically designed for the storage of hazardous materials and/or wastes. The major components of the HHW Facility are as follows:

- Security System: The entire site is fenced with a six (6) foot high chain link fence topped with a triple strand of barbed wire. Four gates provide ingress and egress to the facility. When not in use, the facility is locked and secured. A double security exists in that the main access road into the County Landfill has a gate and is secured when the Landfill is not in operation.

- Containment and Storage System: The storage building is specifically designed for hazardous materials featuring secondary containment in the event of a spill. The building is equipped with forced air ventilation and dry chemical fire suppression systems**.** The building has separate storage bays. A heavy-duty locked aluminum storage cabinet anchored to a concrete slab serves as the ammunition locker and does not have a dry chemical fire suppression system.

- The hazardous materials storage is under roof along with covered containment areas for storage of fluorescent bulb closed storage rack, and the waste oil tank. The containment areas are submerged and surrounded by cement reinforced containment walls.

- The storage buildings sit flush with an impervious, slightly sloped, reinforced containment area. The Facility is located inside the confines of the Manatee County Solid Waste Management Landfill Facility.

The facility is open to Manatee County residents on the third Saturday of each month from 9:00 a.m. to 3:00 p.m. Wastes that are classed as medical or radioactive are not accepted. There is not a disposal weight limit during the collections and disposal is provided free of charge to County residents. The cost of the program is funded by landfill disposal tipping fees.

A semi-annual event is held at several sites throughout Manatee County in the spring and fall of the year. Siting Locations of the event are at the HHW Lena Road Landfill Facility and at the Utilities Department Complex, 4501 4410 66th Street West, Bradenton, Florida, Palmetto Fairgrounds, 1303 17th St. W. Palmetto, Florida and various other County locations. All businesses participating in the collection program are referred directly to the County's contracted hazardous waste disposal vendor, who is on site, for collection and payment arrangements. Milk run collection information is provided to the commercial generator categories under the same rate schedule as that of Manatee County.

Monthly collections/events are operated by the certified Household Hazardous Waste Technician in the new Hazardous Waste Facility located at the Landfill. The Hazardous Waste contractor is on site at the collection to assist with unloading. The contractor bulks and lab packs any of the waste material received during the collection. Partial containers are stored in the Hazardous Waste storage building until the following monthly collection. The Hazardous Waste Technician reviews all paperwork and has the responsibility of approving and signing outgoing manifests.

Materials are accepted from County residents during non-operating hours by appointment or as determined by the HHW technician and/or manager special waste. In addition, collection services at the residence are available for those persons who are unable to attend the event due to circumstance of health, physically disabled or age.

Manatee County has a permanent Household Hazardous Waste program for the collection of materials at the facility. Monthly collections are conducted for the residential citizens and annual or semi-annual events for the CESQGs. These events are advertised in the County's utility billing and the local newspapers. General Household Hazardous Waste program information is available on the County's website at www.mymanatee.org/hhw.

4.0 Containment

4.1 Containment

- Antifreeze and aerosol cans are stored in drums along with partial drums of paint adjacent to the outside containment areas on concrete slabs covered with plastic sheeting prior to removal by the contracted vendor.

- Other wastes such as small flammables and pesticides are contained in the storage building. Paint is stored in a lined 40 yard roll off container. Crates are located on a concrete slab that is covered with and lined with plastic sheeting prior to bulking into drums. The full drums are removed the same day as paint bulking is done by the contractor.

- Storm water shall be prevented from accumulating within in-service containment structures.

5.0 Waste Acceptance Criteria

5.1 Household Waste

Household waste is accepted only during the monthly collection events *unless* circumstances of the generator prohibit such a collection time. The waste must fall within the categories permitted by the contracted collection/disposal vendor and not be of a radioactive, bio-hazardous or medical nature. A residential disposer must also have generated the waste.

5.2 CESQG Waste

CESQG waste is collected at our annual or semi-annual events by arrangement directly between the contracted collection/disposal vendor and the generator.

6.0 Personnel

6.1 Training

Facility personnel must successfully complete a 40-hour OSHA training program that teaches performance of duties in a way that ensures the facility is operated in a manner that protects them and the public from potential health and safety hazards at the site and is protective of the environment.

The instructor providing the training includes appropriate aspects of hazardous waste/material management including selection of protective clothing and equipment and emergency response. At a minimum, the training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

- Contact List for departments to respond to fire and/or explosions, discharges to the land surface; incidents
- Shutdown of operations

Facility personnel shall take part in annual eight (8) hour refresher training.

Facility personnel has on staff at least one person who has no less than 40 hours training in appropriate aspects of hazardous waste/material management whenever waste is being received and whenever any hazardous material is being bulked or otherwise treated.

7.0 Records

The following documents and records shall be maintained at the Facility offices:

- A record of all personnel engaged in work, either full-time or temporary.
- Facility personnel who have completed a record of training.

8.0 Personnel Training Requirements

All County personnel participating in the HHW collection programs shall be trained to the appropriate level for their participation. All trained County personnel are specifically trained as Hazardous Waste Collection Staff. The HHW technician is responsible for enforcing all safety policies. The following guidelines outline the training requirements to be completed by personnel so they may safely work with hazardous materials during the collection programs. This training will, therefore, reduce the potential for hazardous material-related accidents.

8.1 Unloaders/Paint Sorters

Training for this level is limited to on-the-job instruction. Personnel trained will have minimal contact with the waste, but will work under the direction of the certified Household Hazardous Waste Technician. After initial screening of the waste, personnel will unload the waste from the vehicles into carts. They place paint in the appropriate area for future bulking. One gallon and 5 gallon buckets are stacked in a lined 40 yard roll off container. Quarts and pints are placed into plastic lined crates.

8.2 Facility Staff

Training for this level of participation includes both classroom instruction and on-the-job training. Staff assists with opening and closing the Facility, screening incoming materials, and assisting with spills, releases, or any other emergency. Specific training includes, but is not limited to:

HAZWOPER Operational Level (29 CFR 1910.120)
On-the-job training in accepting, identifying, segregating, and sorting waste
Hazardous waste rules and regulations

8.3 Hazardous Waste Operations and Emergency Response, 29 CFR.1910.120

The objective of this training is to provide personnel with the knowledge and skills necessary to safely and successfully respond to any on-site spills and/or releases. A five level classification system is used to provide appropriate training to indicate the scope of their authorized response activities:

First Responder Awareness Level
First Responder Operations Level
Hazardous Materials Technician

Personnel trained in accordance with this Section shall receive annual refresher training of sufficient content and duration to maintain their competency.

9.0 Personal Protection Equipment Procedures

Personal Protective Equipment (PPE) is used to limit exposure to various hazardous materials and wastes at the Hazardous Waste Collection and Storage Facility. PPE is necessary when handling hazardous materials to prevent skin contact with harmful substances. Whenever removing and/or working with hazardous materials or waste, personnel are required to wear, at a minimum, the following protective equipment.

9.1 Unloaders/Paint Sorters

- Safety glasses
- Protective gloves
- Protective apron (optional)

9.2 Facility Staff

- Safety glasses
- Protective gloves
- Respirator with organic vapor cartridge on high efficiency particulate air filter
- (HEPA), if necessary, as determined by the waste material being handled.
- Steel-toed boot or safety shoes
- Protective apron

In the event of a spill or release of a hazardous material or waste, the following protective equipment is on site:

- Full-faced air purifying respirators

When specialized training is required to properly utilize personal protective equipment, this training must be provided to the employee prior to its use.

10.0 Spill/Release Procedures

The Facility Site Supervisor and/or Assistant shall be properly trained in hazardous material emergency response to efficiently mitigate, contain, and clean up any accidental spill/release that might occur at the Facility. At all times, the safety of personnel and program participants are the primary concern.

The following will be considered emergencies at the Facility:

- Fire or smoke is noticed
- An explosion occurs
- A leak or spill is discovered
- Medical emergencies, including heat induced injuries
- Discovery of explosive devices

When a spill/release or any other emergency occurs, the following guidelines will be followed:

- Cease operations/perform initial size up
- Make mental note of nature, extent, source, and amount of any released product
- Evaluate potential harm to human health and the environment
- Scene control. Keep all unauthorized persons away from the scene
- Protect individuals directing them, if not contaminated, away from the scene
- If flammable materials are involved, check for all ignition sources
- Take measures to contain release or fire from spreading to other hazardous areas as quickly as possible
- Notify 911 if warranted
- Notify Facility Manager/Director of the Solid Waste Management Facility, if necessary
- Notify State Warning Point if reportable quantity
- Perform basic first aid to stabilize any victims until EMS arrives
- Clean up any spills using compatible materials
- Place waste in proper container for disposal through the County's Hazardous Waste Transporter

Under no circumstances will the health and safety of County staff be placed in harm's way in the attempt to handle suspected explosives. If explosives are discovered, evacuate the immediate area, cease traffic flow, and notify the Manatee County Sheriff's Department Haz-Mat Team.

If a reportable quantity of a hazardous material has been spilled or released, a follow-up written report must follow within fifteen working days and be filed with the State Emergency Response Center.

An eyewash station and shower is permanently installed on site. In the event of materials being splashed into staff's eyes, minimum eyewash of fifteen minutes shall take place.

11.0 Equipment

Following is a partial list of the equipment on site:

Forklift with drum grabber	
Fire extinguishers	Assorted tools
Funnels	Utility carts
Shovels and brooms	55-gallon drums
3 and 5 gallon buckets	Traffic cones
Absorbent	Assorted tape
Neutralizing agents	Two-way radio communication
Eyewash station and shower	

12.0 Safety

Safety is the primary concern of all personnel participating at the HHW Facility. Appropriate staff is instructed in how to handle emergencies as well as site safety. The collection program is maintained in a neat and organized manner at all times. Good housekeeping practices are followed. The unloading area will be kept clean and free of excess materials. It is the responsibility of all Facility staff to follow these guidelines. No smoking signs are posted. Smoking is prohibited at the Facility.

Facility staff will assist participants by unloading vehicles, answering questions about proper disposal methods and handing out informational literature as necessary. Only hazardous waste generated by residential customers will be accepted during the HHW disposal programs. In the event a participant arrives to dispose of waste generated from a business, the CESQG hazardous waste disposal program will be explained and contractor contact information provided.

Following are guidelines to follow in processing the participants' waste.

12.1 Safety Procedures

Facility staff will, at all times, act in a safe manner. Work practices are carried out to minimize or eliminate the possibility of an injury-related accident. Proper ergonomics are followed. All personnel use correct lifting techniques in order to prevent injury to the body. Containers are removed from vehicles one at a time into the utility carts.

Appropriate Personal Protective Equipment (PPE) is worn when handling hazardous waste. Close attention is given to staff during the summer months to reduce the risk of heat related injuries. All Facility staff monitor themselves for any signs or symptoms of heat stress and act accordingly.

12.2 Removal from Vehicles

Traffic is directed from the scale house and/or by signs on the entrance road of the Landfill to the HHW Facility site. Signs to a stopping point direct all incoming cars where participants will be greeted by trained County staff. An initial spotting of the chemicals is performed before removal of chemicals from the vehicle. The participants are questioned on the contents of any unknown materials or unmarked containers. If any unacceptable or unknowns are spotted, personnel will immediately notify the Facility Site Supervisor or Assistant.

The waste from the vehicles will then be unloaded into carts by the Facility staff. Participants remain in or at their vehicles. This reduces the risks of spills or injuries. Facility staff evaluates the contents as they unload. If any leaking containers are spotted, the container will be placed into an additional container. The participant will be informed of the leak. It is not the responsibility of contractor or facility staff to clean up the leak or spill in the participant's vehicle beyond the initial containment.

13.0 Waste Segregation

County and contractor personnel transport the waste from the vehicles to the preliminary sorting areas. Cardboard boxes are flattened then placed in a dumpster designated for cardboard recycling. Any packaging, similar debris, and/or household trash will be removed and placed in the dumpsters designated for trash. The HHW technician and contractors examine all materials received. The waste is then sorted, bulked and lab packed into the appropriate shipping containers for removal. Usually used motor oil, pesticides, paints, and flammables represent the majority of the waste received.

13.1 Locker Storage

Each chemical storage unit is clearly labeled with DOT placards.

Wastes are stored according to their primary hazard. The basic categories of wastes are as follows:

- Flammables
- Pesticides
- Poisons
- Corrosives

The HHW technician shall have the final decision on what wastes to accept or not accept, classification, and any other decision regarding the waste.

13.2 Waste Bulking

Only the HHW technician and/or manager special waste determines which wastes should be bulked. All labels are read before bulking any wastes together to ensure compatibility. Safety is the major factor in bulking. No bulking shall take place in inclement weather.

Containers of compatible waste are opened and drained directly into fifty-five gallon drums. When the drum is full or bulking is discontinued for the work period, the lid shall be securely replaced. A small space for vapor expansion shall be left at the drumhead space.

Drums are required to have the proper markings adhered to them. The markings are placed so that they are clearly visible. The HHW marking contains the following information:

- The material contents
- The accumulation start date

The proper marking procedure is applied at the beginning of the bulking procedure.

Bulking of any material takes place when needed. Items to be bulked may include the following:

- Latex based paints
- Oil based paints
- Antifreeze
- Motor oil and transmission fluid

The wastes are compatible for bulking, and are only bulked if clearly identified by sight, smell, container, label and source. Any wastes that are not clearly identifiable are not bulked, and the unknown wastes are sent with contractor.

Paint is bulked into a 55-gallon steel drum when needed, and generally removed the same day or within 24-hours. If paint is spilled, it is contained on the plastic sheet by absorbent pads or absorbent. All paint is currently collected and placed in containers which are stored on Visqueen. All paint is sent to a paint company to be recycled at this time.

Antifreeze is bulked into a 55-gallon drum. If antifreeze is spilled it is contained on the plastic sheet by absorbent pads or absorbent.

Motor oil and transmission fluid is being poured into a 20 gallon tank then pumped (or poured using a funnel) into a 500-gallon storage tank or in 375 or 275 gallon portable tanks. The bulking is done outside, under a main roof of the Hazardous Waste Facility.

13.3 Unknowns

Unknowns are accepted. These items are materials that cannot be identified by either original labels or by participant knowledge. The following procedures are adhered to:

- Unknowns will be sent out with the contractor.
- Place material into appropriate storage building according to suspected hazards.

13.4 Electronic Waste

Electronic waste such as TVs, computer monitors, microwave ovens, telephones, keyboards, VCRs, radios, etc. are received at the Household Hazardous Waste Collection. The contractor is on site during the collection event and materials are sorted, palletized, shrink wrapped or put in Gaylord boxes then removed the day of the collection. If there are more pallets than will fit in the contractor's trucks, the pallets of materials and/or roll-off box are stored under the roof of the Household Hazardous Waste Facility until the contractor comes to pick them up. The contracted e-scrap recycler removes the e-scrap for processing and recycling. Broken glass and components from broken units is swept up and properly disposed.

Electronic waste is also collected curbside by the contracted waste haulers. The hauler brings the materials to the landfill to be stored in the designated area which is the SW corner of the white goods/scrap metal concrete pad. Additionally, residents may drop off electronic waste Monday through Saturday during landfill hours. This material is stored in the SW corner of the white goods/scrap metal area also. Materials are removed by a private recycling contractor for proper recycling.

14.0 Contingency Plan and Emergency Procedures

The following procedures serve as the Facility's guideline for Contingency Plan. Specific information may be located in the Manatee County Household Hazardous Waste Collection and Storage Facility Contingency Plan.

14.1 Purpose and Implementation of Contingency Plan

The contingency plan should be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

The provision of the plan should be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

14.2 Content of Contingency Plan

The contingency plan describes the actions facility personnel should take to protect the public from potential health and safety hazards in response to fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

The plan lists names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (as described later). This list should be kept up to date. Where more than one person is listed, one should be named as primary emergency coordinator and others should be listed in the order in which they will assume responsibility as alternates.

The plan includes a list of all emergency equipment at the facility (i.e., fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list should be kept up to date. In addition, the plan should include the location and physical description of each item on the list, and a brief outline of its capabilities.

The plan should include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan should describe signal(s) to begin evacuation, evacuation routes, and alternate evacuation routes in cases where the primary routes could be blocked by releases of hazardous waste or fires.

14.3 Copies of Contingency Plan

A copy of the contingency plan and all revisions to the plan should be maintained at the facility, submitted to local police and fire departments, hospitals, and State and local emergency response teams that would be called up to provide emergency services.

14.4 Changes of Contingency Plan

The contingency plan should be reviewed, and immediately changed if necessary, whenever:

- The plan fails in an emergency
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or release of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.
- The list of emergency coordinators or emergency equipment changes

14.5 Emergency Coordinator

At all times, there should be at least one employee either on the facility premises, or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator should be thoroughly familiar with all aspects of the facility□s contingency plan, all operations and activities at the facility, the locations and characteristics of waste handled the location of all records within the facility, and the facility layout. In addition, this person should have the authority to commit the resources needed to carry out the contingency plan.

The emergency coordinator's responsibilities vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of coordinator is responsible for.

14.6 Emergency Procedures

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his/her designee when the emergency coordinator is on call) should immediately:

- Activate internal facility alarms or communication systems, where applicable, to notify all facility alarms or communication systems.
- Notify appropriate State or local agencies with designated response roles if their help is needed.

14.0 Contingency Plan and Emergency Procedures

Whenever there is a release, fire, or explosion, the emergency coordinator should immediately identify the character, exact source, amount, and the extent of any released materials. He or she may do this by observation or review of facility records, or if necessary, by chemical analysis.

Concurrently, the emergency coordinator should assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment should consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire, or heat-induced explosions).

If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he/she should report his findings as noted below:

- If the assessment indicates that evacuation of local areas may be advisable, the proper authorities should be immediately notified. The emergency coordinator should be available to help appropriate officials decide whether local areas should be evacuated.
- The government official designated as the on-scene coordinator for the area or the State should be notified immediately. The report should include:

    - Name and telephone number of reporter
    - Name and address of the facility
    - Time and type of incident (e.g., release, fire, explosion)
    - Name and quantity of material(s) involved, to the extent known
    - The possible hazards to human health, or the environment outside the facility.

During the emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other areas of the facility. These measures should include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

During an emergency, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in containers and/or equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator should provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material contaminated by a release, fire, or explosion at the facility.

15.0 Operations

15.1 Maintenance and Operation of Facility

The facility shall be maintained and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.

All facility communications, alarm system and spill control equipment, where required, shall be tested and maintained in accordance with manufacturer's recommendations and as necessary to assure its proper operation in time of emergency.

Facility personnel shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spills control equipment, and decontamination equipment to any area of facility operation in an emergency.

Whenever hazardous waste facility is staffed, all personnel involved in the operation shall have immediate access to an emergency communication device, either directly or through visual or voice contact with another employee.

Normal operational procedures require one member of personnel on site. This member shall, while in the facility, have immediate access to a two-way radio capable of summoning external emergency assistance. Telephones and/or radios shall not be placed in areas where the atmosphere may be come explosive due to the presence of flammable vapors, dusts, or gases.

15.2 Accumulation Time

The Household Hazardous Waste Facility will be accumulating hazardous waste on site, and shall store the material as follows:

- The waste will be placed in containers. A container is a storage building or a DOT shippable drum.
- The amount of waste accumulated will not place the facility in violation of any regulations required on a Federal, State, or Local level.
- While being accumulated on-site, each container is labeled with a description of the contents and date.

The household hazardous waste collected for treatment or disposal shall not be accumulated on site for more than 210 days. Once the capacity limit is reached, all hazardous waste collected shall be shipped to a permitted hazardous waste facility for treatment or disposal. The operator may request FDEP approval of a longer accumulation time period for specific wastes that are accumulated slowly.

15.3 Management of Containers

If a container is not in good condition or if it begins to leak, the operator shall pack the container and its contents in a larger container, seal the container and place it in the proper storage building bay.

The operator shall use containers made of or lined with materials that will not react with, and are otherwise compatible with the waste to be stored, so that the ability of the container to contain the waste is not impaired.

A container shall always be closed during storage except when it is necessary to add or remove waste. Also a container holding waste should not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

The operator shall inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.

15.4 Special Requirements for Ignitable or Reactive Waste

Containers holding ignitable or reactive waste shall be located within the transfer/containment slab or within the proper hazardous waste storage building bay. An overhead fire suppression system is located in the storage buildings.

The operator shall take precautions to prevent accidental ignition of ignitable waste. This waste shall be separated and protected from sources of ignition including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. The facility is a posted no smoking area.

Reactive wastes shall receive special handling as described in this section, and storage as needed to prevent unintentional reactions.

15.5 Handling Requirements for Ignitable, Reactive, or Incompatible Wastes

Repackaging or treatment, including bulking or neutralizing of ignitable, reactive, or incompatible waste is not done at this facility. A contracted transport/disposal vendor removes hazardous waste stored in the storage building.

15.6 Material Redistribution Guidelines

In the event Manatee County decides to establish a Material Redistribution Program in the future, the following shall serve as the *basic* program guideline for facility personnel.

15.6.1 Selection of Materials for Redistribution to the Public

Materials selected for exchange programs should include but not be limited to meet the following minimum criteria:

- Original containers only
- Original label with ingredients, instructions, and warnings must be present and readable
- Contents should be visually inspected and should look like correct material in new condition
- Containers should be at least three-quarters full

The following items will be excluded from redistribution programs:

- ammunition
- pesticides
- Reactive materials
- Cancelled or banned products
- Poisons

Each item selected for the redistribution program should be approved by the facility manager or his/her designee.

15.6.2 Storage

Materials designated for redistribution should be stored in a separate area of the facility. This area will be clearly marked and secured from unauthorized access.

At a minimum, secondary containment sufficient to contain the entire contents of the largest two containers in storage should be provided.

15.6.3 Customers

All customers should be at least 18 years of age and shall be allowed to shop only in the designated area.

15.6.4 Documentation

The redistribution program will develop and use a waiver/inventory form, pre-approved in format by the County Attorney's Office that includes the following elements:

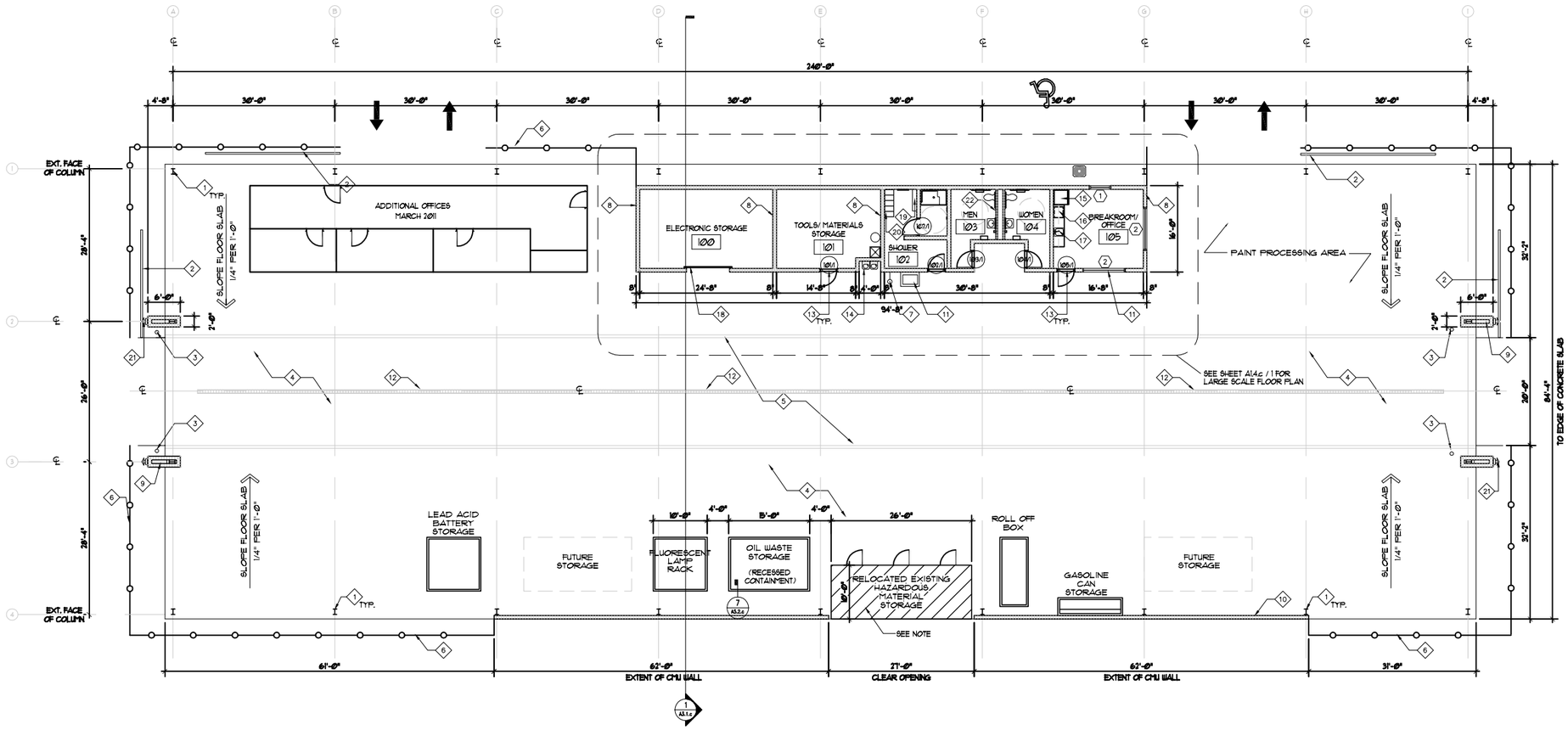
- Customer's printed name and signature
- Date
- Name and quantity of each material received
- Liability statement ("hold harmless" statement)

The form shall be kept on file in the offices of the facility manager or his/her designee.

16.0 Preparedness and Prevention

16.1 Arrangements with Local Authorities

The Facility Manager has arrangements with the fire department and emergency response teams for assistance in an emergency. The Facility Manager has familiarized these agencies with the potential need for services, layout of the facility, properties of the facility, types and properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes.



FLOOR PLAN
SCALE: 3/32" = 1'-0"
20,493 SQ. FT.

DRAWING NOTES

1. COLUMNS FOR METAL BUILDING STRUCTURE (TYP.)
2. 25'-0" WIDE ROLLING GATE WITH OVERHEAD TRACK (TYP.)
3. 8" PIPE BOLLARDS
4. CONCRETE SLAB
5. PAINTED STRIPES ON CONCRETE SLAB
6. 8'-0" HIGH CHAIN LINK FENCE
7. EMERGENCY SHOWER / EYE WASH COMBINATION
8. 8" CMU WALLS
9. 2'-0" x 6'-0" CONC. PILASTERS (SEE ELEVATION SHEET A2.1.c)
10. 8" CMU - SCREEN WALL
11. UTILITY TUB/SINK
12. TRENCH DRAIN
13. THRESHOLDS
14. HI-LO ELECTRIC WATER COOLERS
15. REFRIGERATOR (N.I.C.)
16. MICROWAVE (N.I.C.)
17. SINK
18. OVERHEAD DOOR
19. BENCH
20. LOCKERS
21. WALL SCONCES (TYP.)
22. 4" CMU WALLS - INTERIOR WALLS

NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER THE RELOCATION OF AN EXISTING HAZARDOUS MATERIAL STORAGE (PREFABRICATED BUILDING). THE EXISTING HAZARDOUS MATERIAL STORAGE SHALL BE PLACED IN ITS NEW LOCATION PRIOR TO INSTALLATION OF METAL BUILDING ROOF AND/OR STRUCTURAL MEMBERS THAT MAY INTERFERE WITH THE PLACEMENT OF THE STORAGE BUILDING.

LEGEND

- CMU WALLS
- INT. FRAME WALLS, NON-RATED
- DRAWING NOTES - SEE THIS SHEET
- DOOR KEY - SEE DOOR SCHEDULE, SHEET A6.1.c
- WINDOW KEY - SEE WINDOW SCHEDULE, SHEET A6.1.c
- ROOM TAG - SEE FINISH SCHEDULE, SHEET A6.1.c
- DETAIL KEY - SEE SHEET A5 INDICATED
- WALL TYPES - SEE SHEET A5.1.c

NORTH

REVISION: JULY 10, 2015

ATKINS

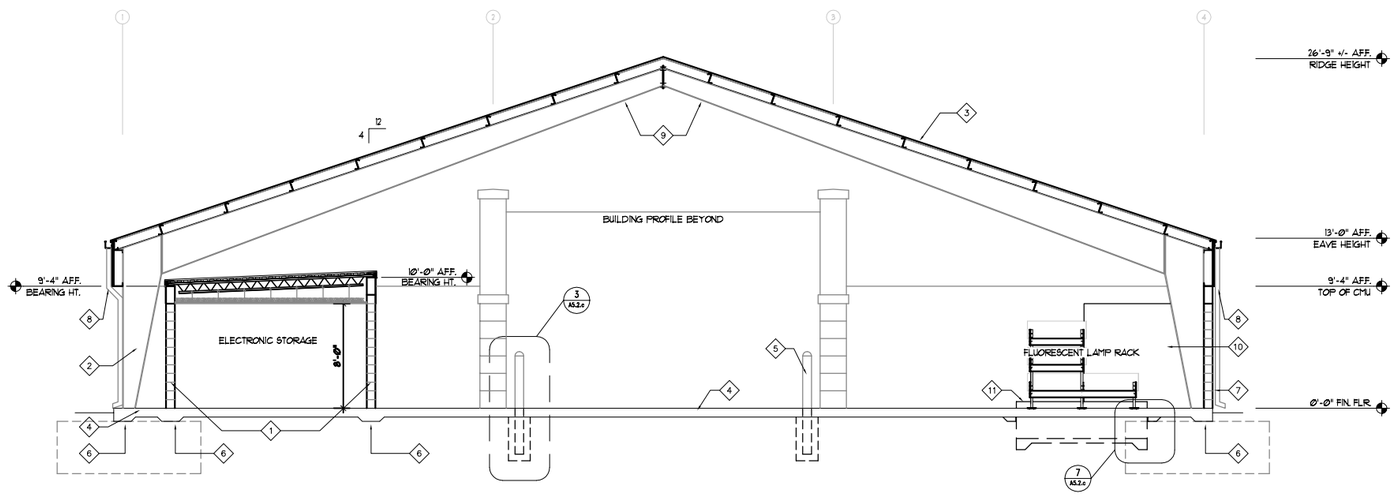
MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

HOUSEHOLD HAZARDOUS WASTE COLLECTION
AND STORAGE FACILITY OPERATION PLAN
FLOOR PLAN

FIGURE
K-2-1

DRAWING NOTES

1. 8" CMU WALLS
2. TYPICAL RIGID FRAME WITH TAPERED COLUMNS
3. STANDING SEAM METAL ROOF
4. CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
5. 8" PIPE BOLLARDS
6. SEE STRUCTURAL DRAWINGS FOR FOUNDATION FOOTING REQUIREMENTS
7. METAL WALL PANELS
8. ALUMINUM GUTTER AND DOWNSPOUT
9. PRE-ENGINEERED METAL BUILDING TRUSS
10. RELOCATED EXISTING HAZARDOUS MATERIAL STORAGE (BEYOND)
11. RECESSED OIL STORAGE CONTAINMENT AREA (BEYOND)



1 / K-2-1 BUILDING SECTION
SCALE: 3/16" = 1'-0"

REVISION: JULY 10, 2015

ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

HOUSEHOLD HAZARDOUS WASTE COLLECTION AND STORAGE
FACILITY OPERATION PLAN
SECTION

FIGURE
K-2-2

ATTACHMENT K-3

Landfill Equipment List

	Quantity
Air Compressor, Sullair	1
Bulldozer, Caterpillar D7	4
Bulldozer, Caterpillar D6	1
Club Car	1
Compactor, Caterpillar 836H	2
Dump Truck, Caterpillar 740	3
Excavator, Caterpillar 345BL	1
Excavator, Caterpillar 345CL	1
Forklift, Yale Veractor 60VX	1
Gator, John Deere	1
Generator - Admin & Ops Kohler	2
Generator - CDO, Caterpillar	1
Generator - Landfill 9021	1
Generator - Scalehouse, Ram Power	1
Grader, Caterpillar 143H	1
Kawasaki Mule	3
Kubota RVT	1
Loader, Caterpillar 950	3
Mowing Deck, 6' Finish Deck	1
Mowing Deck, 20' Flex Deck	2
Polaris Ranger	1
Pump, Thompson 6V-DPRT-1004CPU	2
Riding Lawnmower	2
Roll Off Containers	8
Roll Off Truck, International	1
Scraper, Caterpillar 623G	1
Street Sweeper, Tennant	1
Tarpomatic, 28T	2
Trailer, Crosley	1
Tractor, John Deere 7810	1
Tractor, John Deere 7220	1
Tractor, Massey Ferguson 6495	1
Truck, International 4300 Refueler	1
Vibratory Roller, Saki	1
Water Wagon, Caterpillar 613C	1
Welder W/Plasma Cutter	1

MANATEE COUNTY
LENA ROAD CLASS I LANDFILL
OPERATIONS PLAN

October 27, 2015

Part K

Prepared by:
Manatee County Government
Utilities Department, Solid Waste Division
3333 Lena Road
Bradenton, Florida 34211
941-748-5543

Contents

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1.0 Trained Operators

Manatee County Government personnel operate the Lena Road Landfill. The County requires at least one trained landfill operator certified in accordance with F.A.C., Chapter 62-701.500 (1) and one spotter at the working face at all times during waste disposal operations. The spotter is responsible for guiding vehicles and for assisting code enforcement with enforcing provisions for controlling the waste received. An example of a typical workweek staff schedule is shown in Figure K-1.

General daily operations are as follows:

Time	Activity
7:00 am	Landfill Operations Supervisors, Solid Waste Disposal Chiefs and/or the Solid Waste Maintenance Chief (all certified, trained operators) arrive; distribute daily assignments and checks attendance and equipment sheets. The equipment moves to the working area to prepare the roads and sites for that working day. At least one trained operator is always on site during operations. At least one trained spotter is assigned to the working face each time waste is received to inspect each load from the ground level.
8:00 am	The Scalehouse opens and traffic is routed to the appropriate disposal area.
9:00 am	Personnel begin the morning break times
11:30 pm	Personnel begin the lunch break times
2:00 pm	Personnel begin the afternoon break times
5:00 pm	The Scalehouse closes, entry gates are closed, and the working faces are cleared and covered with approved cover material.
5:45 pm	Operators leave work sites and cleanup equipment.
6:00 pm	Equipment and buildings are secured; alarm set, gates locked and personnel depart.

Landfill Operations - Typical Workweek Staff Schedule

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	Robert Bennett Landfill Operations Supervisor	
Keith Jones Disposal Chief	Keith Jones Disposal Chief	Keith Jones Disposal Chief	Keith Jones Disposal Chief		
Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	Armando Ayala Landfill Attendant	
Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator	Wiley Ballard Landfill Operator		
Darrel Seegmiller Landfill Operator	Darrel Seegmiller Landfill Operator			Darrel Seegmiller Landfill Operator	Darrel Seegmiller Landfill Operator
Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	Clayton Mathis Landfill Operator	
Mike George Landfill Operator	Mike George Landfill Operator			Mike George Landfill Operator	Mike George Landfill Operator
Tim Harper Landfill Operator	Tim Harper Landfill Operator			Tim Harper Landfill Operator	Tim Harper Landfill Operator
		Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief	Eric Siegfried Disposal Chief
Juan Garza Landfill Operator	Juan Garza Landfill Operator		Juan Garza Landfill Operator	Juan Garza Landfill Operator	
		Don Lusby Landfill Operator	Don Lusby Landfill Operator	Don Lusby Landfill Operator	Don Lusby Landfill Operator
		Danny Newman Landfill Operator	Danny Newman Landfill Operator	Danny Newman Landfill Operator	Danny Newman Landfill Operator
Matt Stull Landfill Operator	Matt Stull Landfill Operator	Matt Stull Landfill Operator	Matt Stull Landfill Operator		
Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	Anthony Detweiler Landfill Operations Supervisor	
Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	Richard Jones Maintenance Chief	
Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	Tim Clarkson Landfill Operator	
John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	John Reed Landfill Operator	
Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	Mark Bell Landfill Operator	
Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	Darren Smith Landfill Operator	
Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	Richard Beaulieu Landfill Operator	

Note: This schedule is updated as needed

FIGURE K - 1

2.0 Operations Plan

a. Designation of Responsible Operating and Maintenance Personnel

The Manatee County Solid Waste Management Facility (Landfill) is owned by Manatee County Government and operated under the direction of the Utilities Department, Solid Waste Division. An After Hours Contact List is provided in Table K-1, and a list of landfill positions is given below:

Solid Waste Division Manager	Landfill Superintendent *
Landfill Operation Supervisor (2) *	Household Hazardous Waste Technician
Fiscal Specialist *	
Solid Waste Maintenance Chief *	
Solid Waste Disposal Chief (2)*	Office Assistant
Landfill Operator (14)*	Landfill Attendant*

* Trained spotters

b. Contingency Operations for Emergencies

In the event of an emergency, the County may close the landfill during the emergency event, but will maintain open access to the landfill after the emergency condition passes or the threat level drops. For example, the landfill will be closed during a hurricane, but opened after the hurricane has passed. On-site equipment may not be sufficient to maintain the excess volume of waste generated as a result of an emergency. If so, back-up landfill equipment will be rented within 24 hours from the County's approved bid list. Additionally, back-up equipment will be provided for equipment breakdowns and down time for routine maintenance. In the case of equipment failure or emergencies, rental equipment or equipment from other County agencies will be delivered to the site within 24 hours.

Emergency conditions at the landfill may occur as a result of natural weather events (tornado, flooding, hurricane, etc.) or fire. Staff is currently equipped to mobilize to alternative sites that will be designated as such in conjunction with the Manatee County Emergency Management Department. In the event that emergency conditions interrupt operations at the landfill, a contingency plan will be developed and implemented to establish temporary operations on a case-by-case basis, dependent on conditions at alternative sites such as the closed Erie Road Landfill. Such temporary operations will accept storm debris only, and will be terminated and disposal operations resumed at Lena Road Landfill as soon as practical. If the Lena Road Landfill cannot operate during an emergency, solid waste collection trucks will be diverted to Waste Management's Okeechobee Landfill.

When an emergency condition threatens the landfill operation, the following actions will be taken:

1. Daily cover shall be applied to all exposed refuse before a major storm arrives, if possible.
2. All landfill equipment shall be parked near any natural windscreens such as earthen mounds and berms.
3. All lightweight signs and equipment shall be secured.

4. When operation resumes, work shall commence in dry areas only (up from the active face).
5. Refuse shall not be disposed of in standing water.

Table K-1
Emergency and After Hours Contacts
Lena Road Landfill/Solid Waste Division

Person/Agency		Telephone Number	
Fire Department Battalion Captain Stacey Bailey Chief Byron Teates Manatee County Fire Rescue Administration Office: 3200 Lakewood Ranch Blvd Bradenton,FL 34211 First Responder: Station 2 803 60th Street Court East Bradenton, FL 34202		911 or Non-Emergency 941-751-5611	
Ambulance	911	Sheriff	911
Bomb Squad	911	Non-Emergency	941-747-3011
Public Safety Hazardous		911	
Vacant, Solid Waste Division Manager		H_____ C: _____ Office: 941-748-5543	
Bryan White, Landfill Superintendent		H: 941-322-2369 C: 941-812-2455	
Bob Bennett, Landfill Operations Supervisor		H: 941-758-1741 C: 941-704-7855	
Anthony Detweiler, Landfill Operations Supervisor		H: 941-322-8703 C: 941-812-8796	
Eric Siegfried, Solid Waste Disposal Chief		H: 941-756-3507 C: 941-730-6554	
Keith Jones, Solid Waste Disposal Chief		C: 941-704-6640	
Richard Jones, Solid Waste Maintenance Chief		C: 941-322-4104	
Cari Walz, Household Hazardous Waste Technician		H: 941-358-6820 C: 941-348-7123	

Person/Agency	Telephone Number
David Pickup, Manager-Special Waste	C: 941-962-7087
Jeanne' Detweiler, Superintendent Solid Waste Enforcement	C: 941-812-4301
Debora Braziel-Jones, Solid Waste Collections Supervisor	H: 941-350-9399
Barb Grunas, Solid Waste Collections Supervisor	County Cell: 941-405-9817
Department of Environmental Protection Melissa Madden	Office: 813-470-5700 Direct: 813-4705795

Fire Event

Small fires on the working face will be controlled by a water wagon, bulldozer or landfill compactor and ample water and cover material to extinguish the fire. On-site stockpiles of soil cover material are available for suppressing fires. In the event an uncontrollable fire does occur at the landfill site, the East Manatee Fire Rescue District (941-751-5611) is the responding Department and will be called immediately. The East Manatee Fire Rescue District presently maintains a fire station approximately 3.5 miles west of the facility. In the event of a fire or other emergency, the landfill operator will notify the FDEP within twenty-four (24) hours by telephone and within seven (7) days a written report will be submitted describing the origins of the emergency, actions taken, result of the actions taken, and an analysis of the success or failure of the actions.

A hot load area is provided in a location away from the working face to allow vehicles arriving at the landfill with a fire in their load to dump quickly in an area where the material can be spread out and quickly sprayed by the water wagon. All water sprayed on hot loads will be managed as leachate. The location of the hot load area will change from time to time with the changing working face locations. Hot loads will not be dumped on the working face until sufficiently cool to avoid combustion.

The landfill has accommodations for wet weather solid waste disposal for the residential or small business patrons. The location of the wet weather operations area changes depending upon progression of the fill sequence. The area is bermed and a stabilized tipping surface is provided.

The solid waste disposed of in the wet weather area is loaded into dump trucks and transported to the working face for proper disposal. The wet weather area is also cleaned at the end of each day in order to provide proper litter and vector control.

c. Control of Types of Materials Received

Procedures for observing waste as it is brought to the landfill and unloaded are provided in Section K.2.e. The load-checking program is described in Section K.6. The landfill may dispose of Class I solid waste as defined in 62-701.200 (13).

The following separate areas are maintained for special wastes:

1. Lead-Acid Battery Collection Area
2. Household Hazardous Waste Collection Site
3. White Goods/Scrap Metal Storage Area
4. Yard Waste Processing Area
5. Tire Storage Area
6. Freon Containing Staging Area
7. E-Scrap

Special wastes such as white goods, tires, and yard wastes, require special handling and management. The locations for the Waste Tire Facility, White Goods/Scrap Metals Facility, Household Hazardous Waste Drop-off Facility and Yard Waste Facility are shown on Sheet C-2 of the Fill Sequence Plan. The County temporarily stores white goods and whole tires prior to processing. The white goods are stored in an upright position until such time as the contracted commercial recyclers remove them. Waste tires are stored in the permitted waste tire site prior to removal by the recycler. Tires mixed in loads are removed from the active face. Yard wastes are processed on site by a contracted vendor and removed from the site for re-use in land applications or waste-to-energy plants as fuel. Waste types not accepted for landfilling include all hazardous wastes, all infectious wastes, pesticides and unexpended pesticide containers, free liquids, flammable and volatile wastes, and radioactive wastes.

Asbestos

Asbestos waste haulers are required to notify the landfill operator in advance and provide information on the estimated volume and delivery date of friable asbestos. All incoming asbestos material is required to comply with all applicable permit conditions and to be wet down and double bagged. Asbestos will not be accepted during adverse weather conditions. Asbestos is covered with non-asbestos containing waste or soil and the location will be recorded. Additional procedures for handling asbestos are given in Section K-14.0.c Special Waste Handling - Asbestos.

Hazardous Waste

If hazardous wastes are located at any area of the landfill, the area must be isolated and management notified immediately. Management/Supervisory staff must notify the below listed agencies dependent on the type of material brought to the landfill.

Management/Supervisory staff must notify the following offices for handling and proper disposal of hazardous wastes:

1. Environmental Management Department - (941) 742-5980
2. Sheriff's Department/HazMat Section - (941) 721-2693
3. Utilities Department Director - (941) 792-8811, Extension 5323
4. Household Hazardous Waste Technician (941)348-7123
   (Household Hazardous Waste & E-Scrap Only)

All events regarding receipt of non-household hazardous waste material are kept at the landfill office.

A brief outline of the following materials/programs is given below.

Typical household hazardous wastes (HHW) are as follows:

paint	pesticides	used motor oil	ammunition
herbicides	aerosol cans	propane tanks	flares
gasoline	mercury containing devices	cleaning supplies	

The Household Hazardous Waste Technician (Tech) responsible for operation of the Household Hazardous Waste Collection and Storage Facility must be notified if HHW material is to be disposed. The Tech will arrange for removal and proper disposal. The maximum onsite storage and frequency for removing these recyclables from the site is as follows:

- Used oil (up to 1000 gallons) is to be removed quarterly
- Paints (up to 16,600 gallons) are to be removed quarterly
- Batteries (up to 300 batteries) are to be removed quarterly
- Light bulbs (up to 800) are to be removed at least quarterly
- Electronic devices (up to 50,000 pounds) are to be removed quarterly
- Household Hazardous Waste (up to 2,500 pounds) are to be removed quarterly

A detailed Operations Plan for the HHW facility in provided in Attachment K-2

White Goods

All white goods containing Freon (e.g., refrigerators, air conditioners) are segregated from the waste stream and placed upright in the staging area. Freon is removed by a certified operator, and the item marked as being Freon free. The compressors are removed and oils drained off-site for collection by a licensed hazardous waste transporter under the direction of the scrap metal processor. The white goods are then moved to the general white goods/scrap metal area for collection by the scrap metal contractor at the location indicated on Sheet C-2 of the Drawings.

All white goods, as defined in 62-701.200 (141), entering the landfill in separated loads are sent directly to the designated white goods/scrap metal storage area to be collected by a private scrap metal contractor for recycling purposes.

Up to 400 tons of scrap metal and white goods (a maximum of 600 pieces of white goods) can be stored in this area. The minimum frequency for removal is every six months.

Yard Waste

All incoming yard waste is directed to the designated area to be processed on site by a contracted vendor and removed from the site for re-use in land applications or waste-to-energy plants as fuel. Mulch is also used for the wet weather area during rainy season to assure access to the tipping area during rain events. The minimum frequency for processing yard trash is once every six months or when 3,000 tons (12,000 cubic yards) are accumulated. The contracted vendor then removes the

shredded material for resale to various outlets for land applications or waste-to-energy plants for fuel. The fines generated are also utilized at the landfill and mixed with soil for use as initial cover.

Tires

Tires entering the landfill are directed to the permitted storage area. Large agricultural equipment tires and large or solid forklift tires that cannot be processed for recycling are sent to the landfill disposal area for disposal in the landfill. The contracted vendor removes the tires to a waste-to-energy facility for processing and use as a fuel additive. Removal by the vendors is conducted on an on-call basis.

Batteries

State regulations prohibit disposal of lead-acid batteries in a landfill. The County prohibits collection of batteries by its franchised waste haulers. The Solid Waste Management Act aids in providing for proper disposal by requiring that all entities that sell batteries at retail shall accept used batteries as trade-ins for new batteries.

The County accepts batteries at no cost to its residents who bring them to the landfill facility. Upon entering the scales, the transporter is advised to place all batteries in the storage shed located in the Community Drop Off area. In addition, batteries are accepted at the HHW Facility during its collection events.

The Household Hazardous Waste Technician conducts frequent inspections of the storage shed and HHW Facility to monitor the number of batteries on site. When the on-site count reaches 300, the contracted battery vendor is called to remove them for recycling and/or proper disposal.

The contracted vendor collects the batteries on an on-call basis. When the vendor arrives on site, they are met by the Household Hazardous Waste Technician who observes the transfer of batteries from the collection shed to the vendor's vehicle. The vendor must sign a battery log before the batteries are removed from the facility. The log is also signed by the Household Hazardous Waste Technician verifying the count of batteries removed. The collection agreement is renewed or updated on an annual basis.

d. Weighing Incoming Waste

The Scalehouse operations are supervised and operated by the Manatee County Utilities Department, Solid Waste Section. Three scales are located at the entrance to the landfill. Two are inbound and one is outbound. The weighing of waste is required prior to entering the landfill and weight records are reported to the Department quarterly. Vehicles that enter the electronic scales are recorded on an information management system. This system records the date, type of vehicle, weight, material to be disposed, daily transaction number, and any other information available pertaining to account name or status. The driver is directed to the appropriate disposal area by the scale attendant.

e. Vehicle Traffic Control and Unloading

The landfill facility is surrounded by fencing and other natural barriers that limit vehicle access to the landfill. Directional signs have been placed to safely direct vehicles to the current waste disposal area. These signs have large legible letters and are cleaned, refurbished and moved as necessary. The signs are strategically placed so that the route is clear to the drivers. In addition, verbal instruction is issued by the Scalehouse attendant as required. Fencing or temporary barricades are employed as additional traffic control features. Speed limit, safety, and prohibitive practice signs are also placed as necessary in order to encourage a safe, clean operating area.

The Disposal Chiefs direct disposal operations. The landfill attendant acts as the spotter at the active face. Unloading is permitted only at the designated tipping area next to the working face. At the fill areas, temporary signs and at least one spotter direct vehicles to the proper tipping areas. The spotter directs those persons requiring additional assistance. Haulers are responsible for unloading their own vehicles. Wastes requiring special handling are coordinated with and unloaded under the direct supervision of landfill personnel. Spotters shall be trained and stationed per 62-701.320 (15) (d) Spotter location. The spotter shall be stationed where they can inspect each shipment of waste for unauthorized waste. If spotters are located on heavy equipment spreading the waste at the working face, the heavy equipment operator shall be trained as a spotter and as a heavy equipment operator. When unauthorized waste is discovered, the operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop operation and notify another person on the ground or on other equipment who will come to the active area and remove the unauthorized waste before operations are resumed. Also, each load of waste must be visually inspected for unauthorized waste prior to being compacted. The spotter may move about the working face on foot or on a vehicle as needed to properly direct the positioning of vehicles for unloading and to observe waste as it is unloaded.

Any suspicious loads or vehicles are stopped by the Scalehouse staff for inspection. The County also has a random load inspection program in place as discussed in Section K.6. Spot checking also occurs at the active face. If the spotter detects prohibited, special or hazardous waste while the hauler is still present, the waste is reloaded into the vehicle and is removed from the site. If the hauler cannot be identified, it is the County's responsibility to remove the waste from the landfill for proper disposal.

f. Method and Sequence of Filling Waste

The Fill Sequence Plan from 2016 to 2036 is bound separately and included in Appendix B with the permit application.

g. Waste Compaction and Application of Cover

Waste is typically dumped at the toe of the active face and is spread over the face in a maximum two-foot lift with dozers. Upon completion of waste spreading, compactors typically roll the waste with six passes prior to spreading of additional waste. To achieve the optimum compaction, while minimizing initial cover usage, the active face slopes are maintained at approximately 5:1 (H:V).

The flatter the slope, the greater is the compaction rate and greater amount of soil to cover the waste. The 5:1 face slope provides a good compromise between compaction and soil usage. The compaction with the given equipment and working conditions is approximately 1,200 lb/cy.

Cover material for daily operations of the landfill is obtained from the designated stockpile area. The location for the Cover Material Stockpile is shown on Sheet C-2 of the Fill Sequence Plan drawings. The stockpile is located in the footprint of the Stage II Landfill, as shown on the Fill Sequence Plans located in Appendix B to this permit application. The landfill currently has sufficient cover material available for one year. The County has an open purchase order to buy cover soil as needed to supplement the on-site stockpiles. To minimize soil usage, Manatee County has purchased mechanically operated tarp-type alternate daily cover system (ADC). Tarps are laid across the working face and taken up the next day. Tarps are loaded to minimize the effects of wind uplift. If waste is not deposited on the working face within 24 hours, then soil is used as the cover material. The areas of the working face not covered by the tarps are covered with soil.

h. Operations of Gas, Leachate, and Storm Water Controls - Leachate management is described in K-8.0, gas monitoring in K-9.0 and storm water controls in K-10.0

i. Water Quality Monitoring - See Part L of this permit application.

j. Maintaining and Cleaning the Leachate Collection System – The entire LCRS was jetted and pressure cleaned in June and July 2015. The report on the pressure cleaning is provided in Appendix A to the permit application.

3.0 Landfill Records and Record Locations

The operating records consist of all records, reports, analytical results, demonstrations, and notifications required by Chapter 62-701, F.A.C., all permits and permit modifications, and training records. The operating records are maintained within the filing system at the landfill facility.

Operating records denoting events are maintained by the landfill staff in accordance with the Operational Permit. Some examples of daily operations of the landfill are:

Operation and maintenance of the facility
Special wastes monitoring
Manpower and equipment usage
Storm water and leachate issues
Compliance with permits, applicable rules, regulations and laws
Fill sequence plan adherence

4.0 Waste Records

Monthly waste records are kept on site and submitted to the FDEP quarterly. A sample report is included as Figure K-2.

FIGURE K-2

MANATEE COUNTY CLASS I LANDFILL
WASTE RECORDS

YEAR 2009

TOTAL WASTE RECEIVED AND WASTE TYPE	SOLID WASTE RECEIVED MONTHLY REPORTED IN TONS												TOTAL
	FIRST QUARTER			SECOND QUARTER			THIRD QUARTER			FOURTH QUARTER			FOR
(SEE NOTE BELOW) *	January	February	March	April	May	June	July	August	September	October	November	December	YEAR
TOTAL WASTE RECEIVED													
Household Waste	18.7	11.7	30.3	10.9	7.1	27.7							
Commercial Waste	12740.43	11234.2	12594.7	12360.78	12160	11889.6							
Ash Residue	0	0	0	0	0	0							
Incinerator by-pass Waste	0	0	0	0	0	0							
Construction & Demolition Debris	916	831.5	1243.5	998.2	724.1	964.7							
Treated Biomedical Waste	0	0	0	0	0	0							
Agricultural Waste	64.8	141	50.8	215.1	32.9	467.6							
Industrial Waste	0	0	0	0	0	0							
Yard Trash	2241.5	2309.9	3378.5	3924.2	2485	2484.8							
Sewage Sludge	226	131.2	176.7	690.8	586.1	430.7							
Industrial Sludge	0	0	0	0	0	0							

* The Landfill Operator shall:

1) Weigh all solid waste as it is received;
2) Record, in tons per day, the amount of solid waste received;
3) Estimate the amount received by waste type as listed in this table; and,
4) Compile the reports monthly, and send copies to the Department quarterly.

5.0 Access Controls

Access to the landfill is controlled by a six-foot high chain link fence along the west side of the landfill and a barbed-wire and/or field fence around the remainder of the site. The access gates are locked at the close of each business day. Signs indicating hours of operation, operating and permitting authorities, and directions for persons delivering waste are posted at the entrance. Additional signs are used along the site access roads and at the working face to direct traffic to the proper disposal areas.

6.0 Load Checks

The County has a random load inspection program in accordance with F.A.C. Chapter 62.701 and inspects at least three loads per week. Drivers with loads selected for random inspection are instructed to dump their loads at a designated location near the working face but segregated from other waste. The selected load is inspected to determine if the load contains any unauthorized waste. Spot-checking also occurs at the active face. The Load Inspection Form is included as Figure K-3.

If the spotter detects a load of unauthorized waste while the hauler is still present, the waste is reloaded into the vehicle and is removed from the site. If the hauler has left the site, attempts will be made to identify the generator, hauler, or other party responsible for shipping the waste. Identified responsible parties will be contacted and asked to remove the unauthorized waste. If the generator, hauler, or other party responsible for shipping the waste cannot be identified, or if they will not remove the waste, the County will remove the waste from the landfill for proper disposal.

If any regulated hazardous wastes are identified by random load inspection, or are otherwise discovered to be improperly deposited at Lena Road Landfill, the landfill operator shall notify the FDEP, the person responsible for shipping the wastes to the landfill and the generator of the wastes, if known. The area where the wastes are deposited shall be immediately cordoned off from public access. If the generator or hauler cannot be identified, the landfill operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.

A small quantity of unauthorized waste which must be stored on-site while awaiting removal for disposal will be stored in the household hazardous waste collection area until it can be removed by contractor for proper disposal. Waste quantities too large to store in the household hazardous waste collection area, will be isolated at the landfill face with temporary berms constructed around the waste to ensure containment of any surface runoff. The area will be properly marked with signs, and temporary fencing will be used to prevent unauthorized access to the material until it can be shipped off-site for proper disposal.

Sources found or suspected to be previously responsible for shipping regulated hazardous waste will be informed of landfill requirements and referred to FDEP for hazardous waste information. Subsequent shipments from such sources will be scrutinized for unauthorized or hazardous waste. Inspection results, information, and observations resulting from each random inspection will be recorded and retained at the landfill for at least three years.

Supervisors, landfill operators, and spotters are trained to identify unauthorized wastes or potential sources of regulated hazardous wastes. This training emphasizes familiarity with containers and labels typically used for hazardous wastes and hazardous materials. Controlling types of waste received is discussed in Section K.2.e.

LOAD INSPECTION FORM

DATE: _____ TIME: _____ INSPECTOR: _____

LOCATION: _____

DRIVER NAME: _____

COMPANY NAME: _____ DECAL #: _____

TAG #: _____ TRUCK DESCRIPTION: _____

ORIGIN OF WASTE: _____

WASTE COMPOSITION: _____

_____

NOTE QUANTITY OF THE FOLLOWING, IF APPLICABLE:

FLUORESCENT LAMPS (10 or more) _____

MERCURY CONTAINING DEVICES _____
Thermostats, Thermometers, Bilge Pumps, Manometers, Etc.

BIO-HAZARD MATERIALS FOUND _____

OTHER HAZARDOUS MATERIALS FOUND _____

TIRES, LEAD ACID BATTERIES _____

OIL BASED PAINT _____

IF YES, EXPLAIN CIRCUMSTANCES OF COLLECTION: _____

_____

IF YES, MANAGEMENT INFORMED: Yes _____ No _____

NAME AND TITLE: _____

7.0 Waste Compaction

a. Waste Layer Thickness

Waste is typically dumped at the toe of the working face and is spread over the face in a maximum of two-foot lifts prior to compaction. This procedure continues throughout the day for a typical lift thickness of no more than 10-feet.

b. First Waste Layer

The area to be filled has been completely covered by waste during previous permit periods. The first layer of waste placed above the leachate collection system in Stage II will be a minimum of four feet in compacted thickness and shall consist of selected wastes containing no large rigid objects that may damage the leachate collection system. Special care shall be exercised when filling around pump stations to prevent damage.

c. Slopes and Lift Depths

The exterior landfill side slope is constructed at 4:1 (H:V) or slightly steeper because settlement of the side slope causes a lesser slope to result in a final slope of no more than 4:1. Any temporary slopes for such structures as storm water diversion dikes, roads, excavations, etc. are constructed with slopes no steeper than 3:1. The lift depths shall be 10-feet or less. The typical minimum top slopes to promote drainage are generally one percent within the bermed working face, and two percent on the intermediate cover areas.

d. Working Face

The active face width is no greater than necessary to accommodate the peak number of disposal vehicles at one time. The wider the active face, the more cover soil is used. The County uses an active face of 150 feet in width. The working area of the active face has a slope of approximately 5 horizontal to 1 vertical. The objective for the dimensions of the active face is to maximize the volume to face surface ratio.

e. Initial Cover Controls

Materials used as initial cover include street sweepings, ditch cleanings, crushed glass, and/or a tarp as an alternative daily cover (ADC), soil, soil with up to 25% fines from the yard processing area, and recovered screen material (RSM) from FDEP permitted facilities. The tarp, when used, covers the working face with a weighted tarp. Currently, 100' x 40' tarps are used to cover the working face. Initial cover is applied daily at a minimum thickness of six inches. Soil with up to 25% fines (by volume) from yard trash processing, may be used for initial cover.

f. Initial Cover Applications

The tarp alternative daily cover system is the primary method of daily cover. Soil is used to supplement ADC and when conditions prohibit use of ADC. For those times when conditions prohibit the use of ADC, initial cover will be stockpiled near the active face for use at the end of each day. Dozers used for spreading waste will spread cover soil, when used or authorized equipment for tarp cover application will be utilized to cover the exposed refuse when ADC is used.

g. Intermediate Cover

An additional 12 inches of compacted cover soil (intermediate cover) is placed over six inches of initial cover, within seven days of cell completion, on areas that are not scheduled to receive wastes within 180 days. The top of the intermediate soil cover is graded at a minimum of two percent. These areas have sod to reduce erosion. Prior to placement of additional wastes in these areas, the intermediate cover is removed and stockpiled adjacent to the active face for use as initial cover.

h. Final Cover Timing

Final cover is placed after the landfill is closed.

i. Scavenging

Scavenging is prohibited.

j. Litter Policing

Litter fences are installed near the active face to capture wind-blown litter. Manatee County contracts a temporary labor employer to police the landfill property daily to ensure that litter outside the working area is picked up within 24 hours. Litter fences are also installed along the top of the banks, parallel with interior storm water ditches to minimize litter from entering the storm water management system.

k. Erosion Control

Erosion is controlled with sod and terraces. Manatee County has implemented an aggressive sod plan to protect intermediately covered side slopes from erosion. Temporary piping is used to remove runoff from the sod covered terraces. This temporary piping drains collected runoff for discharge into the perimeter storm water ditch system.

The landfill is inspected daily for signs of erosion and exposed solid waste. Erosion control measures are employed to correct any erosion which exposes waste or causes malfunction of the storm water management system. Such measures are implemented within three days of occurrence. Typically this requires replacing the eroded cover soil with clean cover soil, and

covering the soil with sod, or removing debris from the storm water inlets, pipes and outlet structures. If the erosion cannot be corrected within seven days of occurrence, the landfill operator shall notify the Department and propose a correction schedule.

8.0 Leachate Management

a. Leachate Level Monitoring

Leachate Collection and Removal System Overview

Stage I System

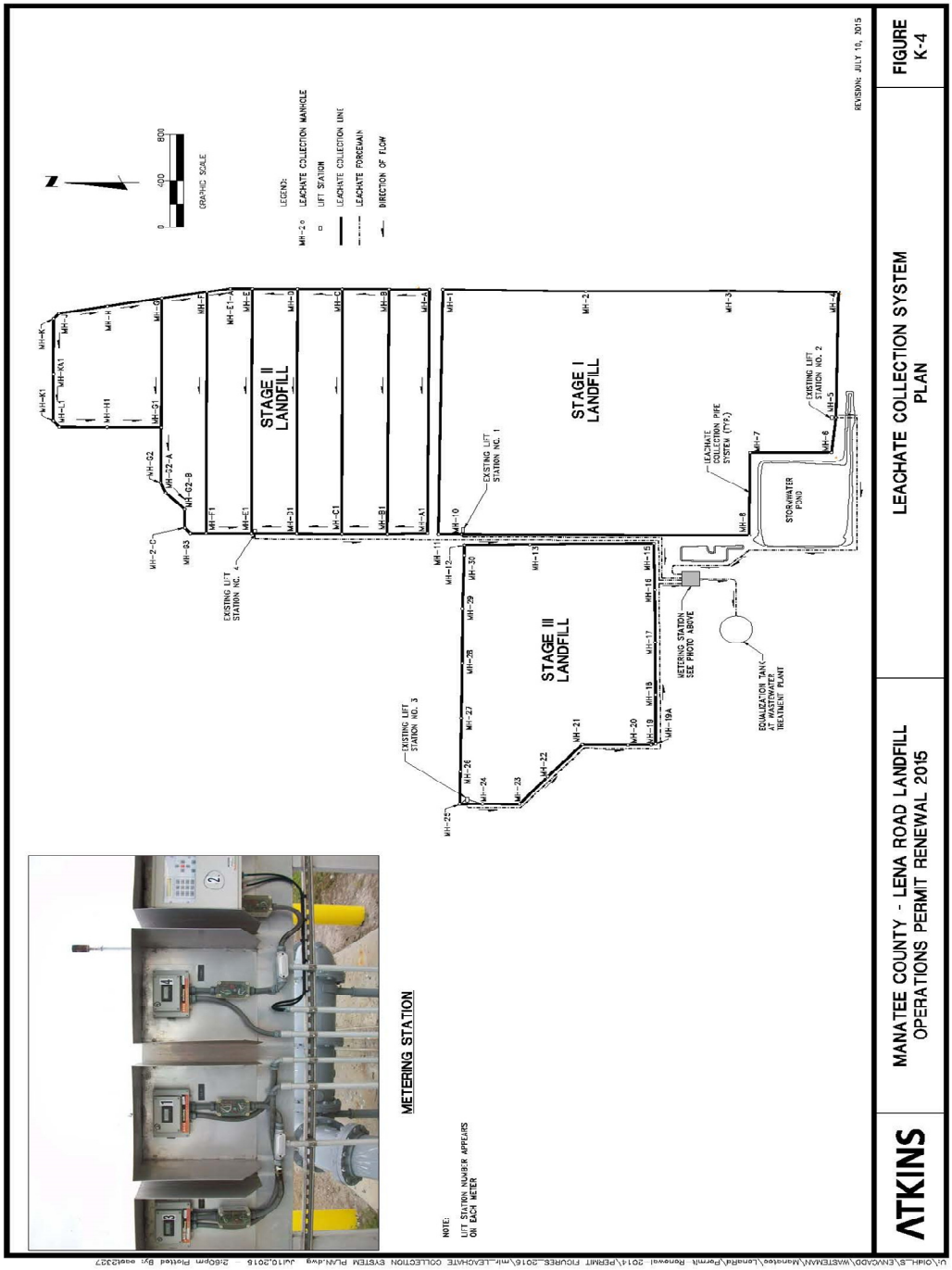
The Stage I Leachate Collection and Removal System (LCRS) as shown on Figure K-4 is a perimeter underdrain around Stage I. The underdrain is approximately 10 feet inside the perimeter slurry wall and approximately 12 feet below grade. The underdrain is an 8-inch, perforated pipe surrounded by aggregate. The pipe and aggregate are wrapped in a geotextile. Manholes and cleanouts are constructed to provide access for cleaning and repairs.

The slurry wall and underlying clay-confining unit is the containment/barrier system designed to prevent leachate movement to the outside surficial aquifer. The slurry wall and LCRS is the FDEP-approved method designed and constructed to minimize impacts, due to landfill operations, to the surrounding environment. The slurry wall is keyed into the underlying natural clay unit. The depth of the slurry wall varies, depending on depth to the clay unit.

Two lift stations are used to pump collected leachate to the wastewater treatment plant (WWTP). Lift Station No. 1 is located in the northwest corner of Stage I. Lift Station No. 2 is located at the southeast corner. Collected leachate enters the underdrain system and gravity flows back to either lift station. Both lift stations operate in the similar manner. Two submersible pumps pump collected leachate from the lift station. The first pump is activated when the low-level float senses leachate entering the lift station. The pump will operate until the float sensor deactivates. If leachate enters the lift station at a faster rate than the first pump can draw it down, the high-level float will activate the second pump to turn on. Upon deactivation of the high-level float, the second pump will shut off. Lift stations can operate in the hand or automatic setting. Both lift stations are set to operate in the automatic mode. Both pumps are 10HP 230/60 1735 RPM. From the lift stations, leachate is pumped through a 6-inch pipe to the adjacent WWTP storage tank. The flow in each forcemain will be individually metered. After the meters, the individual forcemains will be manifolded into a single 12-inch forcemain and connected to the waste treatment plant piping.

Stage II

The Stage II LCRS has a perimeter leachate collection trench and an underdrain to collect leachate which flows to Lift Station (Pump Station) 34. The location for the leachate collection system and pump station is shown on Figure K-4 and on the Fill Sequence Plan drawings. The slurry wall is keyed into the underlying clay unit to prevent movement of leachate to the outside surficial aquifer. Unlike Stages I and III, Stage II has collection laterals which run the entire


LEACHATE COLLECTION SYSTEM PLAN
FIGURE K-4
MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015
ATKINS
REVISION: JULY 10, 2015
STAGE I LANDFILL
STAGE II LANDFILL
STAGE III LANDFILL
STORMWATER POND
EXISTING LIFT STATION NO. 1
EXISTING LIFT STATION NO. 2
EXISTING LIFT STATION NO. 3
EXISTING LIFT STATION NO. 4
LEACHATE COLLECTION PIPE SYSTEM (TYP.)
METERING STATION SEE PHOTO ABOVE
EQUALIZATION TANK AT WASTEWATER TREATMENT PLANT
LEGEND:
LEACHATE COLLECTION MANHOLE
LIFT STATION
LEACHATE COLLECTION LINE
LEACHATE FORCEMAIN
DIRECTION OF FLOW
GRAPHIC SCALE
METERING STATION
NOTE:
LIFT STATION NUMBER APPEARS ON EACH METER

width of Stage II, spaced on 200 foot centers. However, until refuse is buried in Stage II, no leachate is produced so the inward gradient requirement around Stage II is not required or maintained. Ground water and rain water collected in the underdrain system is pumped into the Stage II perimeter storm water ditch. When solid waste is placed in Stage II, the pump station will pump the leachate to the wastewater treatment plant

Stage III

The Stage III LCRS is similar in design to Stage I and Stage II LCRS. The underdrain runs along the north, south, east, and west sides of Stage III, approximately 10 feet inside the slurry wall. The slurry wall ties into the west side of the Stage I slurry wall. The alignment of the slurry wall defines the footprint for Stage III. Leachate entering the underdrain gravity flows back to the lift station. One lift station, Lift Station 3, is located in the northwest corner of Stage III. Collected leachate is pumped to the WWTP. The lift station is similar in design and operation to the lift stations described for Stage I. Storm water runoff from Stage III drains from the surface through a sand trench into an underdrain. This runoff adds significantly to the total volume of leachate produced from Stage III. When above grade filling begins, top slopes will be graded to drain storm water to the perimeter storm water ditches.

Operational Performance Objectives

Objectives

It is the County's intent to maintain an inward gradient by collection and removal of leachate, with subsequent discharge to the WWTP. Staff will evaluate the following conditions in an effort to maintain water levels lower inside the slurry wall compared to levels outside the slurry wall, or to recover the inward gradient within thirty days.

- Water Levels
- WWTP Availability
- Pumping Rates
- Seasonal Variations
- Unexpected or Scheduled Downtime

Compliance Monitoring and Evaluation

Monitoring Reports

Figure K-5A is the typical Water Balance Report format used for the Lena Road Landfill. This report is used to quantify the volume of leachate generated on a daily and per month basis from Stages I and III and for when the Stage II Landfill becomes the active landfill.

Additional information includes:

- The volume of leachate pumped to the WWTP
- The volume of leachate pumped from Stages I and III
- Rainfall in gallons and inches

The content and format of the report are approved by the FDEP. Figure K-6A (K-6A will be used when the Stage II Landfill is active) is a typical Monthly Leachate Summary Report. This report is used to summarize the following information:

- Total leachate
- Total rainfall
- Total leachate treated by the WWTP

Figure K-5A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY

LENA ROAD LANDFILL

MONTHLY WATER BALANCE REPORT

APRIL, 2010

A	B	C	D		E	F	G	H
DATE	LEACHATE STAGE I Lift Station 1 (gallons)	LEACHATE STAGE I Lift Station 2 (gallons)	LEACHATE STAGE I TOTAL (gallons)	LEACHATE STAGE II TOTAL (gallons)	LEACHATE STAGE III TOTAL (gallons)	TOTAL LEACHATE PUMPED (gallons)	RAINFALL (inches)	RAINFALL (gallons)
01-Apr-10								
02-Apr-10								
03-Apr-10								
04-Apr-10								
05-Apr-10								
06-Apr-10								
07-Apr-10								
08-Apr-10								
09-Apr-10								
10-Apr-10								
11-Apr-10								
12-Apr-10								
13-Apr-10								
14-Apr-10								
15-Apr-10								
16-Apr-10								
17-Apr-10								
18-Apr-10								
19-Apr-10								
20-Apr-10								
21-Apr-10								
22-Apr-10								
23-Apr-10								
24-Apr-10								
25-Apr-10								
26-Apr-10								
27-Apr-10								
28-Apr-10								
29-Apr-10								
30-Apr-10								
01-May-10								
TOTAL	**0**	**0**	**0**		**0**	**0**	**0.00**	**0**
Leachate Pumped as Percentage of Rainfall			#DIV/0!		#DIV/0!			

Column Notes:

A - Date of reading.
B - Leachate pumped (gallons) from Stage I by lift station 1.
C - Leachate pumped (gallons) from Stage I by lift station 2.
D - Total Stage I leachate pumpage (B+C).
E - Leachate pumped (gallons) from Stage III.
F - Total leachate pumped to WWTP storage tank (D+E).
G - Rainfall (inches) recorded on this date.
H - Rainfall (gallons) calculated based on open area (G x Area x 27,156 gal/acre-in).

	Stage I (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	--	66.0	66.0
Intermediate Cover	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

Comments

9/10/2015 - 2:53 PM "0" = no data recorded Figure K-5A.xls jlm/PBS

FIGURE K-6A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY
LENA ROAD LANDFILL
MONTHLY LEACHATE TRACKING SUMMARY -- _____ Year

	B		C	D	E	F	G	H
MONTH	STAGE I LEACHATE (gallons)	STAGE II LEACHATE (gallons)	STAGE III LEACHATE (gallons)	TOTAL LEACHATE (gallons)	RAINFALL (inches)	RAINFALL (gallons)	STAGE I LEACHATE/ RAINFALL (%)	STAGE III LEACHATE /RAINFALL (%)
JANUARY								
FEBRUARY								
MARCH								
APRIL								
MAY								
JUNE								
JULY								
AUGUST								
SEPTEMBER								
OCTOBER								
NOVEMBER								
DECEMBER								
TOTAL	0		0	0	0.00	0	#DIV/0!	#DIV/0!

Notes:
1. (B) Total leachate pumped from Stage I.
2. (C) Total leachate pumped from Stage III.
3. (D) Total leachate (Column B+C) pumped to the WWTP storage tank.
4. (E) Total rainfall in inches.
5. (F) Total rainfall in gallons (Stage I and III Open Area of 168-acres x Rainfall)
6. (G) Stage I leachate pumped as a percentage of rainfall.
7. (H) Stage III leachate pumped as a percentage of rainfall.

Landfill Stage Land Areas

	Stage I	Stage III	TOTAL
	(acres)	*(acres)*	*(acres)*
Initial Cover	--	66.0	66.0
Intermediate Cov	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

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Figure K-6A.xls;jlm/PBS

Figure K-7A (K-7A will be used when the Stage II Landfill is active.) is a typical Ground Water Gradient Monitoring Report. Seventeen ground water monitoring wells are installed around the perimeter of the landfill, outside the slurry wall to monitor the shallow aquifer. Seventeen piezometers are installed around the perimeter of the landfill inside the slurry wall to measure depth to ground water of the shallow aquifer only. No ground water samples are collected from the piezometers. This report presents ground water elevations recorded at selected monitoring wells and compares them to the ground water elevations recorded at the piezometers. These locations are shown on Figure 1 in Attachment L-1, the Water Quality Monitoring Plan. The monitoring wells are located outside the slurry wall. The piezometers are located inside the slurry wall. An inward gradient is maintained when water elevations outside the slurry wall are higher than elevations recorded inside the slurry wall.

b. Operation and Maintenance of Leachate Collection System

Quantities from Lift Station Nos. 1, 2 and 3 are recorded and submitted to FDEP on a monthly basis using the forms on Figures K-5A and K-6A. When the Stage II Landfill becomes active, Pump Station 4 will be included. Flow rates are checked and confirmed semi-annually and kept at the Lena Road Landfill. If a failure in the underdrain system is suspected, the system is videoed. Every five years, or if a problem is suspected, the underdrain is cleaned by hydro jetting. Manholes are visually inspected on a monthly basis. When necessary, the manholes are cleaned to promote drainage towards the lift station.

c. Leachate as Hazardous Waste

Based on years of analysis, leachate from the landfill is not a hazardous waste. If at any time the leachate is determined to be hazardous, it will be managed in accordance with Rule 62-730, F.A.C. If the leachate analysis indicates a contaminate listed in 40 CFR Part 261.24 exceeds the regulatory level, a monthly sampling of leachate will begin and FDEP notified. If in any three consecutive months no listed contaminant is found to exceed the regulatory limit, the monthly sampling will be discontinued and the routine sampling schedule implemented.

d. Off-Site Discharge Agreements

All collected leachate is pumped to an equalization tank at the WWTP for treatment and disposal. Due to the common ownership of the landfill and the WWTP, the Utilities Department Director has issued a letter stating leachate will be accepted at this facility or at another off-site treatment plant as required.

e. Leachate Management Contingency Plan

In the event of short duration system failure, the landfill can store leachate. The County intends to maintain a one-foot inward gradient across the slurry wall so leachate would have to rise a foot before the facility was out of compliance with the permit condition to maintain an inward

FIGURE K-7A

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year:

Piezometers Inside Slurry Wall				Groundwater Monitoring Wells Outside Slurry Wall		
Piezometer	Riser Elevation	Leachate Elevation	Gradient Flow	Monitoring Well	Riser Elevation	Groundwater Elevation
P-3	40.36	26.46	*inward*	GW-3	39.40	34.10
P-4	40.78	22.08	*inward*	GW-4	40.53	32.82
P-5	40.73	20.82	*inward*	GW-5	39.90	32.08
P-6	40.74	19.78	*inward*	GW-6	38.95	31.30
P-7	40.60	18.82	*inward*	GW-7	39.49	29.38
P-8	40.21	18.59	*inward*	GW-8	39.75	28.45
P-9	39.97	19.36	*inward*	GW-9	39.65	28.95
P-10	39.86	19.25	*inward*	GW-10	38.34	29.25
P-11	40.52	22.39	*inward*	GW-11	38.26	30.29
P-12	43.28	29.37	*inward*	GW-12	42.09	31.64
P-13	44.78	30.35	*inward*	GW-13	44.79	32.46
P-14	45.09	29.79	*inward*	GW-14	39.63	33.86
P-15	45.57	30.89	*inward*	GW-15	42.33	35.17
P-16	44.67	24.67	*inward*	GW-16	44.41	41.41
P-17	44.28	29.60	*inward*	GW-17	42.19	35.03
P-18				GW-18		
P-19				GW-19		
P-20				GW-20		
P-21				GW-21		
P-22				GW-22		
P-23				GW-23		
P-24				GW-24		
P-25				GW-25		
P-26				GW-26		
P-27				GW-27		
P-28				GW-28		

Comments:

Date Data Collected:

Form Revised December 6, 2004

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Fig K-7A.xls:jlm/PBS

gradient. In the event of an extended power outage at the landfill (i.e., more than 7 days), the County will rent a portable generator to provide power to the lift stations.

Any treatment plant operational or power problems will be addressed by the treatment plant as a part of its permitting procedures. Generators are available to provide emergency power at the treatment plant.

Leachate will be trucked to the County's Southwest Treatment Plant or North Wastewater Treatment Plant, if necessary.

f. Leachate Generation Recording

Leachate generation records are reported on the forms in Figures K-6A and K-7A.

g. Precipitation/Leachate Comparison

Precipitation is compared to leachate collected using the form in Figures K-6A and K-7A.

h. Procedures for Water Pressure Cleaning or Video Inspecting Leachate Collection System

Every five years, or if a problem is suspected, the leachate collection pipes are pressure cleaned. Video inspection is not used unless there is a suspected problem or blockage.

9.0 Gas Monitoring

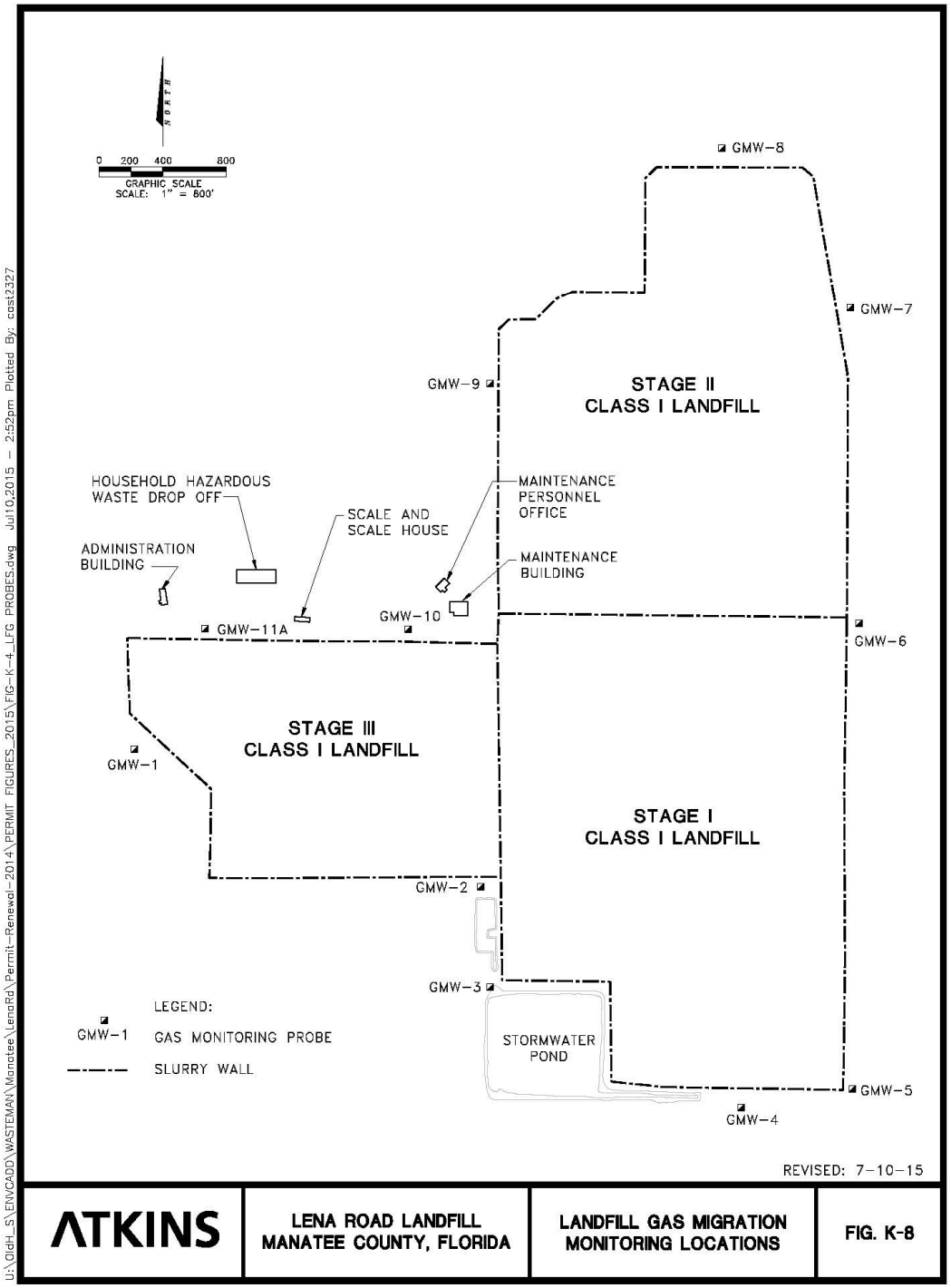
Gas monitoring is performed on a monthly and quarterly basis by a qualified solid waste engineer or consultant. The gas monitoring at the site is divided into three separate tasks: Quarterly monitoring of the gas well and points; quarterly monitoring of surface emissions on the closed portions of the landfill; and monthly monitoring of the landfill gas extraction system. Each task will be discussed in detail below.

a. Gas Well and Point Monitoring

On a quarterly basis, the solid waste engineer monitors landfill gas emissions at eleven gas wells located on the site as shown on Figure K-8. The gas monitoring wells are located along the perimeter of the landfill, and are constructed of 1¼ to 2-inch diameter PVC, encased in locking aluminum stand-boxes.

The monitoring is performed using the CES Landtec Gas Extraction Monitor Model 2000 (GEM 2000). According to Chapter 62-701.530(1) of the Florida Administrative Code, methane gas levels are required to be less than the maximum level of 25% of the Lower Explosive Limit (LEL) for the interior of structures (gas points) and less than 100% of the LEL for points at or beyond the landfill property boundary.

The gas well samples are collected by removing the PVC cap of the well and inserting the intake tube of the GEM 2000 into the casing, or attaching it to the sampling port on the top of the well cap. The sample points are monitored by walking the area of interest while exposing the GEM 2000 intake tube to the atmosphere. The monitoring event typically takes one workday. The results are reported using a typical form as shown on Figure K-9.


NORTH
0 200 400 800
GRAPHIC SCALE
SCALE: 1" = 800'
GMW-8
GMW-7
GMW-9
STAGE II
CLASS I LANDFILL
HOUSEHOLD HAZARDOUS
WASTE DROP OFF
SCALE AND
SCALE HOUSE
MAINTENANCE
PERSONNEL
OFFICE
ADMINISTRATION
BUILDING
MAINTENANCE
BUILDING
GMW-10
GMW-11A
GMW-6
STAGE III
CLASS I LANDFILL
GMW-1
STAGE I
CLASS I LANDFILL
GMW-2
GMW-3
LEGEND:
GMW-1 GAS MONITORING PROBE
SLURRY WALL
STORMWATER
POND
GMW-5
GMW-4
REVISED: 7-10-15
ATKINS
LENA ROAD LANDFILL
MANATEE COUNTY, FLORIDA
LANDFILL GAS MIGRATION
MONITORING LOCATIONS
FIG. K-8
U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\FIG-K-4_LFG PROBES.dwg Jul10,2015 - 2:52pm Plotted By: cast2327

MANATEE COUNTY LENA ROAD LANDFILL

GAS MONITORING REPORT

3RD QUARTER 2009

JULY 2009 – SEPTEMBER 2009

METHANE GAS READINGS

Date of Readings:_____

Gas Well	Reading % LEL	NOTES
Well 1	0.0	
Well 2	0.0	
Well 3	0.0	
Well 4	0.0	
Well 5	0.0	
Well 6	0.0	
Well 7	0.0	
Well 8	0.0	
Well 9A	0.0	
Well 10	0.0	
Well 11A	0.0	

FIGURE K-9

b. Surface Emission Monitoring

The solid waste engineer performs surface-emission monitoring event on a quarterly basis on the Stage I and III Landfills in compliance with Section 60.753 of the Title V Permit No. 0810055-004-AV. Quarterly monitoring will begin at the Stage II Landfill five years after solid waste is placed in the Stage II Landfill. During this event, the solid waste engineer performs surface gas sampling with Thermo Environmental Instruments Model 680 Hydrocarbon Vapormeter (HVM). The monitoring path followed the same grid system as in previous events as approved for the permit. The sensor of the HVM was maintained at approximately 5 centimeters above the Landfill surface during monitoring. The perimeter of the Landfill was checked. All landfill penetrations for gas wells, pipes, etc., areas with distressed vegetation and cracks in the soil cover were also checked for landfill gas emissions.

Locations at which a methane concentration of 500 parts per million (ppm) or greater as observed will be noted on a site map and the appropriate changes to the landfill gas system will be made. The location of interest should be rechecked within a week to verify that the problem has been rectified. This event takes approximately one day to perform. However, depending on the number of locations (if any) that are observed to be in violation, additional monitoring time may be necessary.

c. Landfill Gas Extraction System Monitoring

The solid waste engineer performs monthly monitoring of the landfill gas extraction system. There are currently 231 wells and 15 sample points in the system. The sample points include locations in the extraction system pipes leading into the flare and a point at the flare itself. The gas composition, static pressure, differential pressure, flow and temperatures at each of the well locations and points are recorded using the GEM 2000. The flare temperature and total gas flow at the flare reported by the flare computer are recorded by hand. In order to minimize the amount of air pulled into the system, it may be necessary to close some of the extraction wells. As a result, not all of the wells will be sampled on a monthly basis.

The data recorded using the GEM 2000 is reported in tabular form on a monthly basis. A sample data table is shown on Figure K-10. The table indicates which wells or point locations that are not in compliance with the landfill's Title V Air Operation Permit. Compliance at a gas well or point is achieved when the concentration of oxygen is less than 5%, the concentration of nitrogen or balance gas is less than 20%, the static pressure is less than 0 inches of water (i.e., the well is under vacuum) and the temperature is less than 131˚ F. Shaded boxes on the data table indicate out-of-compliance parameters.

FIGURE K-10

MANATEE COUNTY -- LENA ROAD LANDFILL
GAS EXTRACTION WELL -- MONTHLY MONITORING

FEBRUARY 2007

Well ID	Date and Time	CH_4 (%)	O_2 (%)	Bal (%)	Temp. (°F)	Static Pressure (inches H2O)	Corrective Action	Comments / Damage
1								Well Closed.
2								Well Closed.
3								Well Closed
4								Well Closed.
5								Well Closed.
6								Well Closed.
7								Well Closed.
8								Well Closed
9								Well Closed.
10								Well Closed.
11								Well Closed.
12								Well Closed.
13								Well Closed.
14								Well Closed.
15								Well Closed.
16								Well Closed.
17								Well Closed.
18								Well Closed.
19								Well Closed.
20								Well Closed.
21								Well Closed.
22								Well Closed.
23								Well Closed.
24								Well Closed.
25								Well Closed.
26								Well Closed.
27								Well Closed.
28								Well Closed.
29								Well Closed.
30								Well Closed
31								Well Closed.
32								Well Closed
33	2/17/2007 8:34	51.6	0.3	10.5	86	-3.5	50	
34	2/17/2007 8:38	53.1	0.1	8.5	66	-14	50	
35	2/17/2007 8:43	52.5	0.8	7.6	48	-17	100	
37	2/17/2007 8:47	41.8	5.2	25.3	78	-1.9	50	
38	2/17/2007 8:51	50.2	0.4	12.5	60	-7.1	50	
39	2/17/2007 8:55	53.6	0.8	8.2	80	-9.3	50	
40	2/17/2007 8:58	54.3	0.8	9.5	82	-7.3	35	
41								Well Closed.
42								Well Closed.
43	2/17/2007 9:02	56.7	0.4	6.9	88	-4.4	50	
44								Well Closed.
45								Well Closed
46	2/17/2007 9:06	56	0	7.5	92	-16.5	100	
47								Well Closed.
48	2/17/2007 9:18	55.8	0.8	2.6	108	-13.8	50	
49	2/17/2007 11:29	55.8	1.1	2.4	98	-13.9	100	
50	2/17/2007 11:33	56.4	0.7	0.8	93	-14.6	100	
51	2/17/2007 11:36	55.5	0.7	1.2	102	-14.1	50	
52	2/17/2007 11:39	55.4	0.6	1.4	110	-14.5	100	
53	2/17/2007 11:44	57.1	0.7	1.2	72	3	35	
54	2/17/2007 11:47	56.3	0.5	0.6	97	-3.9	50	
55	2/17/2007 12:02	56.4	0.6	0.2	90	-13.7	100	
56	2/17/2007 12:05	56.1	0.6	0.2	112	-4.2	50	
57	2/17/2007 12:11	55.5	0.9	0.1	104	-4.5	50	
58	2/17/2007 12:18	56.4	0.9	0.5	72	-9.6	50	
59	2/17/2007 12:27	55.2	0.7	0.3	78	-11.3	100	
60	2/17/2007 12:31	55.7	0.8	0.5	77	-14.6	50	
61								Well Closed.
62								Well Closed.
63								Well Closed.
64	2/17/2007 12:35	57.3	0.6	1.4	53	-14.8	100	
65								Well Closed.
66	2/17/2007 12:25	53.5	2.9	4.8	96	-12.3	50	
67	2/17/2007 12:21	54.6	0.7	0.2	65	-9.8	100	
68								Well Closed
69	2/17/2007 12:07	56.4	0.5	0.4	116	-11.8	50	
70	2/17/2007 11:59	56.2	0.9	0.1	98	-7.5	50	
71	2/17/2007 11:51	56.8	0.6	0.8	95	-10.8	50	
72								Well Closed.
73	2/17/2007 11:55	56.6	0.7	0.7	84	-13.9	50	
74								Well Closed.
75								Well Closed-Water in Well
80								Not sampled. Values 80 to 89 closed.
81								Not sampled. Values 80 to 89 closed.
82								Not sampled. Values 80 to 89 closed.
83								Not sampled. Values 80 to 89 closed.
84								Not sampled. Values 80 to 89 closed.
85								Not sampled. Values 80 to 89 closed.
86								Not sampled. Values 80 to 89 closed.
87								Not sampled. Values 80 to 89 closed.
88								Not sampled. Values 80 to 89 closed.
89								Not sampled. Values 80 to 89 closed.
00000V1A	2/17/2007 12:43	52.2	1.9	7.8	0	-0.1		
00000V1B	2/17/2007 12:45	52.2	2.1	7.4	0	-15.8		
00000V2A								
00000V2B								
0000FLAR	2/17/2007 12:50	49.6	4.1	11.5	128	0.5		

Comments

Well ID's 80 through 89, V1A, V1B, V2A, V2B, FLAR are sample ports. No pressure, flow or temperature data available.

Shaded box indicates well not in acceptable range.

Acceptable Range : O_2 < 5% , Balance Gases (typically Nitrogen) > 20% , Well under vacuum (i.e. Static Pressure < 0) and Temperature < 131 oC

When wells are encountered with out-of-compliance parameters, changes can be made to the valve setting that may improve or eliminate the problem. If the gas composition indicates high levels of oxygen or nitrogen in the gas, the valve should be turned down. This would lower the flow at the well and lessen the amount of air that may be drawn into the system. If the static pressure at the well is positive, then the valve setting should be turned up, effectively increasing the flow at the well. The valve settings should be adjusted in small increments in order to decrease the possibility of improving gas composition while causing the pressure to become positive, or vice versa.

This task typically takes between two and three days to perform, depending on the number of valve setting adjustments. A site map displaying the locations of the landfill gas collection wells is included as Attachment K-1.

10.0 Storm Water Management

10.0 Storm Water Management

a. Introduction

The purpose of this Storm Water Management Plan (SWMP) is to describe the system, operation and maintenance of the Storm Water Management System (SWMS) for the Lena Road Landfill.

The Manatee County Lena Road Landfill is located in Bradenton Florida on approximately 1,200 acres owned by Manatee County. 316 acres are designated for landfill. The rest of the property is used for wetlands mitigation, buffer, administration facilities, storm water management and the Manatee County regional wastewater treatment plant.

The Lena Road Landfill is divided into three stages which are listed below with the acreage and status for each stage:

- Stage I – 131 acres – filled and inactive
- Stage II – 110 acres – empty and inactive
- Stage III – 75 acres – partly filled and active

Figure K-11 is a site map of the Lena Road Landfill Storm Water Management System. The map shows the landfill stages, storm water swales, storm water pond and outfall structures. The landfill waste areas have a storm water drainage system. The details for the drainage system on the Stage I, II and III Landfills are shown on the Fill Sequence Plan drawings

b. Storm Water Management System Overview

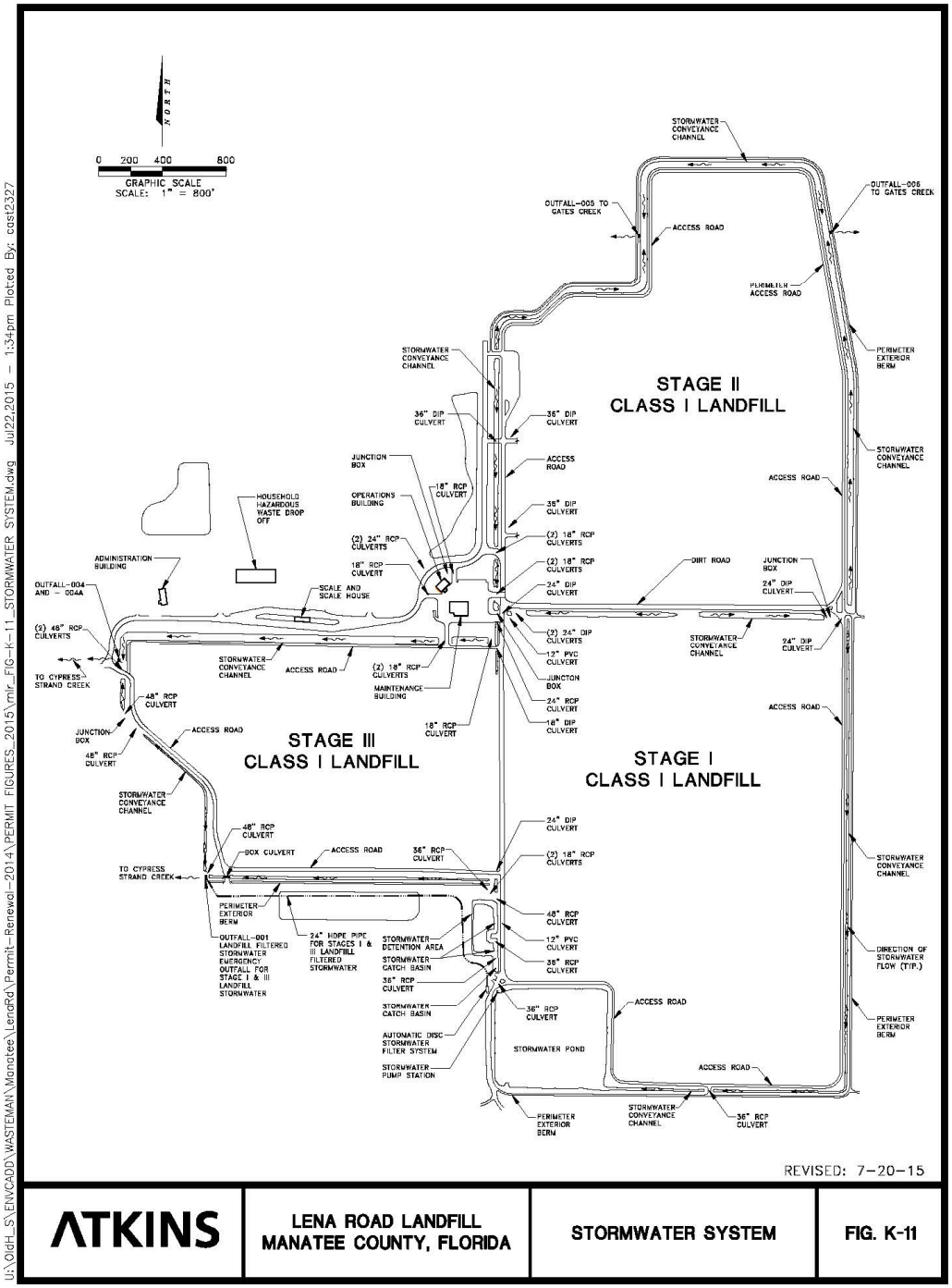
The purpose of the storm water management system is to collect clean storm water run-off from the landfill in terrace swales located on the landfill side slopes and convey the storm water to the detention areas for treatment and disposal to Cypress Strand Creek or Gates Creek. Any storm water that comes in contact with solid waste or is contaminated by leachate makes the storm water leachate, and requires discharge of the storm water to the leachate collection system for treatment at the wastewater treatment plant.

There are four permits that relate to storm water.

1. **Environmental Resource Standard General Permit #41-0224996 and #41-0177559**

Permit 41-0224996 was issued on February 25, 2005 and remains in the operational phase. There are 26 specific conditions. The most important specific conditions are:

20. For retention and dry detention ponds only: The retention and/or dry detention pond is intended to become dry within 72 hours after a rainfall event. A system that is regularly wet will be considered as not in compliance with this permit and possible modification to the system may be required.


NORTH
0 200 400 800
GRAPHIC SCALE
SCALE: 1" = 800'
STORMWATER CONVEYANCE CHANNEL
OUTFALL-005 TO GATES CREEK
OUTFALL-006 TO GATES CREEK
ACCESS ROAD
PERIMETER ACCESS ROAD
PERIMETER EXTERIOR BERM
STAGE II
CLASS I LANDFILL
36" DIP CULVERT
JUNCTION BOX
18" RCP CULVERT
OPERATIONS BUILDING
HOUSEHOLD HAZARDOUS WASTE DROP OFF
(2) 24" RCP CULVERTS
(2) 18" RCP CULVERTS
ADMINISTRATION BUILDING
OUTFALL-004 AND - 004A
SCALE AND SCALE HOUSE
DIRT ROAD
24" DIP CULVERT
(2) 48" RCP CULVERTS
TO CYPRESS STRAND CREEK
12" PVC CULVERT
MAINTENANCE BUILDING
48" RCP CULVERT
STAGE III
CLASS I LANDFILL
STAGE I
CLASS I LANDFILL
BOX CULVERT
36" RCP CULVERT
OUTFALL-001 LANDFILL FILTERED STORMWATER EMERGENCY OUTFALL FOR STAGE I & III LANDFILL STORMWATER
24" HDPE PIPE FOR STAGES I & III LANDFILL FILTERED STORMWATER
STORMWATER DETENTION AREA
STORMWATER CATCH BASIN
AUTOMATIC DISC STORMWATER FILTER SYSTEM
STORMWATER PUMP STATION
STORMWATER POND
DIRECTION OF STORMWATER FLOW (TYP.)
REVISED: 7-20-15
ATKINS
LENA ROAD LANDFILL
MANATEE COUNTY, FLORIDA
STORMWATER SYSTEM
FIG. K-11
U:\OldH_S\ENVCADD\WASTEMAN\Manatee\LenaRd\Permit-Renewal-2014\PERMIT FIGURES_2015\mir_FIG-K-11_STORMWATER SYSTEM.dwg Jul22,2015 - 1:34pm Plotted By: cast2327

24. The Operation and Maintenance Facility shall submit inspection reports in the form required by the Department, FDEP Form #62-343.900(6), Inspection Certification, for effluent filtration or exfiltration: 18 months after operation is authorized and every 18 months thereafter.

Permit 41-0177559 was recently modified to allow for construction of modifications to the Stage II area storm water management system. Upon completion of construction this permit will remain in the operational phase.

2. **NPDES Multi-Sector Generic Permit (MSGP)**

This permit was effective December 22, 2013 with an expiration date of December 21, 2018. The facility ID is FLR05F797-003. The requirements for this permit are included in the "Storm Water Pollution Prevention Plan for the Lena Road Landfill" which is periodically updated, with the most recent update dated January 21, 2015.

3. **Lena Road Class I Landfill Operation Permit** #39884-018-SO/01

This permit was issued January 5, 2011 with an expiration date of January 5, 2016. Specific Condition 9 of the permit describes the surface water sampling requirement.

Stage I System

The Stage I storm water perimeter swale was created by constructing two berms. The inner berm, called the landfill berm, is constructed around the area filled with solid waste, and the outer berm, called the storm water berm, was constructed around the inner berm to hold storm water runoff from the landfill in the swale until the storm water could be filtered and discharge to Cypress Strand. The storm water swale drains to an 8 acre, 40 acre-feet storm water detention pond. The pond is located at the southwest corner of the Stage I Landfill. Storm water enters the perimeter swale via direct rainfall, sheet flow down the outside slopes of the landfill, and from storm water discharge structures. Storm water collected in terrace swales on the landfill is diverted to inlets on the terrace swales which are connected to storm water pipes. The storm water pipes discharge storm water at the bottom of the landfill into the perimeter swale through the discharge structures. The Stage I system consists of a channel-wet pond detention system with in-line turbo disk sand effluent filtration system. The filter system was manufactured by Miller Leaman and consists of two skid units (Model 2SV) with 22 pods on each unit with a capacity of 500 gallons per minute, or 1000 gallons per minute total. The channel-wet pond detention system is designed to provide for the first one inch of runoff over the 154-acre contributing project area. The water quality treatment volume for Stage I is 558,875 cubic feet (12.83 ac-ft), and the system provides for 975,105 cubic feet (22.39 ac-ft). Two pumps located at the northwest corner of the pond provide the treatment volume for the wet pond in Stage I. The water quality treatment is provided between the lead pump (elevation 32.77 feet) and the all pumps off elevation of 30.77 feet. The pumps discharge through a 12" ductile iron pipe to parallel filtration system. The treated water leaves the filtration system through a 12" HDPE pipe to a junction manhole. A 24" HDPE pipe leaves the manhole and discharges via a mitered end

section in the southwest corner of Stage III, to the Outfall 001/Cypress Strand. Attenuation for the 100-year/24 hour storm event is provided by a weir housed in the pump station. When the water in the pond reaches elevation 34.3 feet, the water will discharge through the 24-inch HDPE pipe that is connected to the junction manhole.

Stage II System

The Stage II storm water management system is independent of Stages I and III. The system consists of a perimeter swale constructed with under drains and drop inlets for the discharge of storm water from the swale. Emergency Outfall Weirs 005 and 006 discharge storm water from the Stage II storm water swale to Gates Creek. The storm water swale was created by constructing two berms. The inner berm, called the landfill berm, is constructed around the area designated to be filled with solid waste, and the outer berm, called the storm water berm, was constructed around the inner berm to hold storm water runoff from the landfill in the swale until the storm water could be filter by the under drain and discharged to Gates Creek.

Because the Stage II Landfill is currently inactive and there is no solid waste, all runoff from the Stage II area is directed into the perimeter swale. The Stage II area is graded to allow runoff until the Stage II Landfill is filled with solid waste. If the storm water does not run off or evaporate fast enough, Manatee County pumps the storm water over the landfill berm into the storm water swale. Storm water entering the storm water swale due to direct rainfall, run off or from pumping accumulated storm water inside the Stage II landfill, is filter through the under drain system and discharged to Gates Creek.

When filling begins in the Stage II Landfill, the Phase areas waste disposal will be excavated prior to waste placement. All rainfall that falls within the excavated area will be contained and treated as leachate and pumped to the wastewater plant for treatment and disposal. As with the Stage I and III Landfills, as the fill increases in height, the outer slopes that are covered with intermediate soil cover will be drained to the perimeter storm water swale. Storm water that comes in contact with solid waste will be treated as leachate. Other areas of Stage II will be allowed to drain storm water runoff to the storm water management system. Details of the filling sequence and storm water drainage are shown on the Fill Sequence Plans included in Appendix B to the permit application package.

Stage III System

The Stage III system consists of a perimeter channel-pond dry detention with effluent filtration system, which will receive runoff from 74 acres of project area. The pond is designed to provide for the first one-half inch of runoff over the contributing area. The water quality treatment volume required for Stage III is 134,310 cubic feet (3.08 ac-ft) and the system provides for 146,573 cubic feet (3.36 ac-ft). The water quality treatment is provided between the pond bottom (elevation 31.0 feet) and the weir elevation of 32.4 feet. The water will drain through an under drain located in the northwest corner of Stage III and will recover in 72 hours. Attenuation for the 100-year, 24 hour storm event is provided by three outfall structures, D-001, D-004 and D-004A. D-001 consists of two identical modified FDOT Type “E” inlets. Two sides of the inlets have weirs set at elevation 32.4 feet and the front of the structure has a weir set at elevation 33.4 feet. The inlets discharge through two 42” RCPs to a double mitered end section at the southwest

corner of Stage III. Outfall D-004 consists of two FDOT Type "E" inlets in the northwest corner of Stage III and has the same weir set up as Outfall D-001. The inlets discharge through two 27" x 42" HERCP to Outfall D-004. Outfall D-004A is an existing inlet structure with the gate constructed at elevation 35.5. D-004A discharges through a 24" RCP to Outfall D-004. The existing storm water pond in the southeast corner of Stage III was excavated to elevation 31.0 feet. The top of bank was constructed to elevation 41.0 feet. The weir at the east end of the southern east-west ditch (southeast corner of Stage III) was modified and the top of the bank constructed to elevation 40.0 feet to disconnect Stage I and Stage III storm water. Forty-five linear feet of 54" inch RCP at the southwest corner of Stage III connects the north and west ditch to the south ditch.

c. Maintenance Plan

This maintenance plan applies to the storm water management system for the Stage I, II and III Landfills. The storm water management system consists of a series of swales, inlets and pipes that divert storm water from the non-working areas of the landfill to the storm water pond. The swales discharge into pipes and/or other swales, or directly into the storm water pond. Runoff from the detention pond ultimately discharges into the Cypress Strand Creek or the Gates Creek via the on-site wetlands.

Storm water perimeter ditches and the filter facility are inspected daily for sediment, wash outs, litter, vegetation and non-performance. In the event of a side-slope wash out, the slope is repaired within 3 working days. Litter fences are installed along the top bank of each swale around the active landfill to minimize litter. Excessive vegetation is removed from the swale system and storm water pond. Sediment is removed from the swale and hauled to the working face.

Storm water runoff from the areas that have at least a 6-inch compacted soil cover (free of waste) over the waste materials can be directed to flow into the storm water management system. Storm water runoff that has been in contact with waste materials is classified as leachate and cannot be diverted into the storm water management system. Storm water runoff from the upper portion of the landfill travels via sheet flow into collection terraces located along the side slopes of the landfill. Storm water runoff flows within the collection terraces and is conveyed, via storm water structures, and as shown on the Fill Sequence Drawings, down the landfill and into swales that are located along the perimeter of the landfill. The perimeter swales convey storm water runoff to a storm water management pond. Storm water runoff collected in the pond is allowed to percolate. As the water in the pond rises, it is pumped to the automatic disc filter system.

The following procedures have been implemented at the landfill to minimize maintenance requirements and to ensure efficient performance of the storm water system operation:

- No excavated cover material is stockpiled in such a manner as to direct sediment-laden runoff outside the project site property limits or into any adjacent storm water collection facility.

- All drainage ditches are inspected periodically for erosion and reshaped and re-sodded as required.

- Erosion and siltation control devices are cleaned and repaired when clogged or damaged.
- Temporary erosion control features such as silt fencing or hay bales are removed after installation of permanent erosion controls have been completed and any permanent erosion control features damaged by such removal are repaired.
- After vegetation has been established, all swales, channels, and detention ponds are mowed regularly; minimum-mowing frequency is once per year.
- The plant types in the littoral zone are checked periodically and any intruding vegetation is removed if required.
- Drainage sumps are cleaned out at least once per year and the storm sewer lines checked for plugging.
- The area in front of the control structure is checked at least quarterly to remove any excess plants or debris that could cause the structure to plug.

11.0 Equipment/Operation Features

a. Sufficient Equipment

The County has sufficient equipment to provide flexible landfill operations. Attachment K-3 provides a list of the current landfill heavy equipment for daily operations.

All landfill equipment that will be in operation on that day is serviced with special attention to any maintenance or minor repair needs. If the repair work required is more than minor in nature, it is sent to the landfill garage. The equipment is primarily serviced by Manatee County Fleet Services that operates a repair center at the Landfill Facility.

The following procedures are used in fueling equipment each day:

1. Check the following fluids to ensure they are at the manufacturer's recommended level:

    - pivot shaft oil
    - engine oil
    - hydraulic oil
    - fuel
    - transmission oil
    - radiator water
    - battery water level

2. Check and clean the following filters:

    - air cleaner
    - interior/exterior air conditioner filters

3. Pressure wash with water and/or air:

    - radiator core
    - transmission oil coolers
    - hydraulic oil coolers

4. Clean all air intake openings such as door panels, steps, hood, and air-breather intake.

5. Visually check for water, fuel and oil leaks in the final drive, radiator hoses, hydraulic hoses, fuel lines, injector pumps, fuel filters, etc.

6. Check tire inflation and/or track adjustment, chain tension and alignment on scrapers.

7. Grease all fittings at recommended intervals.

8. Complete the Daily Equipment Maintenance Report.

Fuel for the landfill equipment is pumped from a fuel tank, located as shown on Figure E-5. The tank is an above ground, double walled, steel tank with a total capacity of 20,000 gallons, and is split into two compartments. One 5,000-gallon compartment is for gasoline, and a 15,000-gallon compartment for diesel fuel. The tank is on a concrete slab, and protected by bollards. The tank is inspected weekly. Fuel and fluids (engine oil, transmission oil, hydraulic oil, or radiator fluid) are added to the equipment in the maintenance building as needed. If repairs on the equipment are necessary, the equipment is sent to the County's central maintenance shop, located off-site, or to the dealer's authorized maintenance facility.

b. Reserve Equipment

Attachment K-3 indicates the County possesses sufficient equipment to operate the landfill. In the event the dozer is out of service, the compactors can be used to spread refuse over the active face. In addition, the County can rent backup equipment from its approved Bid List or from County sources within 24 hours if necessary.

c. Communication Equipment

All equipment operators and traffic controllers are equipped with hand-held radios. This radio transmission service links the field personnel to the office and management. Telephones are available in the office, maintenance garage and Scalehouse.

d. Dust Control

Internal access roads are sprayed with water to control dust. Vegetation on filled areas assists in controlling dust from this area.

e. Fire Protection

Further details regarding the fire protection can be found in Section K.2.b.

f. Litter Control Devices

See Section K.7.i.

g. Signs

Signs are used around the site to direct traffic to the active face, white goods area, tire area, lead-acid battery drop-off, clean debris, yard waste, mulch site, speed limits, disposal rates and hours of operation, and prohibitions.

h. Shelter/Sanitation/First Aid Features

Shelter and sanitation facilities for the landfill staff are provided at the scale house and landfill office. First aid kits are provided in the cab of all heavy equipment vehicles.

First aid kits are located in the Landfill Administration Office and are maintained and inspected regularly. The kits will contain, at a minimum, the following:

sterile gauze pads	band aids (regular and non-stick)	eye wash
rolls of gauze bandage	adhesive tape	
bandage scissors	peroxide	
roll of sterile cotton gauze	safety pins	
tweezers	rubbing alcohol	
CPR mouth barrier	gloves	

In the case of accidental poisoning:

Step 1: Carefully remove poison from contact with person.

Eyes: Flush with lukewarm water, NOT HOT WATER, in a gentle stream for 10-15 minutes with eyelids open. Pour water from a container held 2-4 inches above the eye. **DO NOT RUB THE EYES.**

Skin: REMOVE any clothing that has come in contact with the poison. Flush poison off with large amounts of water poured from a container held 2-4 inches above the affected skin area for 10-15 minutes.

Mouth: REMOVE any poison from the mouth. Rinse the mouth out with water. If unable to rinse, gently rub out mouth with a clean cloth. Check mouth for any burns, cuts, unusual coloring, swelling or irritations.

Lungs: Get to fresh air as soon as possible. Loosen clothing if exposed to gases or fumes. Initiate mouth-to-mouth resuscitation if necessary.

Step 2: Give water when potential poisons have been swallowed. DO NOT give water if the person is unconscious, having convulsions or cannot swallow.

Step 3: **NEVER** make the person vomit **unless** the poison center or a physician directs you to do so.

Step 4: KEEP CALM. **DO NOT DELAY IN SEEKING HELP!**

12.0 All-Weather Access Roads

The main haul road in the landfill is paved. Vehicles leaving the main haul road en route to the working face travel across an interior road. The interior road base is constructed of construction and demolition (C&D) material and covered with a sand-shell mixture. The road is routinely maintained to provide waste hauler access to the work face. As discussed in K.2.b., during severe wet weather, small vehicles are directed to the wet weather disposal area for tipping.

13.0 Additional Record Keeping

Required landfill records are reported to the Department on a monthly, quarterly, semi-annually, annual, biennial basis. All records are maintained at the landfill for a minimum of ten years or for the design period as specified below. The design period is projected to end in the year 2071 (unless long-term care is decreased).

a. Permit Application Development

All reports used to develop permit applications and operation records will be maintained for the design period. Records such as geotechnical investigations, foundation analyses, demonstration reports, and previous permits and regulations are examples of records to be maintained.

b. Monitoring Records

All water quality, gas, and leachate monitoring records are required to be maintained for at least ten years.

In accordance with various Environmental Protection Agency (EPA), Southwest Florida Water Management District (SWFWMD), and the Florida Department of Environmental Protection (FDEP) rules, regulations and permits, the Landfill must conduct various field monitoring /maintenance activities and submit reports on a scheduled basis. The following information is intended as an overview of required activities and reports and is also addressed in individual sub-sections regarding the activity or program.

<u>Groundwater</u>

The County contracted laboratory inspects and samples 18 groundwater monitoring wells (GW-1 trough GW-18) for the Stage I and III Landfills. The results are submitted semi-annually to the Department. The wells consist of seventeen monitoring wells and one background monitoring well. When the Stage II Landfill becomes active, the County's contracted laboratory will inspect and sample eleven additional monitoring wells (GW-18 through GW-28). The County will continue to inspect and sample GW-1 and GW-2, which are in the foot print of the Stage II Landfill until the wells are abandoned.

A review of the analyses, comparisons of the data, and comments on any substantial differences in parameters is to be submitted to the FDEP every two and one-half years or as required in the permit.

<u>Leachate</u>

Flow meters which record leachate directed to the Southeast Waste Water Treatment Plant are inspected daily. The leachate quantity is reported monthly.

Department of Environmental Protection Reports
Prepare monthly groundwater report.
Prepare annual compaction and fill volumes.
Prepare groundwater report semi-annually.
Prepare leachate analysis report annual.
Prepare monthly water balance reports.
Prepare monthly report on the landfill gas readings taken at each landfill gas wellhead and flare
Prepare quarterly report of the landfill gas readings at gas monitoring probes and ambient points
Prepare quarterly report of the landfill gas surface emissions monitoring

c. Annual Estimate of the Remaining Life of Constructed Landfill

Manatee County will annually estimate the remaining solid waste disposal capacity in cubic yards and the remaining landfill life in years. The estimate will be based on the geometry of the filled landfill, final contours, scale house records for waste received and the filling rate of the landfill. The estimate will be submitted annually to FDEP by the date specified in the permit.

d. Archiving and Retrieving Records

All records pertaining to the operation of the facility will be retained throughout the design life of the landfill. All monitoring records, calibration and maintenance records and reports required by the landfill operation permit will be retained for at least ten years.

14.0 Special Waste Handling

a. Motor Vehicles

Motor vehicles are not presently accepted for disposal or temporary storage at the Lena Road Landfill.

b. Shredded Waste

Shredded municipal waste is not accepted for disposal at the Lend Road Landfill. Shredded tires may be accepted if not recycled.

c. Asbestos

Asbestos containing materials from sources covered under the National Emission Standards for Asbestos, 40 CFR Part 61, Subpart M are accepted at the Lena Road Landfill, with prior approval of the County. These materials will be placed in the landfill by appointment only, covered with a minimum of one foot of non-asbestos containing material, and the location will be recorded in accordance with 40 CFR Part 61.154. A record of the location of asbestos-containing waste will be maintained.

d. Contaminated Soil

Soils contaminated with non-hazardous waste and petroleum-contaminated soil, which has been treated pursuant to Chapter 62-713, F.A.C., will be accepted at the discretion of the County.

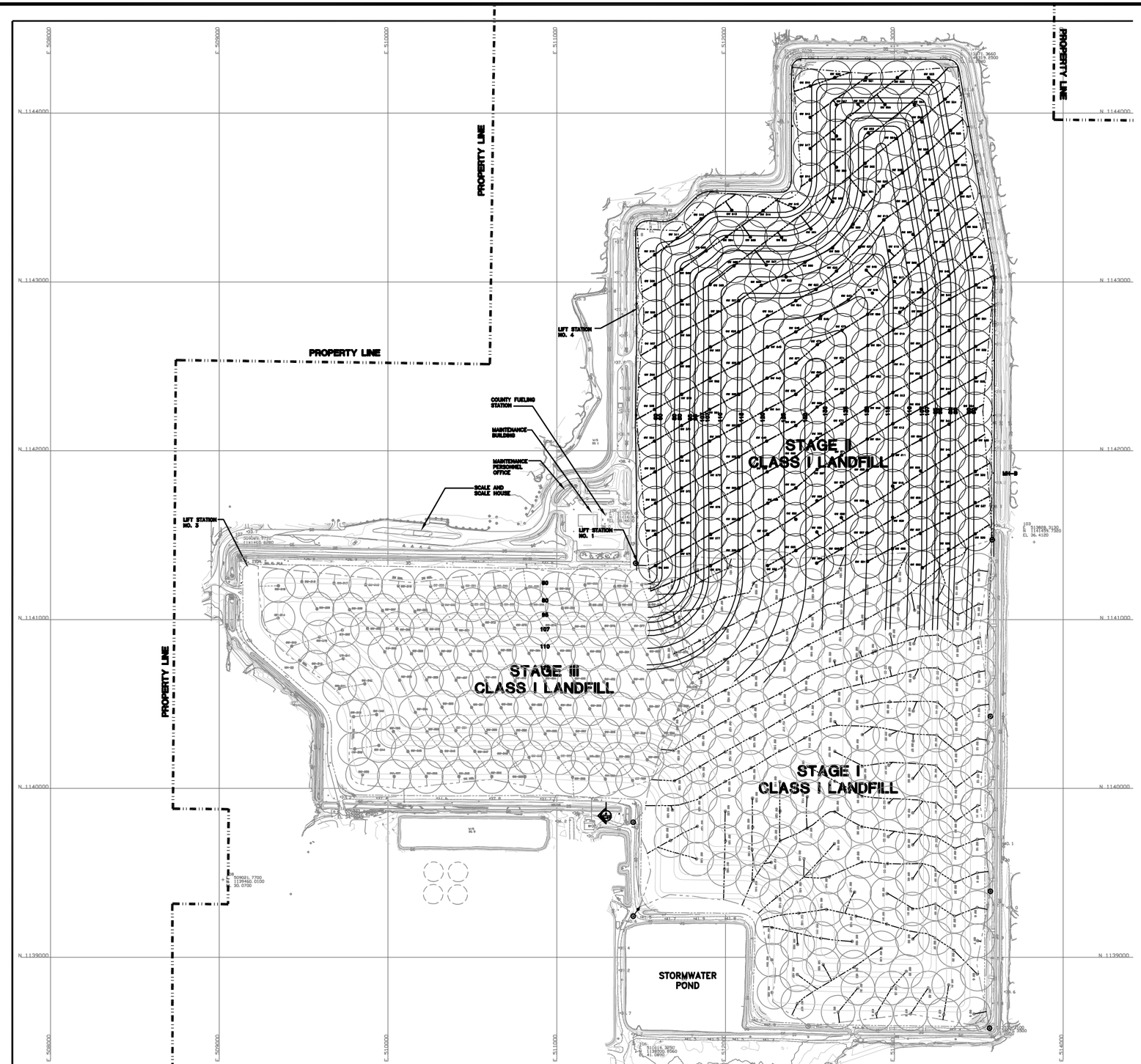
e. Biological Waste

Biological waste is not accepted.

f. Oily Waste

Materials as defined in Chapter 62-701.300 (11)(b), F.A.C., may be accepted for disposal at the discretion of the County.

ATTACHMENT K-1



NORTH

0 100 200 400

GRAPHIC SCALE
SCALE: 1" = 200'

LEGEND:

- 18" HDPE HEADER GAS PIPE
- 8" GAS LATERAL PIPE
- EXISTING 18" HPDE HEADER GAS PIPE
- EXISTING 8" HDPE LATERAL GAS PIPE
- GW 530 PROPOSED WELL HEAD
- GAS WELL RADIUS OF INFLUENCE
- GW 530 EXISTING WELL HEAD
- EXISTING GAS WELL RADIUS OF INFLUENCE

NOTE:

AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

REVISION: JULY 10, 2015

ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

GAS COLLECTION SYSTEM

FIGURE
K-1-1

ATTACHMENT K-2

Attachment K-2

Household Hazardous Waste Collection And Storage Facility

Lena Road Landfill
3333 Lena Road
Bradenton, FL 34202

Revised May 10, 2010

Prepared by:

Manatee County Government
Utilities Department
Solid Waste Division
3333 Lena Road
Bradenton, FL 34211

Revised June 10, 2011

Contents

Figures

1.0 Definitions

Conditionally Exempt Small Quantity Generators (CESQG): (40 CFR 261.5) A generator who produces no more than 100 kg (220 lbs) of hazardous waste or no more than 1 kg of acutely hazardous waste per month.

Contingency Plan: A document setting out an organized, planned, and coordinated course of action.

Hazardous Material: A substance or material including a hazardous substance, which has been determined by the Secretary of Transportation capable of posing an unreasonable risk to health, safety, and property during transportation.

Household Hazardous Waste Collection and Storage Facility: A facility established by the Manatee County Board of County Commissioners to provide hazardous waste disposal services to households.

Household: Single and multiple dwellings and other residential sources within Manatee County.

Personal Protective Equipment: Equipment used to protect individuals from chemical, physical and biological hazards.

Training: Instruction in the use of equipment, personal protective equipment, site safety and handling.

2.0 History

The Manatee County Household Hazardous Waste Collection and Storage Facility opened in May 1993 within the Stage III Landfill. This facility was removed as solid waste filled the Stage III Landfill.

The recently completed Administration Facilities includes a household hazardous waste collection and storage facility. The facility floor plan is shown on Figure K-2-1, and a cross section is shown on Figure K-2-2. The building includes forced air ventilation, dry chemical fire suppression system, and storage for hazardous waste. The building is engineered to comply with EPA, NAPA, and OSHA standards and regulations for storing hazardous chemicals and wastes. The building is also corrosion resistant and features secondary containment for the prevention of spills or leaks. The facility has a concrete slab and is under a roof as shown on the figures. The materials processed and the method of processing remains essentially the same at the new facility.

3.0 Facility Program

The Manatee County Household Hazardous Waste Collection Facility (HHW Facility) is located at 3333 Lena Road, Bradenton, Florida. The Facility has a secured storage building specifically designed for the storage of hazardous materials and/or wastes. The major components of the HHW Facility are as follows:

- Security System: The entire site is fenced with a six (6) foot high chain link fence topped with a triple strand of barbed wire. Four gates provide ingress and egress to the facility. When not in use, the facility is locked and secured. A double security exists in that the main access road into the County Landfill has a gate and is secured when the Landfill is not in operation.

- Containment and Storage System: The storage building is specifically designed for hazardous materials featuring secondary containment in the event of a spill. The building is equipped with forced air ventilation and dry chemical fire suppression systems**.** The building has separate storage bays. A heavy-duty locked aluminum storage cabinet anchored to a concrete slab serves as the ammunition locker and does not have a dry chemical fire suppression system.

- The hazardous materials storage is under roof along with covered containment areas for storage of fluorescent bulb closed storage rack, and the waste oil tank. The containment areas are submerged and surrounded by cement reinforced containment walls.

- The storage buildings sit flush with an impervious, slightly sloped, reinforced containment area. The Facility is located inside the confines of the Manatee County Solid Waste Management Landfill Facility.

The facility is open to Manatee County residents on the third Saturday of each month from 9:00 a.m. to 3:00 p.m. Wastes that are classed as medical or radioactive are not accepted. There is not a disposal weight limit during the collections and disposal is provided free of charge to County residents. The cost of the program is funded by landfill disposal tipping fees.

A semi-annual event is held at several sites throughout Manatee County in the spring and fall of the year. Siting Locations of the event are at the HHW Lena Road Landfill Facility and at the Utilities Department Complex, 4501 4410 66th Street West, Bradenton, Florida, Palmetto Fairgrounds, 1303 17th St. W. Palmetto, Florida and various other County locations. All businesses participating in the collection program are referred directly to the County's contracted hazardous waste disposal vendor, who is on site, for collection and payment arrangements. Milk run collection information is provided to the commercial generator categories under the same rate schedule as that of Manatee County.

Monthly collections/events are operated by the certified Household Hazardous Waste Technician in the new Hazardous Waste Facility located at the Landfill. The Hazardous Waste contractor is on site at the collection to assist with unloading. The contractor bulks and lab packs any of the waste material received during the collection. Partial containers are stored in the Hazardous Waste storage building until the following monthly collection. The Hazardous Waste Technician reviews all paperwork and has the responsibility of approving and signing outgoing manifests.

Materials are accepted from County residents during non-operating hours by appointment or as determined by the HHW technician and/or manager special waste. In addition, collection services at the residence are available for those persons who are unable to attend the event due to circumstance of health, physically disabled or age.

Manatee County has a permanent Household Hazardous Waste program for the collection of materials at the facility. Monthly collections are conducted for the residential citizens and annual or semi-annual events for the CESQGs. These events are advertised in the County's utility billing and the local newspapers. General Household Hazardous Waste program information is available on the County's website at www.mymanatee.org/hhw.

4.0 Containment

4.1 Containment

- Antifreeze and aerosol cans are stored in drums along with partial drums of paint adjacent to the outside containment areas on concrete slabs covered with plastic sheeting prior to removal by the contracted vendor.

- Other wastes such as small flammables and pesticides are contained in the storage building. Paint is stored in a lined 40 yard roll off container. Crates are located on a concrete slab that is covered with and lined with plastic sheeting prior to bulking into drums. The full drums are removed the same day as paint bulking is done by the contractor.

- Storm water shall be prevented from accumulating within in-service containment structures.

5.0 Waste Acceptance Criteria

5.1 Household Waste

Household waste is accepted only during the monthly collection events *unless* circumstances of the generator prohibit such a collection time. The waste must fall within the categories permitted by the contracted collection/disposal vendor and not be of a radioactive, bio-hazardous or medical nature. A residential disposer must also have generated the waste.

5.2 CESQG Waste

CESQG waste is collected at our annual or semi-annual events by arrangement directly between the contracted collection/disposal vendor and the generator.

6.0 Personnel

6.1 Training

Facility personnel must successfully complete a 40-hour OSHA training program that teaches performance of duties in a way that ensures the facility is operated in a manner that protects them and the public from potential health and safety hazards at the site and is protective of the environment.

The instructor providing the training includes appropriate aspects of hazardous waste/material management including selection of protective clothing and equipment and emergency response. At a minimum, the training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

- Contact List for departments to respond to fire and/or explosions, discharges to the land surface; incidents
- Shutdown of operations

Facility personnel shall take part in annual eight (8) hour refresher training.

Facility personnel has on staff at least one person who has no less than 40 hours training in appropriate aspects of hazardous waste/material management whenever waste is being received and whenever any hazardous material is being bulked or otherwise treated.

7.0 Records

The following documents and records shall be maintained at the Facility offices:

- A record of all personnel engaged in work, either full-time or temporary.
- Facility personnel who have completed a record of training.

8.0 Personnel Training Requirements

All County personnel participating in the HHW collection programs shall be trained to the appropriate level for their participation. All trained County personnel are specifically trained as Hazardous Waste Collection Staff. The HHW technician is responsible for enforcing all safety policies. The following guidelines outline the training requirements to be completed by personnel so they may safely work with hazardous materials during the collection programs. This training will, therefore, reduce the potential for hazardous material-related accidents.

8.1 Unloaders/Paint Sorters

Training for this level is limited to on-the-job instruction. Personnel trained will have minimal contact with the waste, but will work under the direction of the certified Household Hazardous Waste Technician. After initial screening of the waste, personnel will unload the waste from the vehicles into carts. They place paint in the appropriate area for future bulking. One gallon and 5 gallon buckets are stacked in a lined 40 yard roll off container. Quarts and pints are placed into plastic lined crates.

8.2 Facility Staff

Training for this level of participation includes both classroom instruction and on-the-job training. Staff assists with opening and closing the Facility, screening incoming materials, and assisting with spills, releases, or any other emergency. Specific training includes, but is not limited to:

HAZWOPER Operational Level (29 CFR 1910.120)
On-the-job training in accepting, identifying, segregating, and sorting waste
Hazardous waste rules and regulations

8.3 Hazardous Waste Operations and Emergency Response, 29 CFR.1910.120

The objective of this training is to provide personnel with the knowledge and skills necessary to safely and successfully respond to any on-site spills and/or releases. A five level classification system is used to provide appropriate training to indicate the scope of their authorized response activities:

First Responder Awareness Level
First Responder Operations Level
Hazardous Materials Technician

Personnel trained in accordance with this Section shall receive annual refresher training of sufficient content and duration to maintain their competency.

9.0 Personal Protection Equipment Procedures

Personal Protective Equipment (PPE) is used to limit exposure to various hazardous materials and wastes at the Hazardous Waste Collection and Storage Facility. PPE is necessary when handling hazardous materials to prevent skin contact with harmful substances. Whenever removing and/or working with hazardous materials or waste, personnel are required to wear, at a minimum, the following protective equipment.

9.1 Unloaders/Paint Sorters

- Safety glasses
- Protective gloves
- Protective apron (optional)

9.2 Facility Staff

- Safety glasses
- Protective gloves
- Respirator with organic vapor cartridge on high efficiency particulate air filter
- (HEPA), if necessary, as determined by the waste material being handled.
- Steel-toed boot or safety shoes
- Protective apron

In the event of a spill or release of a hazardous material or waste, the following protective equipment is on site:

- Full-faced air purifying respirators

When specialized training is required to properly utilize personal protective equipment, this training must be provided to the employee prior to its use.

10.0 Spill/Release Procedures

The Facility Site Supervisor and/or Assistant shall be properly trained in hazardous material emergency response to efficiently mitigate, contain, and clean up any accidental spill/release that might occur at the Facility. At all times, the safety of personnel and program participants are the primary concern.

The following will be considered emergencies at the Facility:

- Fire or smoke is noticed
- An explosion occurs
- A leak or spill is discovered
- Medical emergencies, including heat induced injuries
- Discovery of explosive devices

When a spill/release or any other emergency occurs, the following guidelines will be followed:

- Cease operations/perform initial size up
- Make mental note of nature, extent, source, and amount of any released product
- Evaluate potential harm to human health and the environment
- Scene control. Keep all unauthorized persons away from the scene
- Protect individuals directing them, if not contaminated, away from the scene
- If flammable materials are involved, check for all ignition sources
- Take measures to contain release or fire from spreading to other hazardous areas as quickly as possible
- Notify 911 if warranted
- Notify Facility Manager/Director of the Solid Waste Management Facility, if necessary
- Notify State Warning Point if reportable quantity
- Perform basic first aid to stabilize any victims until EMS arrives
- Clean up any spills using compatible materials
- Place waste in proper container for disposal through the County's Hazardous Waste Transporter

Under no circumstances will the health and safety of County staff be placed in harm's way in the attempt to handle suspected explosives. If explosives are discovered, evacuate the immediate area, cease traffic flow, and notify the Manatee County Sheriff's Department Haz-Mat Team.

If a reportable quantity of a hazardous material has been spilled or released, a follow-up written report must follow within fifteen working days and be filed with the State Emergency Response Center.

An eyewash station and shower is permanently installed on site. In the event of materials being splashed into staff's eyes, minimum eyewash of fifteen minutes shall take place.

11.0 Equipment

Following is a partial list of the equipment on site:

Forklift with drum grabber	
Fire extinguishers	Assorted tools
Funnels	Utility carts
Shovels and brooms	55-gallon drums
3 and 5 gallon buckets	Traffic cones
Absorbent	Assorted tape
Neutralizing agents	Two-way radio communication
Eyewash station and shower	

12.0 Safety

Safety is the primary concern of all personnel participating at the HHW Facility. Appropriate staff is instructed in how to handle emergencies as well as site safety. The collection program is maintained in a neat and organized manner at all times. Good housekeeping practices are followed. The unloading area will be kept clean and free of excess materials. It is the responsibility of all Facility staff to follow these guidelines. No smoking signs are posted. Smoking is prohibited at the Facility.

Facility staff will assist participants by unloading vehicles, answering questions about proper disposal methods and handing out informational literature as necessary. Only hazardous waste generated by residential customers will be accepted during the HHW disposal programs. In the event a participant arrives to dispose of waste generated from a business, the CESQG hazardous waste disposal program will be explained and contractor contact information provided.

Following are guidelines to follow in processing the participants' waste.

12.1 Safety Procedures

Facility staff will, at all times, act in a safe manner. Work practices are carried out to minimize or eliminate the possibility of an injury-related accident. Proper ergonomics are followed. All personnel use correct lifting techniques in order to prevent injury to the body. Containers are removed from vehicles one at a time into the utility carts.

Appropriate Personal Protective Equipment (PPE) is worn when handling hazardous waste. Close attention is given to staff during the summer months to reduce the risk of heat related injuries. All Facility staff monitor themselves for any signs or symptoms of heat stress and act accordingly.

12.2 Removal from Vehicles

Traffic is directed from the scale house and/or by signs on the entrance road of the Landfill to the HHW Facility site. Signs to a stopping point direct all incoming cars where participants will be greeted by trained County staff. An initial spotting of the chemicals is performed before removal of chemicals from the vehicle. The participants are questioned on the contents of any unknown materials or unmarked containers. If any unacceptable or unknowns are spotted, personnel will immediately notify the Facility Site Supervisor or Assistant.

The waste from the vehicles will then be unloaded into carts by the Facility staff. Participants remain in or at their vehicles. This reduces the risks of spills or injuries. Facility staff evaluates the contents as they unload. If any leaking containers are spotted, the container will be placed into an additional container. The participant will be informed of the leak. It is not the responsibility of contractor or facility staff to clean up the leak or spill in the participant's vehicle beyond the initial containment.

13.0 Waste Segregation

County and contractor personnel transport the waste from the vehicles to the preliminary sorting areas. Cardboard boxes are flattened then placed in a dumpster designated for cardboard recycling. Any packaging, similar debris, and/or household trash will be removed and placed in the dumpsters designated for trash. The HHW technician and contractors examine all materials received. The waste is then sorted, bulked and lab packed into the appropriate shipping containers for removal. Usually used motor oil, pesticides, paints, and flammables represent the majority of the waste received.

13.1 Locker Storage

Each chemical storage unit is clearly labeled with DOT placards.

Wastes are stored according to their primary hazard. The basic categories of wastes are as follows:

- Flammables
- Pesticides
- Poisons
- Corrosives

The HHW technician shall have the final decision on what wastes to accept or not accept, classification, and any other decision regarding the waste.

13.2 Waste Bulking

Only the HHW technician and/or manager special waste determines which wastes should be bulked. All labels are read before bulking any wastes together to ensure compatibility. Safety is the major factor in bulking. No bulking shall take place in inclement weather.

Containers of compatible waste are opened and drained directly into fifty-five gallon drums. When the drum is full or bulking is discontinued for the work period, the lid shall be securely replaced. A small space for vapor expansion shall be left at the drumhead space.

Drums are required to have the proper markings adhered to them. The markings are placed so that they are clearly visible. The HHW marking contains the following information:

- The material contents
- The accumulation start date

The proper marking procedure is applied at the beginning of the bulking procedure.

Bulking of any material takes place when needed. Items to be bulked may include the following:

- Latex based paints
- Oil based paints
- Antifreeze
- Motor oil and transmission fluid

The wastes are compatible for bulking, and are only bulked if clearly identified by sight, smell, container, label and source. Any wastes that are not clearly identifiable are not bulked, and the unknown wastes are sent with contractor.

Paint is bulked into a 55-gallon steel drum when needed, and generally removed the same day or within 24-hours. If paint is spilled, it is contained on the plastic sheet by absorbent pads or absorbent. All paint is currently collected and placed in containers which are stored on Visqueen. All paint is sent to a paint company to be recycled at this time.

Antifreeze is bulked into a 55-gallon drum. If antifreeze is spilled it is contained on the plastic sheet by absorbent pads or absorbent.

Motor oil and transmission fluid is being poured into a 20 gallon tank then pumped (or poured using a funnel) into a 500-gallon storage tank or in 375 or 275 gallon portable tanks. The bulking is done outside, under a main roof of the Hazardous Waste Facility.

13.3 Unknowns

Unknowns are accepted. These items are materials that cannot be identified by either original labels or by participant knowledge. The following procedures are adhered to:

- Unknowns will be sent out with the contractor.
- Place material into appropriate storage building according to suspected hazards.

13.4 Electronic Waste

Electronic waste such as TVs, computer monitors, microwave ovens, telephones, keyboards, VCRs, radios, etc. are received at the Household Hazardous Waste Collection. The contractor is on site during the collection event and materials are sorted, palletized, shrink wrapped or put in Gaylord boxes then removed the day of the collection. If there are more pallets than will fit in the contractor's trucks, the pallets of materials and/or roll-off box are stored under the roof of the Household Hazardous Waste Facility until the contractor comes to pick them up. The contracted e-scrap recycler removes the e-scrap for processing and recycling. Broken glass and components from broken units is swept up and properly disposed.

Electronic waste is also collected curbside by the contracted waste haulers. The hauler brings the materials to the landfill to be stored in the designated area which is the SW corner of the white goods/scrap metal concrete pad. Additionally, residents may drop off electronic waste Monday through Saturday during landfill hours. This material is stored in the SW corner of the white goods/scrap metal area also. Materials are removed by a private recycling contractor for proper recycling.

14.0 Contingency Plan and Emergency Procedures

The following procedures serve as the Facility's guideline for Contingency Plan. Specific information may be located in the Manatee County Household Hazardous Waste Collection and Storage Facility Contingency Plan.

14.1 Purpose and Implementation of Contingency Plan

The contingency plan should be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

The provision of the plan should be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

14.2 Content of Contingency Plan

The contingency plan describes the actions facility personnel should take to protect the public from potential health and safety hazards in response to fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

The plan lists names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (as described later). This list should be kept up to date. Where more than one person is listed, one should be named as primary emergency coordinator and others should be listed in the order in which they will assume responsibility as alternates.

The plan includes a list of all emergency equipment at the facility (i.e., fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list should be kept up to date. In addition, the plan should include the location and physical description of each item on the list, and a brief outline of its capabilities.

The plan should include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan should describe signal(s) to begin evacuation, evacuation routes, and alternate evacuation routes in cases where the primary routes could be blocked by releases of hazardous waste or fires.

14.3 Copies of Contingency Plan

A copy of the contingency plan and all revisions to the plan should be maintained at the facility, submitted to local police and fire departments, hospitals, and State and local emergency response teams that would be called up to provide emergency services.

14.4 Changes of Contingency Plan

The contingency plan should be reviewed, and immediately changed if necessary, whenever:

- The plan fails in an emergency
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or release of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.
- The list of emergency coordinators or emergency equipment changes

14.5 Emergency Coordinator

At all times, there should be at least one employee either on the facility premises, or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator should be thoroughly familiar with all aspects of the facility□s contingency plan, all operations and activities at the facility, the locations and characteristics of waste handled the location of all records within the facility, and the facility layout. In addition, this person should have the authority to commit the resources needed to carry out the contingency plan.

The emergency coordinator's responsibilities vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of coordinator is responsible for.

14.6 Emergency Procedures

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his/her designee when the emergency coordinator is on call) should immediately:

- Activate internal facility alarms or communication systems, where applicable, to notify all facility alarms or communication systems.
- Notify appropriate State or local agencies with designated response roles if their help is needed.

14.0 Contingency Plan and Emergency Procedures

Whenever there is a release, fire, or explosion, the emergency coordinator should immediately identify the character, exact source, amount, and the extent of any released materials. He or she may do this by observation or review of facility records, or if necessary, by chemical analysis.

Concurrently, the emergency coordinator should assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment should consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire, or heat-induced explosions).

If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he/she should report his findings as noted below:

- If the assessment indicates that evacuation of local areas may be advisable, the proper authorities should be immediately notified. The emergency coordinator should be available to help appropriate officials decide whether local areas should be evacuated.
- The government official designated as the on-scene coordinator for the area or the State should be notified immediately. The report should include:

    - Name and telephone number of reporter
    - Name and address of the facility
    - Time and type of incident (e.g., release, fire, explosion)
    - Name and quantity of material(s) involved, to the extent known
    - The possible hazards to human health, or the environment outside the facility.

During the emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other areas of the facility. These measures should include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

During an emergency, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in containers and/or equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator should provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material contaminated by a release, fire, or explosion at the facility.

15.0 Operations

15.1 Maintenance and Operation of Facility

The facility shall be maintained and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.

All facility communications, alarm system and spill control equipment, where required, shall be tested and maintained in accordance with manufacturer's recommendations and as necessary to assure its proper operation in time of emergency.

Facility personnel shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spills control equipment, and decontamination equipment to any area of facility operation in an emergency.

Whenever hazardous waste facility is staffed, all personnel involved in the operation shall have immediate access to an emergency communication device, either directly or through visual or voice contact with another employee.

Normal operational procedures require one member of personnel on site. This member shall, while in the facility, have immediate access to a two-way radio capable of summoning external emergency assistance. Telephones and/or radios shall not be placed in areas where the atmosphere may be come explosive due to the presence of flammable vapors, dusts, or gases.

15.2 Accumulation Time

The Household Hazardous Waste Facility will be accumulating hazardous waste on site, and shall store the material as follows:

- The waste will be placed in containers. A container is a storage building or a DOT shippable drum.
- The amount of waste accumulated will not place the facility in violation of any regulations required on a Federal, State, or Local level.
- While being accumulated on-site, each container is labeled with a description of the contents and date.

The household hazardous waste collected for treatment or disposal shall not be accumulated on site for more than 210 days. Once the capacity limit is reached, all hazardous waste collected shall be shipped to a permitted hazardous waste facility for treatment or disposal. The operator may request FDEP approval of a longer accumulation time period for specific wastes that are accumulated slowly.

15.3 Management of Containers

If a container is not in good condition or if it begins to leak, the operator shall pack the container and its contents in a larger container, seal the container and place it in the proper storage building bay.

The operator shall use containers made of or lined with materials that will not react with, and are otherwise compatible with the waste to be stored, so that the ability of the container to contain the waste is not impaired.

A container shall always be closed during storage except when it is necessary to add or remove waste. Also a container holding waste should not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

The operator shall inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.

15.4 Special Requirements for Ignitable or Reactive Waste

Containers holding ignitable or reactive waste shall be located within the transfer/containment slab or within the proper hazardous waste storage building bay. An overhead fire suppression system is located in the storage buildings.

The operator shall take precautions to prevent accidental ignition of ignitable waste. This waste shall be separated and protected from sources of ignition including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. The facility is a posted no smoking area.

Reactive wastes shall receive special handling as described in this section, and storage as needed to prevent unintentional reactions.

15.5 Handling Requirements for Ignitable, Reactive, or Incompatible Wastes

Repackaging or treatment, including bulking or neutralizing of ignitable, reactive, or incompatible waste is not done at this facility. A contracted transport/disposal vendor removes hazardous waste stored in the storage building.

15.6 Material Redistribution Guidelines

In the event Manatee County decides to establish a Material Redistribution Program in the future, the following shall serve as the *basic* program guideline for facility personnel.

15.6.1 Selection of Materials for Redistribution to the Public

Materials selected for exchange programs should include but not be limited to meet the following minimum criteria:

- Original containers only
- Original label with ingredients, instructions, and warnings must be present and readable
- Contents should be visually inspected and should look like correct material in new condition
- Containers should be at least three-quarters full

The following items will be excluded from redistribution programs:

- ammunition
- pesticides
- Reactive materials
- Cancelled or banned products
- Poisons

Each item selected for the redistribution program should be approved by the facility manager or his/her designee.

15.6.2 Storage

Materials designated for redistribution should be stored in a separate area of the facility. This area will be clearly marked and secured from unauthorized access.

At a minimum, secondary containment sufficient to contain the entire contents of the largest two containers in storage should be provided.

15.6.3 Customers

All customers should be at least 18 years of age and shall be allowed to shop only in the designated area.

15.6.4 Documentation

The redistribution program will develop and use a waiver/inventory form, pre-approved in format by the County Attorney's Office that includes the following elements:

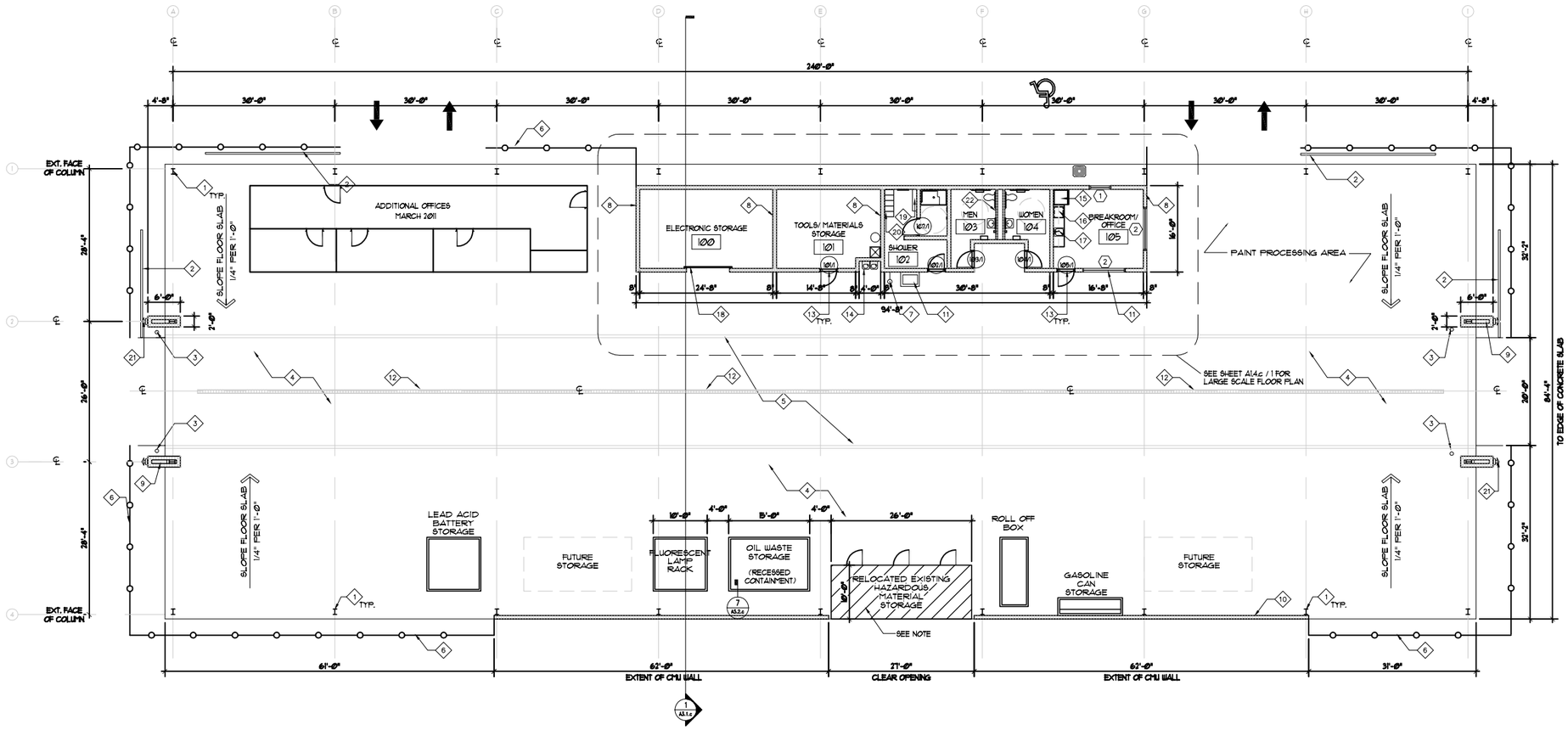
- Customer's printed name and signature
- Date
- Name and quantity of each material received
- Liability statement ("hold harmless" statement)

The form shall be kept on file in the offices of the facility manager or his/her designee.

16.0 Preparedness and Prevention

16.1 Arrangements with Local Authorities

The Facility Manager has arrangements with the fire department and emergency response teams for assistance in an emergency. The Facility Manager has familiarized these agencies with the potential need for services, layout of the facility, properties of the facility, types and properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes.



FLOOR PLAN
SCALE: 3/32" = 1'-0"
20,493 SQ. FT.

DRAWING NOTES

1. COLUMNS FOR METAL BUILDING STRUCTURE (TYP.)
2. 25'-0" WIDE ROLLING GATE WITH OVERHEAD TRACK (TYP.)
3. 8" PIPE BOLLARDS
4. CONCRETE SLAB
5. PAINTED STRIPES ON CONCRETE SLAB
6. 8'-0" HIGH CHAIN LINK FENCE
7. EMERGENCY SHOWER / EYE WASH COMBINATION
8. 8" CMU WALLS
9. 2'-0" x 6'-0" CONC. PILASTERS (SEE ELEVATION SHEET A2.1.c)
10. 8" CMU - SCREEN WALL
11. UTILITY TUB/SINK
12. TRENCH DRAIN
13. THRESHOLDS
14. HI-LO ELECTRIC WATER COOLERS
15. REFRIGERATOR (N.I.C.)
16. MICROWAVE (N.I.C.)
17. SINK
18. OVERHEAD DOOR
19. BENCH
20. LOCKERS
21. WALL SCONCES (TYP.)
22. 4" CMU WALLS - INTERIOR WALLS

NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER THE RELOCATION OF AN EXISTING HAZARDOUS MATERIAL STORAGE (PREFABRICATED BUILDING). THE EXISTING HAZARDOUS MATERIAL STORAGE SHALL BE PLACED IN ITS NEW LOCATION PRIOR TO INSTALLATION OF METAL BUILDING ROOF AND/OR STRUCTURAL MEMBERS THAT MAY INTERFERE WITH THE PLACEMENT OF THE STORAGE BUILDING.

LEGEND

- CMU WALLS
- INT. FRAME WALLS, NON-RATED
- DRAWING NOTES - SEE THIS SHEET
- DOOR KEY - SEE DOOR SCHEDULE, SHEET A6.1.c
- WINDOW KEY - SEE WINDOW SCHEDULE, SHEET A6.1.c
- ROOM TAG - SEE FINISH SCHEDULE, SHEET A6.1.c
- DETAIL KEY - SEE SHEET A5 INDICATED
- WALL TYPES - SEE SHEET A5.1.c

NORTH

REVISION: JULY 10, 2015

ATKINS

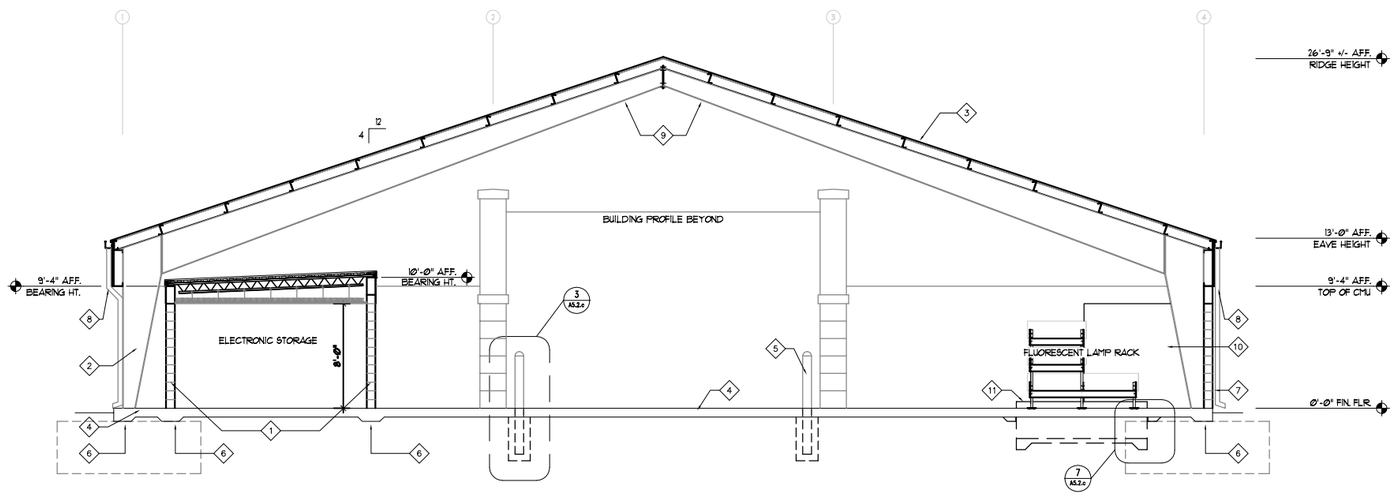
MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

HOUSEHOLD HAZARDOUS WASTE COLLECTION
AND STORAGE FACILITY OPERATION PLAN
FLOOR PLAN

FIGURE
K-2-1

DRAWING NOTES

1. 8" CMU WALLS
2. TYPICAL RIGID FRAME WITH TAPERED COLUMNS
3. STANDING SEAM METAL ROOF
4. CONCRETE SLAB (SEE STRUCTURAL DRAWINGS)
5. 8" PIPE BOLLARDS
6. SEE STRUCTURAL DRAWINGS FOR FOUNDATION FOOTING REQUIREMENTS
7. METAL WALL PANELS
8. ALUMINUM GUTTER AND DOWNSPOUT
9. PRE-ENGINEERED METAL BUILDING TRUSS
10. RELOCATED EXISTING HAZARDOUS MATERIAL STORAGE (BEYOND)
11. RECESSED OIL STORAGE CONTAINMENT AREA (BEYOND)



1 / K-2-1 BUILDING SECTION
SCALE: 3/16" = 1'-0"

REVISION: JULY 10, 2015

ATKINS

MANATEE COUNTY - LENA ROAD LANDFILL
OPERATIONS PERMIT RENEWAL 2015

HOUSEHOLD HAZARDOUS WASTE COLLECTION AND STORAGE
FACILITY OPERATION PLAN
SECTION

FIGURE
K-2-2

ATTACHMENT K-3

Landfill Equipment List

	Quantity
Air Compressor, Sullair	1
Bulldozer, Caterpillar D7	4
Bulldozer, Caterpillar D6	1
Club Car	1
Compactor, Caterpillar 836H	2
Dump Truck, Caterpillar 740	3
Excavator, Caterpillar 345BL	1
Excavator, Caterpillar 345CL	1
Forklift, Yale Veractor 60VX	1
Gator, John Deere	1
Generator - Admin & Ops Kohler	2
Generator - CDO, Caterpillar	1
Generator - Landfill 9021	1
Generator - Scalehouse, Ram Power	1
Grader, Caterpillar 143H	1
Kawasaki Mule	3
Kubota RVT	1
Loader, Caterpillar 950	3
Mowing Deck, 6' Finish Deck	1
Mowing Deck, 20' Flex Deck	2
Polaris Ranger	1
Pump, Thompson 6V-DPRT-1004CPU	2
Riding Lawnmower	2
Roll Off Containers	8
Roll Off Truck, International	1
Scraper, Caterpillar 623G	1
Street Sweeper, Tennant	1
Tarpomatic, 28T	2
Trailer, Crosley	1
Tractor, John Deere 7810	1
Tractor, John Deere 7220	1
Tractor, Massey Ferguson 6495	1
Truck, International 4300 Refueler	1
Vibratory Roller, Saki	1
Water Wagon, Caterpillar 613C	1
Welder W/Plasma Cutter	1

Part L: Water Quality Monitoring Requirements

1.0 Water Quality Monitoring Plan

The water quality and leachate monitoring plan provided in Attachment L-1 meets the following requirements:

a. Based on the information obtained in the hydrogeological investigation and previous permit, this water quality and leachate monitoring plan is signed, dated and sealed by the PG or PE as given on the cover page who prepared it; (62-701.510(2)(a), F.A.C.)

b. Water Quality Monitoring Quality Assurance

1) All fieldwork done in connection with the facility's Water Quality Monitoring Plan shall be conducted in accordance with the Standard Operating Procedures (SOPs) described in DEP-SOP-001-01 dated March 31, 2008 as referenced in Rule 62-160.210(1), F.A.C. All laboratory analyses done in connection with the facility's Water Quality Monitoring Plan shall be conducted by firms that are certified by the Department of Health Environmental Laboratory Certification Program under Chapter 64E-1, F.A.C., where such certification is required by Rule 62-160.300(1), F.A.C., and in accordance with the schedule referenced in Rule 62-160.300(2), F.A.C. The SOPs utilized and the laboratory's list of certified test methods and analytes must specifically address the types of sampling and analytical work that are required by the permit and shall be implemented by all persons performing sample collection or analysis related to this permit. Alternate field procedures and laboratory methods may be used if approved according to the requirements of Rules 62-160.220 and 62-160.330, F.A.C., respectively.

c. Ground Water Monitoring Wells

1) <u>Detection wells located downgradient from and within 50 feet of disposal unit.</u>

The existing Stage I and III Landfill ground water monitor wells are listed in Table L-1, and the locations shown on Figure 1 of Attachment L-1. The ground water monitoring wells proposed for the Stage II Landfill are also listed in Table L-1 and the locations shown in Attachment L-1. The Stage II Landfill wells and piezometers will be installed approximately six months before the start of filling in the Stage II Landfill. Due to the width of the existing stormwater retention area, the detection wells could not be located within 50-feet of the disposal unit. The distances between the slurry wall and the detection wells for GW-18 though GW-28 range between 60 and 71-feet.

2) Downgradient compliance wells required.

Multiple downgradient compliance wells shall be located at or immediately adjacent to the compliance line of the zone of discharge, if required in Rule 62-701.510 (7), F.A.C.

3) Background wells screened in all aquifers below the landfill that may be affected by the landfill.

The background well BGW-1 is screened in the surficial aquifer, which is the aquifer that may be affected by the landfill.

4) Location information for each monitoring well.

Per 62-701.510(3)(d) 1. "The location of each well, in degrees, minutes and seconds (to two decimal places) of latitude and longitude, and the elevation of the top of the well casing to the nearest 0.01 foot, using a consistent, nationally recognized datum, shall be determined by a Florida Licensed Professional Surveyor and Mapper. The location information required in subparagraph 62-701.320(7)(f)7., F.A.C., shall be included. Upon completion of each well, Form 62-701.900(30), Monitoring Well Completion Report, effective date January 6, 2010, hereby adopted and incorporated by reference, shall be submitted to the Department to report details of the well construction and location. Copies of this form are available from a local District Office or by writing to the Department of Environmental Protection, Solid Waste Section, MS 4565, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400."

A copy of FDEP Form 62-701.900 (3) is included with Attachment L-1 for reference.

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 alternative well spacing.

The proposed Stage II Landfill wells are spaced approximately 1000 feet apart on the upgradient side of the landfill and 500 feet apart on the downgradient side.

6) Well screen locations properly selected.

The well screen locations for proposed GW-18 through GW-28 are shown on Table 2-1 in Attachment L-1. The screens are set such that the screen is within the zone of seasonal variation of the groundwater level. Since the groundwater elevation has varied as much as 13 feet, a 15-foot screen

interval is used. The screen intervals for existing wells GW-1 through GW-18 are provided on Table 1-2 for reference.

7) Monitoring wells constructed to provide representative ground water samples.

   The 15 foot screen is set within the zone of seasonal variation of the groundwater level and will give representative groundwater samples.

8) Procedures for properly abandoning monitoring wells.

   All wells and piezometers not a part of the approved Water Quality Monitoring Plan shall be plugged and abandoned in accordance with F.A.C. Rule 62-532.440, and the Southwest Florida Water Management District (SWFWMD). The permittee shall submit a written report to the Department documenting verification of the well abandonment within ninety (90) days of abandonment. Documentation of abandonment shall include a map showing piezometer/well locations and SWFWMD abandonment records. A written request for exemption to the abandonment of a well must be submitted to the FDEP's Solid Waste Section for approval.

Hydraulic Gradient Monitoring Points

The hydraulic monitoring points are located on Figure 1 in Attachment L-1. The hydraulic gradient across the slurry wall shall be measured at the monitoring points listed in Table L-2.These points shall be monitored monthly for water levels to an accuracy of 0.01 feet. Results of the monthly monitoring shall be submitted by the 15th day of the following month. An inward gradient shall be maintained across the slurry wall. If an outward gradient exists, steps for correcting the gradient shall be included with the related monthly data. Damaged gradient monitoring points shall be replaced within thirty (30) days to ensure continuous monthly monitoring at all points.

Table L-1
Ground Water Monitoring Wells

Existing Stage I and III Landfill Ground Water Monitoring Wells

Well Number	WACS Test site ID Number	Aquifer	Well Designation
GW-1	21593	Surficial	Detection
GW-2	21594	Surficial	Detection
GW-3	21595	Surficial	Detection
GW-4	21596	Surficial	Detection
GW-5	21597	Surficial	Detection
GW-6	21598	Surficial	Detection
GW-7	21599	Surficial	Detection
GW-8	21600	Surficial	Detection
GW-9	21601	Surficial	Detection
GW-10	21602	Surficial	Detection
GW-11	21603	Surficial	Detection
GW-12	21604	Surficial	Detection
GW-13	21605	Surficial	Detection
GW-14	21606	Surficial	Detection
GW-15	21607	Surficial	Detection
GW-16	21608	Surficial	Detection
GW-17	21610	Surficial	Detection
BGW-1	21610	Surficial	Background

Proposed Stage II Landfill Ground Water Monitoring Wells

GW-18		Surficial	Detection
GW-19		Surficial	Detection
GW-20		Surficial	Detection
GW-21		Surficial	Detection
GW-22		Surficial	Detection
GW-23		Surficial	Detection
GW-24		Surficial	Detection
GW-25		Surficial	Detection
GW-26		Surficial	Detection
GW-27		Surficial	Detection
GW-28		Surficial	Detection

BGW – Background Groundwater Monitoring Well
GW – Groundwater Monitoring Well

Note 1. Groundwater monitoring wells are located outside of the slurry wall.
Note 2. GW-1 and GW-2 shall be abandoned after installation of the Stage II ground water monitoring system.

Table L-2
Hydraulic Gradient Monitoring Points

Existing Stage I and III Landfill Monitoring Points

Interior Monitoring Point	Exterior Monitoring Point
PZ-1	GW-1
PZ-2	GW-2
PZ-3	GW-3
PZ-4	GW-4
PZ-5	GW-5
PZ-6	GW-6
PZ-7	GW-7
PZ-8	GW-8
PZ-9	GW-9
PZ-10	GW-10
PZ-11	GW-11
PZ-12	GW-12
PZ-13	GW-13
PZ-14	GW-14
PZ-15	GW-15
PZ-16	GW-16
PZ-17	GW-17

Proposed Stage II Landfill Monitoring Points

PZ-18	GW-18
PZ-19	GW-19
PZ-20	GW-20
PZ-21	GW-21
PZ-22	GW-22
PZ-23	GW-23
PZ-24	GW-24
PZ-25	GW-25
PZ-26	GW-26
PZ-27	GW-27
PZ-28	GW-28

PZ – Piezometer
GW – Groundwater Monitoring Well

Note 1. Piezometers are located inside of the slurry wall, and groundwater monitoring wells are located outside of the slurry wall.
Note 2. GW-1, GW-2, PZ-1 and PZ-2 shall be abandoned after the Stage II Landfill monitoring system is installed.

d. Surface Water Monitoring - The surface water monitoring stations are given in Table L-3, and the locations are shown on Figure 1 of Attachment L-1.

Table L-3
Surface Water Monitoring Points

Surface Water	WACS Test site ID #	Sample Type	Location
SW1	1663	Downstream	Cypress Strand
SW2	1665	Upstream	Cypress Strand

e. Initial and Routine Sampling Frequency and Requirements

1) Ground Water Monitoring Well Construction - Prior to construction of any new wells, the permittee shall request and receive Department approval of a minor permit modification, unless otherwise approved in writing by the Department. New wells and piezometers will be installed as shown on Figure 1 of Attachment L-1.

- Documentation for each well installed shall be submitted on FDEP Form No. 62-701.900(30) Monitor Well Completion Report. A copy is included in Attachment L-1 for reference.

- Within one (1) week of well completion and development, each new well shall be sampled for the parameters listed in F.A.C. Rules 62-701.510(8)(a) and (d), to establish initial ground water quality for each new well.

- A surveyed drawing shall be submitted in accordance with F.A.C. Rule 62-701.510(3)(d)(1), showing the location of all monitoring wells (active and abandoned) horizontally located 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. The surveyed drawing shall include the monitor well identification numbers, locations and elevations of all permanent benchmarks and/or corner monument markers at the site. The survey shall be conducted by a Florida Registered Surveyor.

2) Ground Water Sampling - All detection and background wells shall be sampled in accordance with F.A.C. 62-701.510(6)(d) and analyzed every six (6) months, as dictated by the estimated site groundwater flow rate presented in the 2009 Biennial Report. Each groundwater sample will be analyzed for the ground water monitoring parameters listed in Rule 62-701.510(8)(a), F.A.C. as follows:

Field Parameters	Laboratory Parameters
Static Water Level in wells before purging	Total Ammonia - N
Specific Conductivity	Chlorides
pH	Iron
Dissolved Oxygen	Mercury
Turbidity	Nitrate
Temperature	Sodium
Colors & Sheens (By observation)	Total Dissolved Solids (TDS)
	Those parameters listed in 40 CFR Part 258, Appendix I

Water levels shall be measured in all site wells listed in Table M-1. Additional samples, wells, and parameters may be required based upon subsequent analysis. Method detection limits must meet, or be lower than that parameter's Maximum Contaminant Level in order to demonstrate compliance with Class G-II Ground Water Standards referenced in Chapter 62-550, F.A.C. Compliance with ground water standards shall be based on unfiltered samples. At GW-11, the water table may be found above the top of screen at the time of a scheduled sampling event. GW-11 sampling should be delayed until the water level in the well is below the top of screen.

4) Surface water monitoring stations shall be sampled in accordance with F.A.C. Rule 62-701.510(6)(e), every six (6) months, for the following parameters per Rule 62-701.510(8)(b), F.A.C.

Field Parameters	Laboratory Parameters
Specific conductivity	Unionized ammonia
pH	Total hardness (as mg/L $CaCO_3$)
Dissolved oxygen	Biochemical Oxygen Demand (BOD_5)
Turbidity	Iron
Temperature	Mercury
Colors, sheens (by observation)	Nitrate
	Total dissolved solids (TDS)
	Total Organic Carbon (TOC)
	Fecal coliform
	Total phosphorus (as mg/L P)
	Chlorophy11 A
	Total nitrogen
	Chemical Oxygen Demand (COD)
	Total suspended solids (TSS)
	Those parameters listed in 40 CFR Part 258, Appendix I

f. Verification/Evaluation Monitoring - If at any time monitoring parameters are detected at concentrations significantly above background water quality, or exceed the Department's water quality standards or criteria at the edge of the

zone of discharge, the permittee has thirty (30) days within receipt of the laboratory data to resample the monitor well(s) to verify the original analysis. Should the permittee choose not to resample, the Department will consider the water quality analysis representative of current ground water conditions at the facility, and evaluation monitoring/corrective action as described in F.A.C. Rule 62-701.510(7) may be required.

g. Water Quality Reporting Requirements

1) Semi-annual Report Requirements - The permittee shall submit to the Department the results of the ground water and surface water quality analyses by July 15th and January 15th of each year for the semi-annual periods January-June and July-December, respectively. The permittee shall submit to the Department the results of the leachate quality analyses by January 15th of each year. The items listed in F.A.C. Rule 62-701.510(9)(a), including, but not limited to, a ground water contour map representing conditions at the time of ground water sampling shall be submitted with each set of analytical results. All exceedances of water quality standards shall be noted. The results shall be sent to: Solid Waste Section, Florida Department of Environmental Protection, Southwest District Office, 13051 North Telecom Parkway, Temple Terrace, Florida 33637-0926.

2) Water quality data will be submitted to the Department in an electronic format consistent with the requirements for importing into Department databases. The permittee shall include Form 62-701.900(31), Water Quality Monitoring Certification, effective date January 6, 2010 with each report certifying that the laboratory results have been reviewed and approved by the permittee.

3) Water Quality Monitoring Plan Evaluation - Every two and one-half years, the permittee shall submit to the Department by the dates listed in the Permit an evaluation of the Water Quality and Leachate Monitoring Plan as described in Rule 62-701.510(9), F.A.C. The evaluation shall include the applicable information as required by Rule 62-701.510(9), F.A.C., and shall include an evaluation of the adequacy of the water quality monitoring frequency and sampling locations based upon site conditions.

Attachments:

L-1. Water Quality Monitoring Plan, July 10, 2015

ATTACHMENT L-1

WATER QUALITY MONITORING PLAN

Manatee County Solid Waste Division
Lena Road Class I Landfill
WACS ID No: SWD-41-44795
Permit No: 39884-010-SO/01

July 10, 2015

Prepared For:

Manatee County Utilities Department
Solid Waste Division/Landfill
3333 Lena Road
Bradenton, FL 34211

Prepared By:

4030 West Boy Scout Boulevard, #700
Tampa, Florida 333607

Atkins Project #100040621

Bradley J. Bayne
Florida P.G. #1733

WATER QUALITY MONITORING PLAN

Prepared from:

Permit Number 39884-018-SO/01, which was issued on January 25, 2011.

And:

"Part L; Water Quality and Leachate Monitoring Requirements" of the document entitled "Application and Engineering Report for Renewal of Landfill Operation Permit:, prepared by PBS&J, dated October 1, 2010, received October 7, 2010, November 15, 2010, and January 3, 2011.

Figure L-1, "Water Quality and Evaluation Monitoring Network", prepared by PBS&J, received on January 3, 2011.

Water Quality Monitoring Plan Evaluation Report, Second Half 2009 through Second Half 2012, Manatee County Solid Waste Division, Lena Road Class I Landfill, SWD-41-44795, Permit No.: 39884-010-SO/01, submitted by Atkins, July 2013.

This Water Quality Monitoring Plan has been prepared in conjunction with other permit renewal documentation in support of renewal of the above-referenced Operation permit, which expires on January 5, 2016. This Water Quality Monitoring Plan was developed from information contained within the documents listed above. Each of the documents were signed and sealed by a registered professional geologist or professional engineer prior to submittal to the Florida Department of Environmental Protection.

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1.0 Introduction

The Lena Road Class I Landfill site consists of approximately 316 acres and is located in all or portions of Sections 1 and 12, Township 35 South, Range 18 East, Section 31, Township 34 South, Range 19 East, and Sections 6 and 7, Township 35 South, Range 19 East in west-central Manatee County. The site address is 3333 Lena Road, Bradenton, Florida. The landfill began operations in 1979. A prior, un-lined household waste landfill had existed on the site since the early 1970s. In addition to the landfill, the facility and its operations include a household hazardous waste collection and storage facility, a community drop off center, a yard waste processing area, and a scrap metal and white goods management area. The landfill is constructed with a perimeter slurry wall. Landfill leachate is collected by a leachate collection system. The landfill includes a gas management system and stormwater collection features. The Lena Road Class I Landfill currently operates under Permit Number 39884-018-SO/01, latest revision which was issued on September 12, 2011 and is on file with the Florida Department of Environmental Protection (FDEP). As specified by Chapter 62-701.510(2), Florida Administrative Code (F.A.C.), the permittee shall provide FDEP with a Water Quality Monitoring Plan for the landfill site that describes the groundwater and surface water monitoring systems. This document satisfies that requirement.

2.0 Groundwater

2.1 Monitoring Wells

The groundwater monitoring program consists of collecting groundwater samples from the monitoring well locations listed in Table 1-1. Monitoring well construction details for the currently existing monitoring wells are provided in Table 1-2. The current monitoring well network at the landfill consists of 18 shallow monitoring wells, designated GW-1 through GW-17 and BGW-1. BGW-1 is designated by as the background well, and the other wells are detection wells. Monitoring wells GW-18 through GW-28 will be installed at least 30 days prior to the initiation of debris disposal in Stage II of the landfill.

The current monitoring program includes sampling one background well and seventeen detection wells. All of the wells are screened within the shallow (surficial) aquifer. There are no intermediate aquifer (permeable portions of the Hawthorn Group) or Floridan aquifer monitoring wells used as part of the groundwater monitoring program. Figure 1 shows the monitoring well locations. The monitoring program will be expanded to include GW-18 through GW-28 prior to the initiation of debris disposal in Stage II of the landfill. Monitoring wells GW-1 and GW-2 will be abandoned prior to the initiation of debris disposal in Stage II.

The monitoring network also includes a series of piezometers for use in collecting water level data. The piezometers are located on the "inside" of the slurry wall. There are currently 17 piezometers, which correspond to each of the detection monitoring wells. The groundwater monitoring wells and piezometers are also used to measure the elevation of the water table on either side of the slurry wall, and the gradient across the slurry wall. Piezometers PZ-18 through PZ-28 will be added to the water level monitoring network and will be installed at least 30 days prior to the initiation of debris disposal in Stage II of the landfill. Piezometers PZ-1 and PZ-2 will be abandoned prior to the initiation of debris disposal in Stage II.

2.2 Monitoring Well Installation, Design, and Abandonment

New monitoring wells shall be constructed as shown on Figure 2, Typical Groundwater Monitoring Well. New piezometers shall be constructed as shown on Figure 3, Typical Piezometer, and record drawings of the new wells and piezometers shall also be provided to FDEP. New monitoring wells GW-18 through GW-28 and new piezometers PZ-18 through PZ-28 shall be installed prior to placement of waste into Stage II. Existing monitoring wells GW-1 and GW-2 and existing piezometers PZ-1 and PZ-2 shall be properly abandoned prior to placement of waste into Stage II. Record drawings for all newly-installed groundwater monitoring wells and piezometers shall be submitted to FDEP on Form 62-701.900(3), Monitoring Well Completion Report, Attachment A. The location of each well, in degrees, minutes, and seconds (to two decimal places) of longitude and latitude, and the elevation of the well casing to the nearest 0.01 foot, using a consistent, nationally-recognized datum, shall be determined by a Florida Licensed Professional Surveyor and Mapper. The location information required in subparagraph 62.701.320(7)(f)7, F.A.C. shall be included.

Based on the most recent topographic elevation data for the site, the proposed screen depth elevations for the new monitoring wells and new piezometers are provided in Table 2-1. Since the groundwater elevation has varied by as much as 13 feet at this site, a 15-foot screen interval is used. The screen depths shown on Table 2-1 are approximate; they will be verified and confirmed during well installation based on a professional survey of the top-of-casing. A topographic map of the Stage II area, showing the proposed monitoring well and piezometer locations, is provided as Attachment B-1. Schematic diagrams of the slurry wall and well configurations, the monitoring well details, and piezometer details are shown on Attachment B-2. Due to the width of the site's existing stormwater retention areas, the detection wells for Stage II could not be located within 50 feet of the disposal unit. The distances between the slurry wall and the detection wells for monitoring wells GW-18 through GW-28 range from 60 feet to 71 feet.

For the new monitoring wells, an initial sampling event shall be conducted within seven (7) days of well installation and development, for the analysis of the field and laboratory parameters required by the facility permit (see Section 2.3 of this plan).

All groundwater monitoring wells shall have protective bollards or other devices installed around them if they are located in areas of high traffic flow in order to prevent damage to the well. Wells shall be clearly labeled, visible, and locked when not in use, in order to minimize the potential for unauthorized access.

FDEP shall be notified in writing when any monitoring well is damaged or site conditions require a well to be abandoned. All wells shall be plugged so that they do not act as a conduit for leachate release to the groundwater.

As part of the conditions of the permit renewal, and after installation of all required monitoring wells and piezometers, a surveyed drawing shall be submitted in accordance with Rule 62-701510(3)(d)(1) F.A.C., showing the locations of all monitoring wells (active and abandoned) horizontally located in degrees, minutes, and seconds of longitude and latitude, and the elevation of the top of the well casing to the nearest 0.01 foot, National Geodetic Vertical Datum. The surveyed drawing shall include the monitoring well identification numbers, and the locations and elevations of all permanent benchmarks and/or corner monument markers at the site. The survey will be conducted by a Florida Registered Surveyor.

2.3 Monitoring Well Sampling and Analysis

FDEP shall be notified 14 days prior to conducting any routine sampling event, so that the Department may collect split samples. All field work done in connection with this Water Quality Monitoring Plan shall be conducted in accordance with the most recent version of FDEP's Standard Operating Procedures (SOPs), as described in DEP-SOP-001-01 and referenced in Rule 62-160.210(1), F.A.C. All laboratory analyses done in connection with the facility's Water Quality Monitoring Plan shall be conducted by firms that are certified by the Florida Department of Health as National Environmental Laboratory Accreditation Conference (NELAC)-certified for the analyses required. The SOPs utilized and the laboratory's list of certified test methods and

analytes must specifically address the types of sampling and analytical work that are required by the permit and shall be implemented by all persons performing sample collection or analysis related to this Water Quality Monitoring Plan.

Groundwater elevations will be measured at all active monitoring wells and piezometers during all sampling events to a precision of 0.01 feet. The water surface contour maps prepared for each sampling event will include groundwater elevations (measured in feet NGVD) calculated for each monitoring well. In addition to the water level measurements taken from the groundwater monitoring wells, surface water levels shall also be measured at the electronic water level monitoring devices at the East Lake pump station and South Lake pump station locations, as listed in Table 1-1, for each sampling event. A water table surface elevation contour map shall be prepared for each set of water level measurements and submitted to FDEP for all routine groundwater sampling events and monitoring plan evaluation reports. Figure 1 shows the locations of the surface water electronic water level monitoring devices, which are located at the surface water pump stations.

An "initial sampling event" shall be conducted for all new monitoring wells installed at the site (GW-18 through GW-28), as well as any wells that may need to be replaced in the future. Groundwater monitoring for the "initial sampling events" are sampled on a <u>one-time basis</u> for the following parameters:

<u>Field Parameters</u>

- Static water level before purging
- Specific conductance
- pH
- Dissolved oxygen
- Turbidity
- Temperature
- Color and sheen (by observation)
-

<u>Laboratory Parameters (Unfiltered)</u>

- Total ammonia – nitrogen
- Chlorides
- Iron
- Mercury
- Nitrate
- Sodium
- Total Dissolved Solids (TDS)
- Those parameters listed in 40 CFR Part 258, **Appendix II**

After the "initial sampling event", monitoring wells GW-18 through GW-28 will be sampled routinely on the same periodic basis as monitoring wells GW-3 through GW-17 and BGW-1. (Note that GW-1 and GW-2 are planned for abandonment.) Groundwater monitoring wells associated with the landfill proper during routine sampling events are sampled semi-annually for the following parameters:

Field Parameters

- Static water level before purging
- Specific conductance
- pH
- Dissolved oxygen
- Turbidity
- Temperature
- Color and sheen (by observation)

Laboratory Parameters (Unfiltered)

- Total ammonia – nitrogen
- Chlorides
- Iron
- Mercury
- Nitrate
- Sodium
- TDS
- Those parameters listed in 40 CFR Part 258, **Appendix I**

If, at any time, monitoring parameters (in groundwater or surface water) are detected at concentrations significantly above background water quality or exceed the FDEP's water quality standards or criteria at the edge of the zone of discharge, the permittee has thirty (30) days within receipt of the laboratory data to re-sample the monitoring well(s) to verify the original analysis. Should the permittee choose not to re-sample, the FDEP will consider the water quality analysis representative of current groundwater conditions at the facility, and evaluation monitoring/corrective actions, as described in Rule 62-701.510(7), may be required.

2.4 Gradient Monitoring

Since this landfill features a slurry wall, the horizontal gradient across the slurry wall shall be measured monthly. Gradient measuring points are shown in Table 1-1. Figure 1 shows the locations of the slurry wall gradient monitoring points. Gradient measuring points GW-18 through GW-28 and PZ-18 through PZ-28 will be installed prior to placement of debris in Stage II, while GW-1, GW-2, PZ-1, and PZ-2 will be properly abandoned prior to placement of debris in Stage II.

The water level measurements are typically collected manually using an electronic water level probe. The water levels shall be measured to an accuracy of 0.01 feet. Results of the monthly gradient monitoring shall be submitted to the FDEP by the 15th day of the following month. An inward gradient shall be maintained across the slurry wall. If an outward gradient exists, steps for correcting the gradient shall be included with the related monthly data. Damaged gradient monitoring points shall be replaced within 30 days to ensure continuous monitoring at all points.

Monthly water level measurement will be performed at the following points, each of which corresponds to an interior monitoring point and an exterior monitoring point:

Interior Monitoring Point	Exterior Monitoring Point
PZ-1*	GW-1*
PZ-2*	GW-2*
PZ-3	GW-3
PZ-4	GW-4
PZ-5	GW-5
PZ-6	GW-6
PZ-7	GW-7
PZ-8	GW-8
PZ-9	GW-9
PZ-10	GW-10
PZ-11	GW-11
PZ-12	GW-12
PZ-13	GW-13
PZ-14	GW-14
PZ-15	GW-15
PZ-16	GW-16
PZ-17	GW-17
PZ-18	GW-18
PZ-19	GW-19
PZ-20	GW-20
PZ-21	GW-21
PZ-22	GW-22
PZ-23	GW-23
PZ-24	GW-24
PZ-25	GW-25
PZ-26	GW-26
PZ-27	GW-27
PZ-28	GW-28

* = to be abandoned prior to placement of debris in Stage II

3.0 Surface Water

3.1 Surface Water Monitoring Locations

The surface water monitoring sites include one downstream location in the Cypress Strand surface water body (SW-1) and one upstream location in the Cypress Strand surface water body (SW-2). The sampling site characteristics are described in Table 1-1, and the surface water sampling locations are shown on Figure 1. Electronic water level monitoring devices have been installed at the pump stations in the East Lake and the South Lake (see Figure 1), and are used to measure water levels at the surface water bodies near the landfill. The water level data are reported in conjunction with the groundwater level data.

3.2 Surface Water Sampling and Analysis

Surface water samples are collected semi-annually from SW-1 and SW-2, when sufficient water is present for sampling. Surface water sampling locations are generally sampled semi-annually for the following parameters:

Field Parameters

- Specific conductivity
- pH
- Dissolved oxygen
- Turbidity
- Temperature
- Colors and sheens (by observation)

Laboratory Parameters (Unfiltered)

- Biochemical Oxygen Demand (BOD_5)
- Chemical Oxygen Demand (COD)
- Total Organic Carbon (TOC)
- Chlorophyll A
- Total Hardness (as mg/l CaCO3)
- Iron
- Mercury
- Nitrate
- Total Nitrogen
- Un-ionized ammonia
- Total phosphorus (as mg/l P)
- TDS
- Total Suspended Solids (TSS)
- Fecal Coliform
- Those parameters listed in 40 CFR 258, **Appendix I**

4.0 Reporting

4.1 Water Quality Monitoring Reports

Results of all groundwater semi-annual sampling events shall be submitted to FDEP within 60 days of completion of analyses and no later than January 15th and July 15th of each year. Results of all semi-annual surface water sampling events shall be submitted to FDEP within 60 days of completion of laboratory analyses and no later than January 15th and July 15th of each year. Water quality data shall be provided to FDEP in electronic format (i.e., Electronic Data Deliverable reports in .pdf format and laboratory data in ADaPT format). The water quality monitoring reports shall provide the information required in Rules 62-701.510(9)(a)1 through 62-701.510(9)(a)10. At a minimum, the report shall include:

1. Cover Letter;
2. Summary of Exceedances and Recommendations;
3. Groundwater contour maps;
4. Chain-of-Custody forms;
5. Water levels; water elevation table;
6. Ground Water Monitoring Report Certification, using Department Form #62-701.900(31), see Attachment C;
7. Appropriate sampling information on Form FD 9000-24 (DEP-SOP-001/01); and
8. Laboratory and field data and error logs, as applicable.

The reports shall be submitted to the following two FDEP offices:

- FDEP, Southwest District Office, Solid Waste Section, 13051 North Telecom Parkway, Temple Terrace, Florida, 33637-0926
- FDEP, Solid Waste Section, 2600 Blair Stone Road, MS 4565, Tallahassee, FL 32399-2400.

4.2 Evaluation of Water Quality Monitoring Plan

An evaluation of the water quality monitoring plan for the Lena Road Class I Landfill, including evaluation of water quality monitoring data (groundwater analyses, surface water analyses, and groundwater flow direction), shall be submitted to FDEP on a periodic basis. The evaluation is now required a minimum of every 2.5 to 5 years. The most recent evaluation report was completed in July 2013, and the next report currently scheduled under the permit is due in October 2015. The evaluation reports must be submitted prior to permit expiration. The schedule for subsequent submittals of Water Quality Monitoring Plan Evaluation Reports will be provided in the permit renewal.

The evaluations shall include the applicable information as listed in Rule 62-701.510(9)(b). At a minimum, the report shall include the following:

1. Tabular and graphical displays of any data which show that a monitoring parameter has been detected;
2. Trend analyses of any monitoring parameters detected;
3. Comparisons among shallow, middle, and deep zone wells;
4. Comparisons between background water quality and the water quality in the detection and compliance wells;
5. Correlations between related parameters, such as total dissolved solids and specific conductance;
6. Discussion of erratic and/or poorly correlated data;
7. An interpretation of groundwater contour maps, including an evaluation of groundwater flow rates; and
8. An evaluation of the adequacy of the water quality monitoring frequency and sampling locations based on site conditions.

The evaluation reports shall be submitted to the following FDEP office:

- FDEP, Southwest District Office, Solid Waste Section, 13051 North Telecom Parkway, Temple Terrace, Florida, 33637-0926

5.0 Environmental Professional Qualifications and Signatures

The following environmental professional was responsible for the preparation of this water quality monitoring plan.

Mr. Bradley J. Bayne, P.G.
Senior Geologist, Atkins

Mr. Bayne is a Florida-registered professional geologist with over 23 years of experience in the planning and performance of environmental projects.

7-10-2015
Date

Bradley J. Bayne
Bradley J. Bayne
Florida P.G. #1733

TABLES

TABLE 1-1
WATER QUALITY MONITORING NETWORK
MANATEE COUNTY
LENA ROAD LANDFILL

Groundwater Sampling Points (Monitoring Wells)			
Location/Well Identifier	**Aquifer Monitored**	**Designation**	**WACS Testsite ID No.**
GW-1*	Surficial	Detection	21593
GW-2*	Surficial	Detection	21594
GW-3	Surficial	Detection	21595
GW-4	Surficial	Detection	21596
GW-5	Surficial	Detection	21597
GW-6	Surficial	Detection	21598
GW-7	Surficial	Detection	21599
GW-8	Surficial	Detection	21600
GW-9	Surficial	Detection	21601
GW-10	Surficial	Detection	21602
GW-11	Surficial	Detection	21603
GW-12	Surficial	Detection	21604
GW-13	Surficial	Detection	21605
GW-14	Surficial	Detection	21606
GW-15	Surficial	Detection	21607
GW-16	Surficial	Detection	21608
GW-17	Surficial	Detection	21609
BGW-1	Surficial	Background	21610
Groundwater Sampling Points (Monitoring Wells) to be installed prior to debris disposal in Stage II			
GW-18	Surficial	Detection	27495
GW-19	Surficial	Detection	27496
GW-20	Surficial	Detection	27497
GW-21	Surficial	Detection	27498
GW-22	Surficial	Detection	27499
GW-23	Surficial	Detection	27500
GW-24	Surficial	Detection	27501
GW-25	Surficial	Detection	27502
GW-26	Surficial	Detection	27503
GW-27	Surficial	Detection	27504
GW-28	Surficial	Detection	27505
Surface Water Level Measuring Points			
PS-EL		East Lake Pump Station	
PS-SL		South Lake Pump Station	

* = To be abandoned prior to debris disposal in Stage II

TABLE 1-1 (continued)
WATER QUALITY MONITORING NETWORK
MANATEE COUNTY
LENA ROAD LANDFILL

Piezometers			
Location/Well Identifier	**Aquifer Monitored**	**Designation**	**WACS Testsite ID No.**
PZ-1*	Surficial	Piezometer	Not Applicable
PZ-2*	Surficial	Piezometer	Not Applicable
PZ-3	Surficial	Piezometer	Not Applicable
PZ-4	Surficial	Piezometer	Not Applicable
PZ-5	Surficial	Piezometer	Not Applicable
PZ-6	Surficial	Piezometer	Not Applicable
PZ-7	Surficial	Piezometer	Not Applicable
PZ-8	Surficial	Piezometer	Not Applicable
PZ-9	Surficial	Piezometer	Not Applicable
PZ-10	Surficial	Piezometer	Not Applicable
PZ-11	Surficial	Piezometer	Not Applicable
PZ-12	Surficial	Piezometer	Not Applicable
PZ-13	Surficial	Piezometer	Not Applicable
PZ-14	Surficial	Piezometer	Not Applicable
PZ-15	Surficial	Piezometer	Not Applicable
PZ-16	Surficial	Piezometer	Not Applicable
PZ-17	Surficial	Piezometer	Not Applicable
Piezometers to be installed prior to debris disposal in Stage II			
PZ-18	Surficial	Piezometer	Not Applicable
PZ-19	Surficial	Piezometer	Not Applicable
PZ-20	Surficial	Piezometer	Not Applicable
PZ-21	Surficial	Piezometer	Not Applicable
PZ-22	Surficial	Piezometer	Not Applicable
PZ-23	Surficial	Piezometer	Not Applicable
PZ-24	Surficial	Piezometer	Not Applicable
PZ-25	Surficial	Piezometer	Not Applicable
PZ-26	Surficial	Piezometer	Not Applicable
PZ-27	Surficial	Piezometer	Not Applicable
PZ-28	Surficial	Piezometer	Not Applicable

Surface Water Sampling Points		
Identifier	**Location**	**WACS Testsite ID**
SW-1	Downstream location, Cypress Strand	1663
SW-2	Upstream location, Cypress Strand	1665

* = To be abandoned prior to debris disposal in Stage II

TABLE 1-2
LENA ROAD LANDFILL
EXISTING MONITORNG WELL AND PIEZOMETER NETWORK

Well	Survey Readings[1]				Total Depth (FT-TOC)	Screened Interval (FT-NGVD)
	Northing	Easting	TOC Elev. (FT-NGVD)	Ground Elev. (FT-NGVD)		
Monitoring Wells						
GW-1	1141555.836	514101.2946	38.68	36.5	19.42	19.76-34.76
GW-2	1141565.321	512079.528	40.92	38.6	19.41	22.01-37.01
GW-3	1141382.246	511374.680	39.40	36.7	19.56	20.34-35.34
GW-4	1141410.648	510878.613	40.53	38.0	19.63	21.4-36.4
GW-5	1141415.374	510383.901	39.90	37.2	19.66	20.74-35.74
GW-6	1141424.677	509886.008	38.95	37.0	19.54	19.91-34.91
GW-7	1141435.593	509387.991	39.49	36.6	20.54	19.45-34.45
GW-8	1141305.399	509044.793	39.75	37.0	20.32	19.93-34.93
GW-9	1140722.840	509305.788	39.65	37.0	20.56	19.59-34.59
GW-10	1140206.615	509611.461	38.34	35.9	20.15	18.82-33.82
GW-11	1139864.832	510378.371	38.26	35.0	25	13.76-28.76
GW-12	1139527.507	511409.936	42.09	40.2	20.27	22.32-37.32
GW-13	1139203.084	512112.455	44.79	42.8	20.22	25.07-40.07
GW-14	1138496.263	513011.134	39.63	36.6	20.15	19.98-34.98
GW-15	1138992.935	513634.354	42.33	39.7	20.0	22.83-37.83
GW-16	1140276.769	513645.173	44.41	41.3	19.84	24.76-39.76
GW-17	1141976.954	513542.637	42.19	39.1	20.8	21.89-36.89
BGW-1	1137577.961	513559.236	47.57	44.4	20.3	27.77-42.77
Piezometers						
PZ-1	1141618.682	514103.390	42.68	39.5	25.5	14.5-24.5
PZ-2	1141507.415	512079.730	42.32	38.9	27.84	11.6-21.6
PZ-3	1141323.402	511365.800	40.36	36.9	31.29	6.1-16.1
PZ-4	1441330.072	510872.586	40.78	37.4	31.14	6.6-16.8
PZ-5	1141337.377	510385.184	40.73	37.2	31.7	6.0-16.0
PZ-6	1141346.216	509872.215	40.74	37.1	31.88	5.7-15.7
PZ-7	1141351.509	509387.693	40.60	37.1	31.75	5.9-15.9
PZ-8	1141313.863	509125.203	40.21	37.3	22.79	15.0-25.0
PZ-9	1140745.817	509323.037	39.97	37.4	24.53	13.4-23.4
PZ-10	1140205.638	509631.702	39.86	36.7	24.53	12.7-22.7
PZ-11	1139916.081	510379.109	40.52	36.9	31.71	5.7-15.7
PZ-12	1139533.927	511469.648	43.28	40.4	24.14	16.8-26.8
PZ-13	1139230.927	512162.080	44.78	42.8	26.17	17.1-27.1
PZ-14	1138593.317	513011.049	45.09	42.8	20.25	23.1-33.1
PZ-15	1138993.166	513574.513	45.57	42.6	19.7	23.4-33.4
PZ-16	1140275.169	513579.896	44.67	43.0	20	23.5-33.5
PZ-17	1141978.597	513606.645	44.28	42.8	20.37	22.9-32.9

1) Horitzontal Data: NAD83 (1990); Vertical Data: NGVD 1929.
2) TOC = Top-of-Casing; NGVD = National Geodetic Vertical Datum.

TABLE 2-1
STAGE II PROPOSED MONITORING WELL DEPTHS
MANATEE COUNTY
LENA ROAD LANDFILL

Monitoring Wells to be installed at Stage II				
Location/Well Identifier	**Approximate Surface Elevation (NGVD)**	**Designed Screen Interval Elevation**	**WACS Testsite ID**	**Distance from Slurry Wall**
GW-18	37	17.5 – 32.5	27495	60 feet
GW-19	35	15.5 – 30.5	27496	60 feet
GW-20	37	17.5 – 32.5	27497	65 feet
GW-21	37	17.5 – 32.5	27498	62 feet
GW-22	38	18.5 – 33.5	27499	66 feet
GW-23	38	18.5 – 33.5	27500	65 feet
GW-24	39	19.5 – 34.5	27501	63 feet
GW-25	39	19.5 – 34.5	27502	71 feet
GW-26	37	17.5 – 32.5	27503	66 feet
GW-27	38	18.5 – 33.5	27504	66 feet
GW-28	38	18.5 – 33.5	27505	66 feet
Piezometers to be installed in Stage II				
PZ-18	40	20 - 30	N/A	5 feet
PZ-19	39	19 - 29	N/A	5 feet
PZ-20	38	18 - 28	N/A	5 feet
PZ-21	38	18 - 28	N/A	5 feet
PZ-22	38	18 - 28	N/A	5 feet
PZ-23	39	19 - 29	N/A	5 feet
PZ-24	39	19 - 29	N/A	5 feet
PZ-25	39	19 - 29	N/A	5 feet
PZ-26	39	19 - 29	N/A	5 feet
PZ-27	39	19 - 29	N/A	5 feet
PZ-28	39	19 - 29	N/A	5 feet

N/A = not applicable

FIGURES

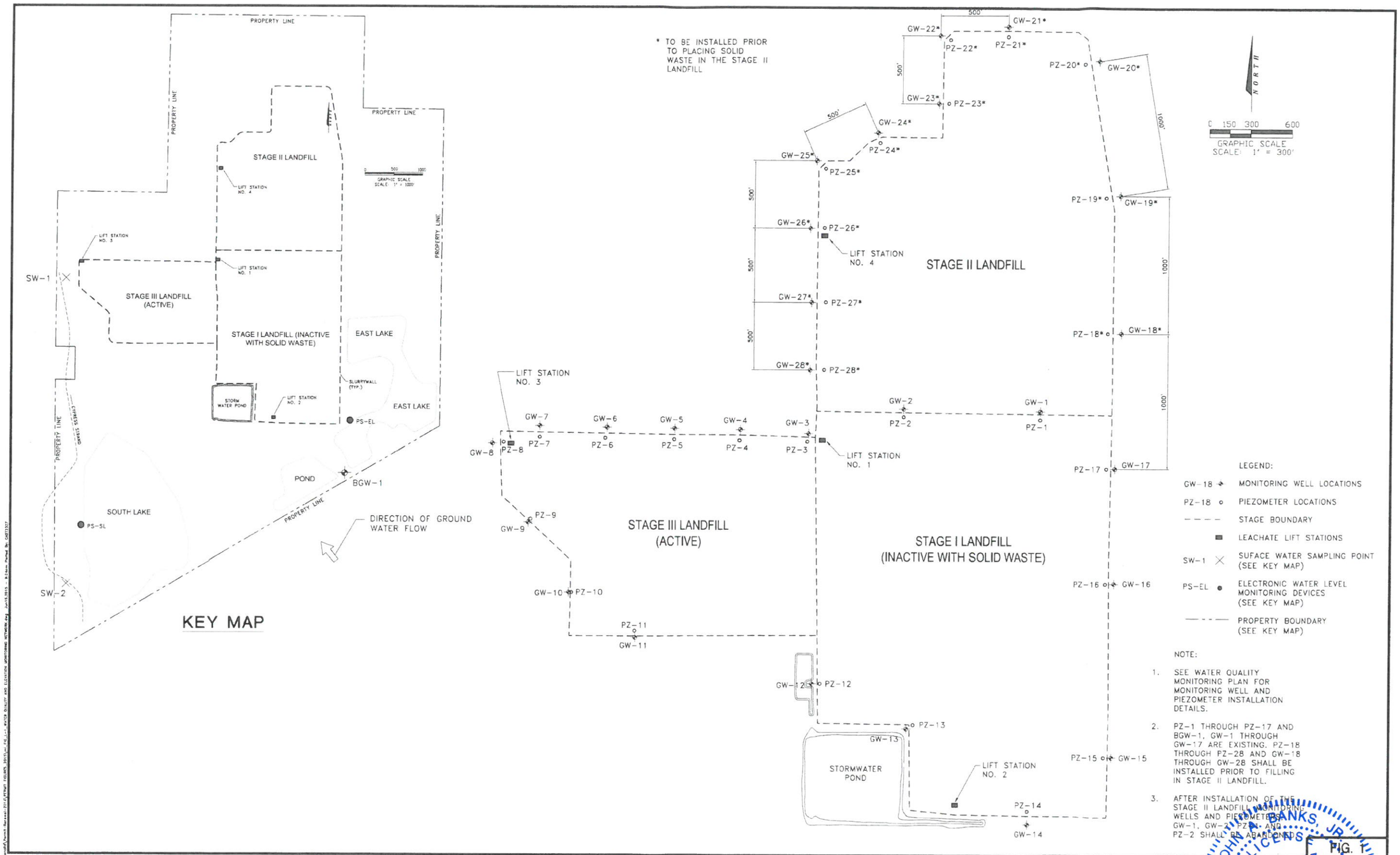


FIG. 1

ATKINS
482 SOUTH KELLER ROAD
Orlando, Fl 32810-6101
TEL: (407) 647-7275
FAX: (407) 647-0624
www.atkinsglobal.com

5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
BOARD OF COUNTY COMMISSIONERS	LENA ROAD CLASS I LANDFILL	WATER QUALITY AND ELEVATION
MANATEE COUNTY	PERMIT RENEWAL 2015	MONITORING NETWORK
FLORIDA		

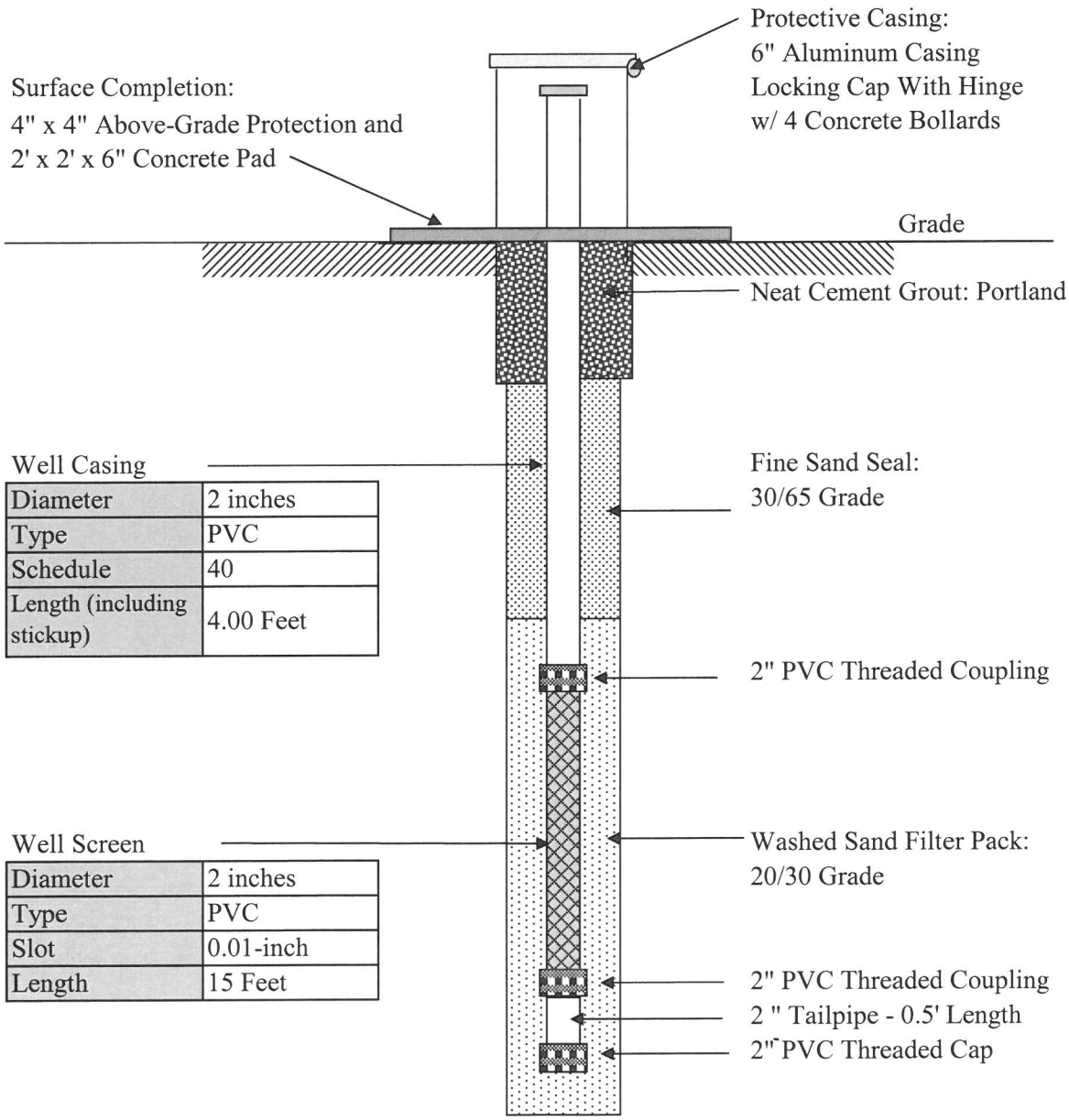
ORIGINAL June, 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: John Banks
Florida P.E. No.: 39397
Address: ATKINS
100 Fairground Drive
Suite 207
Sarasota, FL 34232
Signature / Date

JOB NO. 10004021
DRAWN
DESIGN
CHECKED
SHEET 1 of 1

FIGURE 2: TYPICAL GROUNDWATER MONITORING WELL

Site:	Lena Road Landfill
Well Identifier:	GW-18 through GW-28
Northing/Easting	TBD
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 Inches
Aquifer Monitored:	Surficial
Total Depth (Feet):	19.5
Top-of-Casing Elevation (Feet):	ranges from 38 to 42
Top-of-Screen Elevation (Feet):	ranges from 30.5 to 34.5
Ground Elevation (Feet):	ranges from 35 to 39



Well Casing	
Diameter	2 inches
Type	PVC
Schedule	40
Length (including stickup)	4.00 Feet

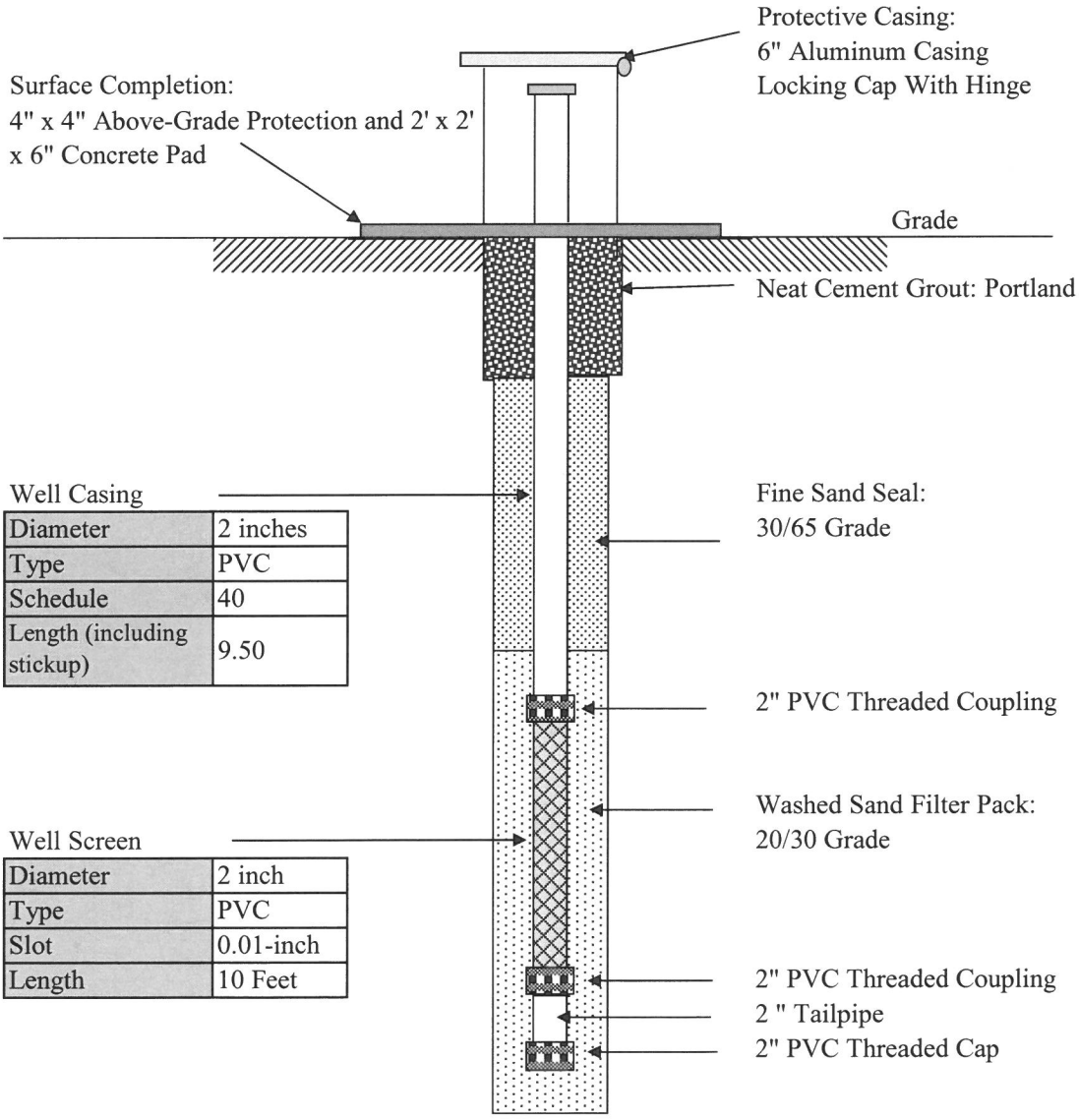
Well Screen	
Diameter	2 inches
Type	PVC
Slot	0.01-inch
Length	15 Feet

Atkins

Note: Not to scale

FIGURE 3: TYPICAL PIEZOMETER

Site:	Lena Road Landfill
Well Identifier:	PZ-18 through PZ-28
Northing/Easting	TBD
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 Inches
Total Depth (Feet):	20.00
Top-of-Casing Elevation (Feet)	ranges from 41 to 43
Top-of-Screen Elevation (Feet)	ranges from 28 to 30
Ground Elevation (Feet):	ranges from 38 to 40



Well Casing	
Diameter	2 inches
Type	PVC
Schedule	40
Length (including stickup)	9.50

Well Screen	
Diameter	2 inch
Type	PVC
Slot	0.01-inch
Length	10 Feet

Atkins

Note: Not to scale

ATTACHMENT A

FDEP Form 62-701.900(3) – Monitoring Well Completion Report

Department of Environmental Protection

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

DEP Form # 62-701.900(30)
Form Title: Monitoring Well Completion Report
Effective Date: January 6, 2010
Incorporated in Rule 62-701.510(3)

MONITORING WELL COMPLETION REPORT

DATE: _____

FACILITY NAME: _____

DEP PERMIT NO.: _____ WACS_FACILITY: _____

WACS MONITORING SITE_NUM.: _____ WACS_WELL: _____

WELL_TYPE: BACKGROUND _____ DETECTION _____ COMPLIANCE _____

LATITUDE AND LONGITUDE (see back for requirements): _____

Coordinate Accuracy _____ Datum _____ Elevation Datum _____

Collection Method _____ Collection Date _____

Collector Name _____ Collector Affiliation _____

AQUIFER MONITORED: _____

DRILLING METHOD: _____ DATE INSTALLED: _____

INSTALLED BY: _____

BORE HOLE DIAMETER: _____ TOTAL DEPTH: _____ (BLS)

CASING TYPE: _____ CASING DIAMETER: _____ CASING LENGTH: _____

SCREEN TYPE: _____ SCREEN SLOT SIZE: _____ SCREEN LENGTH: _____

SCREEN DIAMETER: _____ SCREEN INTERVAL: _____ TO _____
(BLS)

FILTER PACK TYPE: _____ FILTER PACK GRAIN SIZE: _____

INTERVAL COVERED: _____ TO _____ (BLS)

SEALANT TYPE: _____ SEALANT INTERVAL: _____ TO_____ (BLS)

GROUT TYPE:_____ GROUT INTERVAL: _____ TO_____ (BLS)

TOP OF CASING ELEVATION (NGVD): _____ GROUND SURFACE ELEVATION (NGVD): _____

DESCRIBE WELL DEVELOPMENT: _____

POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): _____

DATE AND TIME MEASURED: _____

REMARKS: _____

_____

NAME OF PERSON PREPARING REPORT: _____

_____

(Name, Organization, Phone No., E-mail)

NOTE: ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.(NGVD) NATIONAL GEODETIC VERTICAL DATUM OF 1988 (BLS) = BELOW LAND SURFACE

Latitude must be measured in degrees, minutes and seconds, to at least two (2) decimal places.

Longitude must be measured in degrees, minutes and seconds, to at least two (2) decimal places.

Eastings and northings (State Plane Coordinates) **must** be converted to latitude and longitude.

Coordinate Accuracy: the measured, estimated degree of correctness of the measurement. An accuracy of 15 feet or 5 meters is preferred.

Datum: the horizontal reference for measuring locations on the Earth's surface. NAD83-North American Datum of 1983 is preferred.

Elevation Datum: the reference datum from which elevation measurements are made. NGVD88 (National Geodetic Vertical Datum of 1988) is preferred.

Collection Method: the method or mechanism used to derive the measurements, e.g. GPS, map, aerial photo, etc.

Collection Date: the date and time on which the measurements were taken.

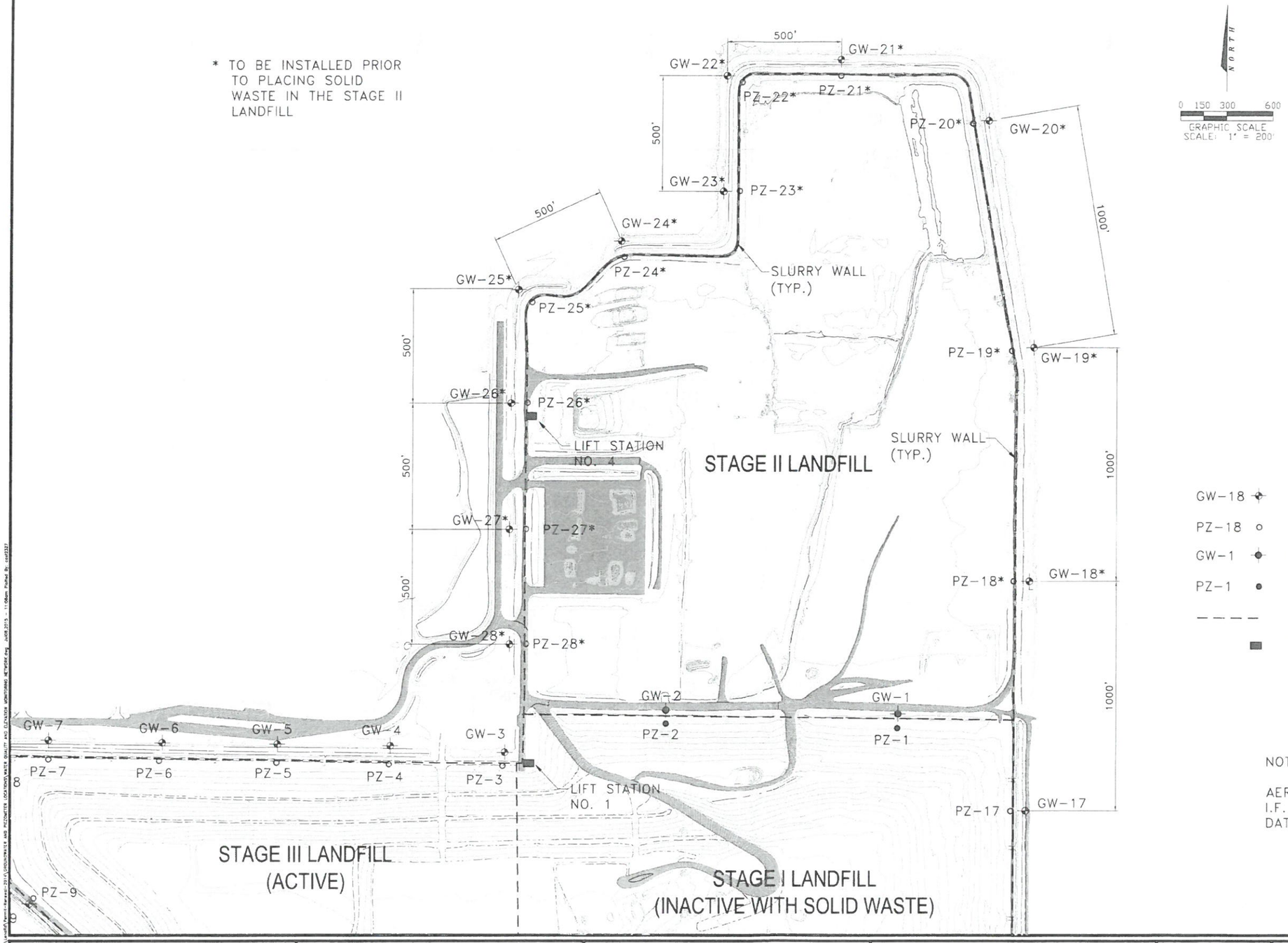
Collector Name: the name of the person taking the measurement.

Collector Affiliation: the agency or company for whom the collector works.

ATTACHMENT B

Stage II Monitoring Well Exhibits

* TO BE INSTALLED PRIOR TO PLACING SOLID WASTE IN THE STAGE II LANDFILL



LEGEND:

GW-18 ⊕	MONITORING WELL LOCATIONS
PZ-18 ○	PIEZOMETER LOCATIONS
GW-1 ⊕	MONITORING WELLS TO BE ABANDONED
PZ-1 ●	PIEZOMETERS TO BE ABANDONED
— — —	STAGE BOUNDARY
▬	LEACHATE LIFT STATIONS

NOTE:

AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

JOHN A. BANKS JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

ATTACH. B-1

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482 SOUTH KELLER ROAD
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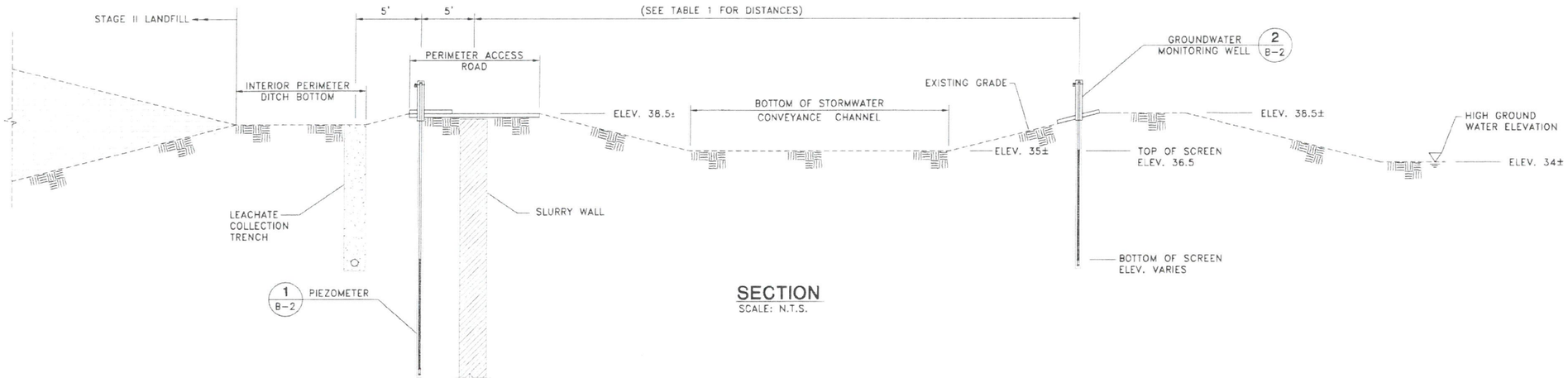
5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
BOARD OF COUNTY COMMISSIONERS	LENA ROAD CLASS I LANDFILL	STAGE II
MANATEE COUNTY	PERMIT RENEWAL 2015	WATER QUALITY AND ELEVATION
FLORIDA		MONITORING NETWORK

ORIGINAL June. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

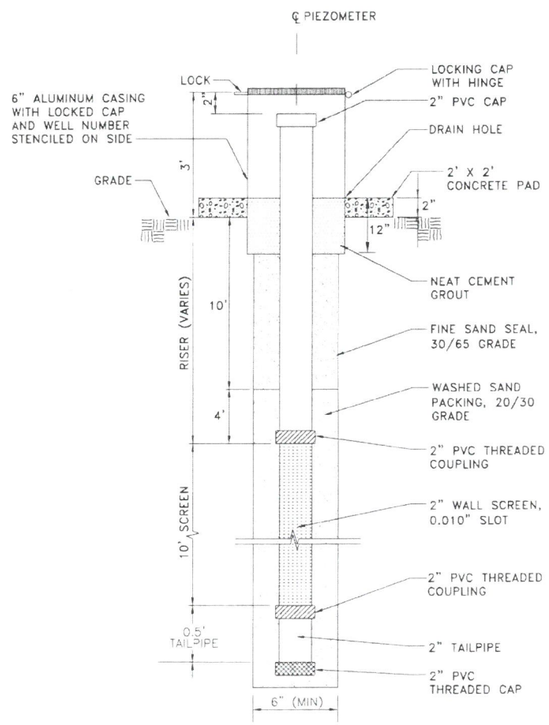
Name: John A. Banks
Florida P.E. No.: 39397
Address: ATKINS
100 Renaissance Drive
Suite 207
Sarasota, FL 34243
Signature Date

JOB NO. 100040621
DRAWN: RGC
DESIGN: RGC/BB
CHECK: BB
Q.C.: JAB
SHEET 1/1



SECTION

SCALE: N.T.S.



PIEZOMETER DETAIL 1 B-2

SCALE: N.T.S.

CONSTRUCTION NOTES:

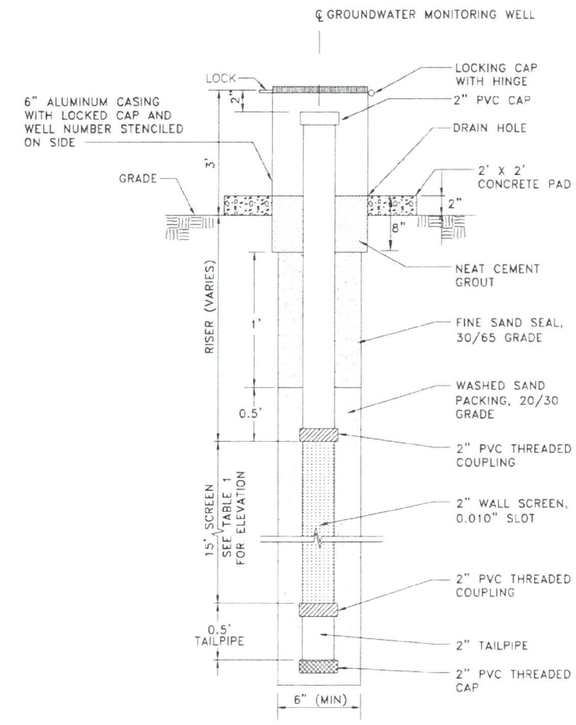
1. ALL WORK SHALL BE DONE BY A FLORIDA CERTIFIED WATER WELL DRILLER.

2. NEW MONITORING WELLS AND PIEZOMETERS SHALL BE INSTALLED PER ASTM D-5092 (1995) E1-STANDARD PRACTICE FOR DESIGN AND INSTALLATION OF GROUND WATER MONITORING WELLS IN GRANULAR AQUIFERS, AND THE FOLLOWING DOCUMENTATION SUBMITTED TO FDEP WITH COPIES TO THE OWNER AND ENGINEER.

   A. FDEP FORM 62-701.900(30) MONITORING WELL COMPLETION REPORT

   B. A SURVEY DRAWING SHALL BE SUBMITTED IN ACCORDANCE WITH F.A.C. RULE 62-701.510(3)(D)(1). SHOWING THE LOCATION OF ALL MONITORING WELLS (ACTIVE AND ABONDONED) HORIZONTALLY LOCATED 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. THE SURVEYED DRAWING SHALL INCLUDE THE MONITOR WELL IDENTIFICATION NUMBERS, LOCATIONS AND ELEVATIONS OF ALL PERMANENT BENCHMARKS AND /OR CORNER MONUMENT MARKER AT THE SITE. THE SURVEY SHALL BE CONDUCTED BY A FLORIDA REGISTERED SURVEYOR.

3. ALL REPORTS SHALL BE SENT TO: JOHN MORRIS, P.G. SOLID WASTE SECTION, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SOUTHWEST DISTRICT OFFICE, 13051 NORTH TELECOM PARKWAY, TEMPLE TERRACE, FL. 33637-0926; AND ALSO TO: SOLID WASTE SECTION, DEPARTMENT OF ENVIRONMENTAL PROTECTION, 3900 COMMONWEALTH BOULEVARD, M.S. 4565, TALLAHASSEE, FL 32399-3000.



GROUNDWATER MONITORING WELL DETAIL

SCALE: N.T.S.

2 B-2

TABLE B-1

	WELL	ELEVATION OF SCREEN INTERVAL (FEET-NGVD)	DISTANCE FROM SLURRY WALL (FT)
EXISTING WELLS	GW-1	19.76-34.76	57
	GW-2	22.01-37.01	53
	GW-3	20.34-35.34	55
	GW-4	21.40-36.40	75
	GW-5	20.74-35.74	73
	GW-6	19.91-34.91	75
	GW-7	19.45-34.45	79
	GW-8	19.93-34.93	76
	GW-9	19.59-34.59	26
	GW-10	18.69-33.69	16
	GW-11	17.15-32.15	55
	GW-12	22.32-37.32	55
	GW-13	25.07-40.07	83
	GW-14	19.98-34.98	92
	GW-15	22.83-37.83	55
	GW-16	24.76-39.76	61
	GW-17	21.89-36.89	59
PROPOSED WELLS	GW-18	17.50-32.50	60
	GW-19	15.50-30.50	60
	GW-20	17.50-32.50	65
	GW-21	17.50-32.50	62
	GW-22	18.50-33.50	66
	GW-23	18.50-33.50	65
	GW-24	19.50-34.50	63
	GW-25	19.50-34.50	71
	GW-26	17.50-32.50	66
	GW-27	18.50-33.50	66
	GW-28	18.50-33.50	66

JOHN A. BANKS LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

ATTACH. B-2

ATKINS
482 SOUTH KELLER ROAD
Orlando, Fl 32810-6101
TEL. 407) 647-7275
FAX. (407) 647-0624
www.atkinsglobal.com
5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
BOARD OF COUNTY COMMISSIONERS	LENA ROAD CLASS I LANDFILL	STAGE II
MANATEE COUNTY	PERMIT RENEWAL 2015	MONITORING WELL AND
FLORIDA		PIEZOMETER INSTALLATION DETAILS

ORIGINAL June. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: John A. Banks
Florida P.E. No.: 39397
Address: ATKINS
100 Paramount Drive
Suite 207
Sarasota, Fl 34232
Signature Date

JOB NO. 10004062I
DRAWN RGC
DESIGN RGC/BB
CHECKED BB
Q.C. JAB
SHEET

ATTACHMENT C

FDEP Form 62-701.900(31) – Water Quality Monitoring Certification

Florida Department of Environmental Protection

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

DEP Form #: 62-701.900(31), F.A.C.
Form Title: Water Quality Monitoring Certification
Effective Date: January 6, 2010
Incorporated in Rule 62-701.510(9), F.A.C.

WATER QUALITY MONITORING CERTIFICATION

PART I GENERAL INFORMATION

(1) Facility Name _____

Address _____

City _____ Zip _____ County _____

Telephone Number (____) _____

(2) WACS Facility ID _____

(3) DEP Permit Number _____

(4) Authorized Representative's Name _____ Title _____

Address _____

City _____ Zip _____ County _____

Telephone Number (____) _____

Email address (if available) _____

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

_____ _____
(Date) (Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization _____

Analytical Lab NELAC / HRS Certification # _____

Lab Name _____

Address _____

Phone Number (____) _____

Email address (if available) _____

PART M SPECIAL WASTE HANDLING REQUIREMENTS

1 Procedures for managing motor vehicles can be found in Part K Operation Plan – K 14.a.

2 Procedures for landfilling shredded waste can be found in Part K Operation Plan – K 14.b.

3 Procedures for asbestos waste disposal can be found in Part K Operation Plan K 14.c.

4 Procedures for disposal or management of contaminated soil can be found in Part K Operation Plan K 14.d.

5 Procedures for disposal of biological wastes can be found in Part K Operation Plan K 14.e.

Part N: Gas Management System Requirements

1. **Design of the Gas Management System**

The landfill gas management system for the Stage I Landfill is covered by Permit No. 39884-011-SF/01 dated October 19, 2006 with an expiration date of October 19, 2011. This permit includes the flare. The Stage I Landfill gas collection system and flare has been constructed and is in operation. The Stage III Landfill gas management system is covered by Permit No. 39884-016-SC/08 dated October 22, 2008 with an expiration date of October 19, 2011. The first phase of the Stage III landfill gas collection system was constructed and connected to the flare. On June 9, 2011 the existing permit was modified for the purpose of installing Phase 2 of the Stage III gas collection system and to extend the permit to October 22, 2013. The Phase 2 gas collection system was certified complete on February 7, 2012. The landfill gas management system was designed to:

a. Prevent concentrations of combustible gases from exceeding 25% of the LEL in structures and 100% of the LEL at the property boundary;

b. For site-specific conditions;

c. Reduce gas pressure in the interior of the landfill; and,

d. Not to interfere with the liner, leachate control system or final cover.

2. **Landfill Gas Migration Monitoring**

See Part K Operation Plan Section 9.0 Gas Monitoring for the landfill gas migration monitoring system.

3. **Gas Remediation Plan and Odor Remediation Plan**

3.1 Gas Monitoring

3.1.1 Landfill gas shall be monitored in accordance with Part K - Lena Road Landfill Operation Plan, Section 9.0 – Gas Monitoring, and as required by F.A.C. 62-701.500 (9). The landfill gas control system shall be operated, monitored and maintained in accordance with the 1999 "Manatee County, Lena Road Landfill Operation and Maintenance Manual for Landfill Gas & Environmental Products, Inc. Triton CF – 3000 Candle Flare (300-3000 SCFM)" or subsequent revisions or replacement manuals necessary for continued compliance.

3.1.2 The results of the quarterly monitoring as required by F.A.C. 62-701.530(2) (c), shall be submitted by the following dates each year:

Quarter 1 - April 15th	Quarter 3 - October 15th
Quarter 2 - July 15th	Quarter 4 - January 15th

3.1.3 The locations of the gas ambient monitoring points and soil monitoring probes are shown on Figure K-8 and listed on Figure K-9 which can be found in Part K Operation Plan. The points and probes shall be sampled at least quarterly for the Lower Explosive Limit (LEL) of methane, as described in F.A.C. 62-701.530(2).

3.1.4 Soil monitoring probes are to be clearly labeled and easily visible at all times. Sampling shall be conducted in the headspace of the monitoring probe without purging the gas before collecting the sample. If a probe is damaged or lost, the Department notified and the probe shall be replaced within 30 days.

3.2 Gas Remediation Plan

If combustible gas concentrations exceed 25% of the Lower Explosive Limits (LEL) inside structures both on and off the landfill site, or are greater than 100% at the property limit, the owner or operator shall:

- Immediately take all necessary steps to ensure protection of human health and notify the Department; and,
- Within seven days of detection, submit to the Department for approval a gas remediation plan for gas releases. The plan shall describe the nature and extent of the problem and the proposed remedy. The remedy may include some or all of the gas management system design contained in 62-701.530 (1). The remedy shall be completed within 60 days of the detection unless otherwise approved by the Department.

3.3 Odor Remediation Plan

The facility shall be operated to control objectionable odors in accordance with Rule 62-296.320(2), F.A.C. If gas concentrations cause objectionable odors beyond the landfill property, the owner of operator shall:

- On days when the landfill is receiving solid waste, the landfill manager, or his designated representative, shall drive around the perimeter of the landfill and smell for odors;
- Keep a log of the date, time and location of any odor complaints reported by landfill staff or from residents;
- Visit the location of the odor complaint and confirm the odor;
- Check to see that the flare is in operation;
- Check the flare operation record to see if the flare has been out of operation and when and for how long;
- Check the landfill surface emissions and penetrations to see if there is a gas leak from the landfill;
- Check to see if any wells are closed;
- Adjust the well heads to increase vacuum to well heads in the location of any suspected gas leaks;

- Implement a routine odor monitoring program to determine the timing and extent of any off-site odors; and,
- If the monitoring program confirms the existence of objectionable odors, submit to the Department for approval an odor remediation plan for the gas releases. The plan shall describe the nature and extent of the problem and the proposed remedy. The remedy shall be initiated within 30 days of approval.

4. **Landfill Gas Recovery Facility**

a. The information required in Rules 62-701.320(7) and 62-701.330(3) F.A.C. pertaining to permit application requirements is included as applicable in this application.

b. The information required in Rule 62-701.600(4), F.A.C., Closure Requirements is not relevant.

c. The landfill gas generation estimate for the Lena Road Class I Landfill was submitted with the Stage III Landfill Gas Collection System Construction Permit Application dated January 31, 2008. Condensate is drained back into the landfill and collected by the leachate collection system.

d. Condensate is not sampled and analyzed separately from the leachate.

e. It is anticipated that the landfill gas collection and flaring system will operate for 30 years during the long-term care period which begins after the landfill closure certification is accepted by the Department.

f. The landfill gas collection and flaring system construction and long-term care costs are included in the Landfill Closure and Long-Term Care Cost Estimate.

Part O: Landfill Closure Requirements

O 1. CLOSURE PERMIT REQUIREMENTS

a. Submittal of Application for Closure

An application for final closure with the Closure Plan will be submitted to the Department at least 90 days prior to final receipt of wastes.

b. Closure Plan

This Closure Plan is in accordance with Section 62-701.600, F.A.C.
The Closure Plan includes:

(1) Closure design
(2) Closure operation plan
(3) Long-term care Plan
(4) A demonstration that proof of financial responsibility for long-term care will be provided

O2 CLOSURE DESIGN PLAN

The landfill closure is shown on the Final Landfill Closure Drawings submitted with the previous permit application on November 11, 2009. There are no changes to this Closure Plan. A complete list of drawings is given on the cover page.

a. Plan Sheet showing Phases of site closing – It is anticipated that the remaining unclosed portions of the landfill will be closed in one phase.

b. Drawing showing existing topography and proposed final grades - The existing topography is provided on the Fill Sequencing Drawings in Appendix B to this permit application and proposed final grades are shown on Figure O-1, Final Grading and Drainage Plan.

c. Provisions to close units when they reach approved design dimensions – It is anticipated that the landfill will settle such that additional filling will be accomplished to achieve final grades immediately prior to final closure.

d. Final elevations before settlement - The final design elevations before settlement are shown on Figure O-1.

e. Side slope design - The landfill side slope between terraces is 4H:1V. Including 20-ft wide terraces, the overall side slope from the toe of the solid waste to the crest of the landfill is 5.5H:1V. This is much flatter than the 3H:1V maximum side slopes permitted by the FDEP regulations. The side slope and foundation analysis for the overall stability of the landfill was submitted with Part I, and showed that the landfill was stable.

f. Final Cover Installation Plans

(1) The CQA plan for installing and testing final cover is included in Appendix A of Part P in the Application submitted on November 11, 2009.

(2) Schedule for Installing Final Cover after Final Receipt of Waste - The schedule for installing final cover after final receipt of waste is approximately 2046.

(3) Description of drought-resistant species to be used in the vegetation cover - Bahia Sod is the drought-resistant species to be used in the vegetation cover.

(4) Top gradient design to maximize runoff and minimize erosion - The top gradient is 4.2% to maximize runoff and minimize erosion.

(5) Provisions for cover material to be used for final cover maintenance - A 100 cubic yard cover soil stockpile will be keep at the location shown on Final Closure Drawing C-2 to provide cover soil material for final cover maintenance.

g. Final Cover Design Requirements

A typical section of the final cover is shown on Final Closure Drawing C-5 in the Typical Final Cap Detail. The final cover will consist of:

- A 6-inch thick bedding for the geomembrane barrier layer. The bedding will consist of soil, which is primarily sand with at least 100% passing a ½ inch sieve. The intermediate cover may be used as bedding if it meets this gradation and is free of all vegetation, roots and other debris that may puncture the geomembrane.
- A geomembrane barrier layer, which will be a 40-mil LLDPE geomembrane liner. The geomembrane will be textured on the side slopes, and smooth on all slopes flatter than 5H:1V. The LLDPE geomembrane used in the barrier layer will be a semi-crystalline thermoplastic with at least 40 mils average thickness as defined by method GRI GM13, with a maximum water vapor transmission rate of 2.4 g/(m^2xday), have a chemical and physical resistance to materials it may come in contact with and withstand exposure to the natural environmental stresses and forces throughout the installation, seaming process and settlement of the waste during the closure and long-term care period.
- A double composite geonet with an 8-oz non-woven geotextile for protection of the barrier geomembrane and drainage of the protective soil layer.
- A 24-inch protective soil layer, which will consist primarily of sand with 100% passing the ½ inch sieve.
- Bahia sod will be placed over the protective soil as a drought-resistant species for the vegetative cover.

h. Proposed Method of Stormwater Control - Collecting runoff in terraces at approximately El. 55, El. 75, El. 95 and El. 110 will control stormwater. The

terrace will be sloped to stormwater inlets approximately 300 feet apart. The stormwater inlets will transfer the runoff to polyethylene stormwater pipes that will safely carry the stormwater to the toe of the landfill without erosion. At the end of the stormwater pipe there will be an energy dissipator to transfer the runoff to the perimeter stormwater swale without erosion. The location for the stormwater inlets and pipes are shown on Final Closure Drawing C-2 Final Grading and Drainage Plan. Typical sections and details for the storm water control system are shown on Drawings C-3, C-4 and C-5.

i. Proposed method of Access Control - The landfill property is fenced as a method of access control. After final closure is complete, the fence will be maintained and the gate locked as a method of access control.

j. Description of the Proposed or Existing Gas Management System, which Complies with Rule 62-701.530, FAC - There is a landfill gas collection system and flare for the Landfill. This system will be expanded as the landfill is filled. The landfill gas collection system is shown on Final Closure Drawings C-6, C-7 and C-8.

O 3. CLOSURE OPERATION PLAN (62-701.600(4) FAC)

a. Detailed description of actions, which will be taken to close the landfill

The owner or operator is responsible for the closure procedures as follows:

1. Send out the notice that landfill will close.
2. Apply for final closure of the landfill at least 90 days before the date when wastes will no longer be accepted. The application shall be on Form 62-701.900(1). If the landfill is in operation under a Department permit, the owner or operator shall request a modification of the permit in lieu of submitting a closure permit application. The application or request shall include a closure plan.
3. Prepare a request for proposals from contractors to construct the landfill closure as permitted by FDEP.
4. Award a contract to construct the closure.
5. The contractor will:
    - Clear vegetation from the landfill surface where the cap will be installed
    - Regrade and fill depression on the landfill surface to get the slopes as shown on the final closure drawing and eliminate any depressions that may pond water
    - Proof roll the landfill surface and correct grades as needed
    - Install any remaining landfill gas extraction wells required by the closure
    - Place the 6-inch bedding for the geomembrane
    - Place the geomembrane
    - Place the bonded composite geonet
    - Install the landfill gas laterals and connect the landfill gas extraction wells to the header.
    - Place the stormwater inlets, downcommer pipes and energy dissipators

- Place the 24-ich layer of protective soil cover
- Place the sod
- Prepare the record construction drawings with the final landfill topography

b. The closure procedures required by 62-701.610 FAC, shall be as follows:
    - The Department shall specify in the closure permit which particular closing steps or operations must be inspected and approved by the Department before proceeding with subsequent closure actions
    - After closure is completed, the owner or operator shall prepare a final survey or aerial mapping of the closed landfill.
    - A certification of closure construction completion, signed, dated and sealed by a professional engineer independent of the contractor, shall be provided to the Department upon completion of closure. All substantial deviations from the permitted closure plan shall be noted.
    - After closure operations are inspected and approved by the Department, the landfill 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 landfill is located. The declaration shall include a legal description of the property on which the landfill is located and a site plan specifying the area actually filled with solid waste. The declaration shall also include a notice that any future owner or user of the site should consult with the Department prior to planning or initiating any activity involving the disturbance of the landfill cover, monitoring systems or other control structures. A certified copy of the documentation shall be filed with the Department.
    - Upon receipt of the documents required, which are the survey, closure certification and declaration to the public, the Department shall within 30 days acknowledge by letter to the facility operator that notice of termination of operation and closing of the facility has been received. If the entire landfill has been closed, the date of this letter shall be the official date of landfill closing for the purpose of determining the long-term care period. If only a portion of the landfill has been closed, the long-term care period will begin upon the closing of the entire landfill, unless the portion, which has been closed, can be monitored and maintained separately from the rest of the landfill. The date of this letter shall be the official date of landfill closing for the purpose of determining the long-term care period.

Time schedule for completion of closing and long-term care - The time schedule for closure of the landfill is anticipated when Stage II, the final landfill stage, is projected to be full in 2046. Due to the size and complexity of the closure, the final closure work will take two years. The closure should be completed by January 2048, and the 30-year long-term care and monitoring will continue until 2078 or until landfill stabilization is documented.

c. Describe proposed method for demonstrating financial responsibility - The proposed method for demonstrating financial responsibility is given in Part R of this application.

d. Development and Implementation of the Water Quality Monitoring Plan Required in Rule 62-701.510 FAC - The Water Quality Monitoring Plan is included in Part L of this application.

e. Development and implementation of gas management system required in Rule 62-701.530 FAC is described in Part N of this application.

O.4. CERTIFICATION OF CLOSURE CONSTRUCTION COMPLETION

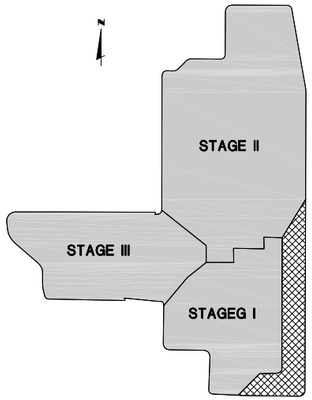
1. Survey monuments - The final elevation of this landfill is more than 20 feet above the natural land surface, so no survey monuments are required. This is submitted as "N/A".

2. Final survey report – A final survey will be submitted per 62-701.600(6)(b), FAC.

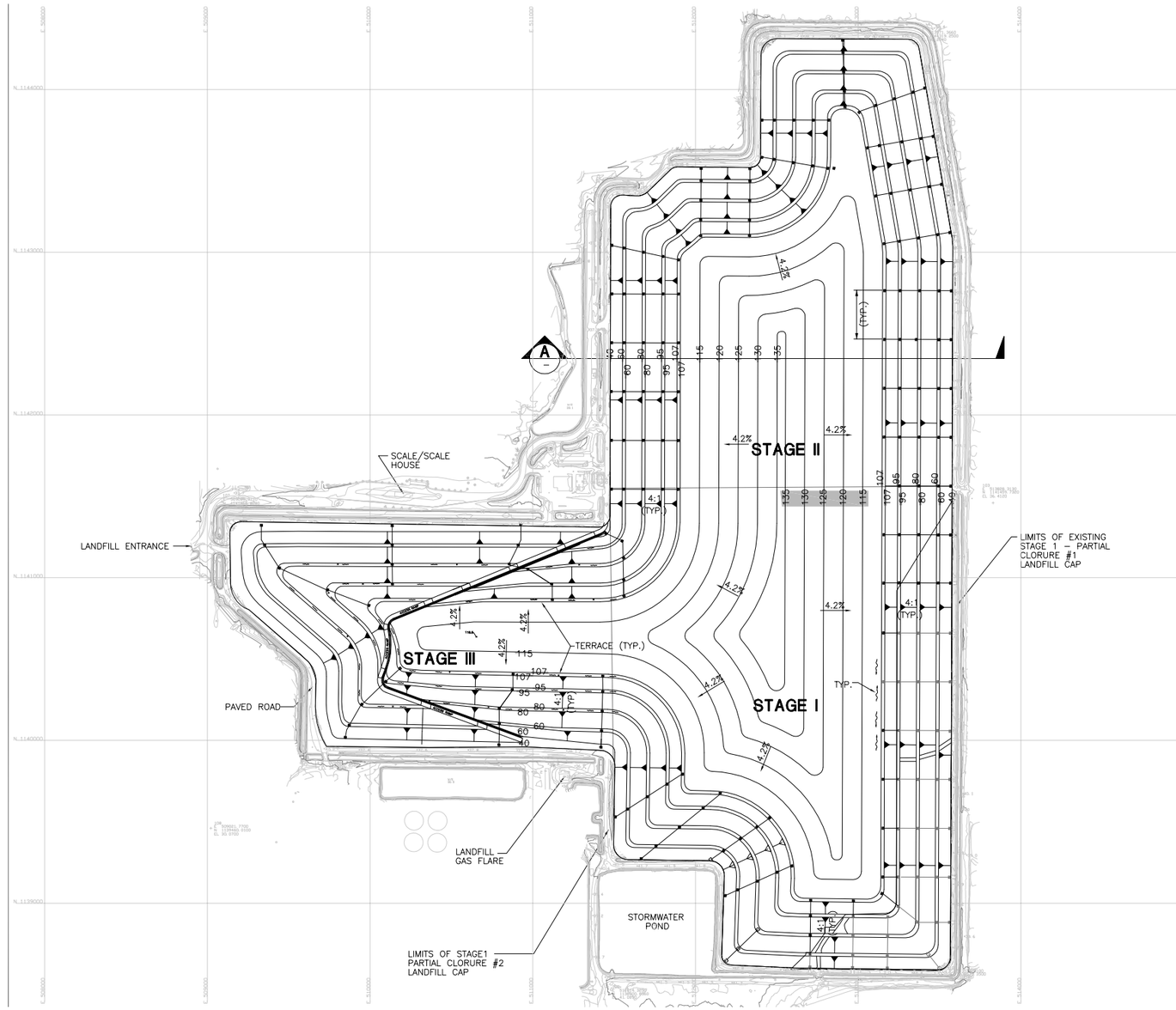
3. Declaration to the public – After the Department approves the closure, the landfill owner shall file a declaration to the public in the deed records in the office of the county clerk of the county in which the landfill is located per 62-701.610(5), FAC.

4. Official date of closing – The official date of closing shall be determined per 62-701.610(6). Upon receipt of the documents required in 62-701.610, FAC subsections (3), (4) and (5) the Department shall within 30 days acknowledge by letter to the facility operator that notice of termination of operations and closing of the facility has been received. The date of this letter will be the official date of closing.

5. Justification for and Detailed Description of Procedures to be followed for Temporary Closure of the Landfill - The landfill owner has no intentions to temporarily close the landfill.



LANDFILL CLOSURE PHASING PLAN
N.T.S.



GRAPHIC SCALE
0 150 300 600
(IN FEET)
1 inch = 300 ft.

LEGEND:

- PROPOSED FINAL CONTOURS
- EXISTING CONTOURS
- TERRACE
- STORMWATER DROP INLET
- STORMWATER DRAIN PIPE
- SLOPE BREAK
- SUFACE WATER FLOW
- FINAL CAP IN PLACE AREA
- LIMITS OF STAGE I PARTIAL CLOSURE #2

NOTE:

ORDER OF FILLING:

1. STAGE I
2. STAGE III
3. STAGE II

ATKINS	MANATEE COUNTY - LENA ROAD LANDFILL OPERATIONS PERMIT RENEWAL 2015	FINAL GRADING AND DRAINAGE PLAN	FIG. O-1

Part P Other Closure Procedures (62-701.610, FAC)

1. **Use of closed landfill area** – This landfill is not closed. The Manatee County has no plans to use the closed landfill area. After closure, if the Manatee County decides to use the closed landfill area, the Manatee County shall seek consultation with the Department per 62-701.610(1), FAC.

2. **Relocation of wastes** – This section applies to closed landfills. Manatee County does not plan to relocate waste after the landfill is closed. If after closure Manatee County decides to relocate waste, Manatee County will request permission from the Department to relocate waste per 62-701.610(2), FAC.

Part Q: Long Term Care Requirement (62-701.620, FAC)

1. **Maintaining the Gas Collection and Monitoring System** – After closure the facility operator shall maintain the gas collection and monitoring system for the long-term care period of the landfill per 62-701.620 (5), FAC.

2. **Stabilization Report Requirements** – Every five years after issuance of a permit for long-term care, the permittee shall submit a report to the Department that addresses stabilization with the information required in 62-701.620 (6), FAC.

3. **Right-of Access** – The landfill owner or operator shall possess 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 this 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 per 62-701.620 (7), FAC.

4. **Replacement of monitoring devices** - If a monitoring well or other device required by the monitoring plan is destroyed or fails to operate for any reason, the landfill owner or operator shall, immediately upon discovery, notify the Department in writing. All inoperative monitoring devices shall be replaced with functioning devices within 60 days of the discovery of the malfunctioning unit unless the landfill owner or operator is notified otherwise in writing by the Department per 62-701.620 (8), FAC.

5. **Completion of Long-term Care** - Following completion of the long-term care period for each solid waste management unit, the owner or operator shall notify the Department 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 per 62-701.620 (9), FAC.

PART R FINANCIAL ASSURANCE REQUIREMENTS

1 COST ESTIMATES

The closure and long-term care cost estimate was submitted as Attachment R-1.

2 ANNUAL COST ADJUSTMENTS

Annual cost adjustments for closure and long-term care are submitted to the Department based on inflation and changes in the closing, long-term care and corrective action plans in accordance with 62-701.630. The annual cost adjustment will be submitted by the date given in the permit.

3 FUNDING MECHANISM

Manatee County uses the "Financial Test" method for providing proof of financial assurance.

4 DELAYING PROVIDING DOCUMENTATION

This is not applicable since Manatee County does not propose delaying providing documentation.

ATTACHMENT R-1

Atkins North America, Inc.
100 Paramount Drive, Suite 207
Sarasota, Florida 34232

Telephone: +1.941.378.0272
Fax: +1.941.371.7297

www.atkinsglobal.com/northamerica

October 22, 2015

Mr. Bryan White
Manatee County Lena Road Landfill
3333 Lena Road
Bradenton, FL 34211

RE: Manatee County Lena Road Class 1 Landfill
Recalculated Closure and Long-term Care Cost Estimate for 2015

Dear Mr. White:

Enclosed are five final copies of the recalculated closure and long-term care cost estimate for financial assurance at the Lena Road Landfill for the year 2015. The re-calculated costs estimate for the Lena Road Landfill closure is $36,795,926 for the total estimated closing cost and $441,900 for the annual long care cost, for a 30 year total cost of $13,257,007.

The following attachments are provided:

A. FDEP Closing Cost estimating Form
B. Supporting explanation of the estimates with the following attachments:
    1. County quote for soil
    2. RS Means estimate for spreading soil
    3. RS Means estimate for compaction
    4. 2009 Desoto County closure construction bid prices
    5. County quote for sod
    6. County quote for storm water pipe and RS Means pipe pricing
    7. FDOT pricing tables for stormwater structures
    8. Updated costs estimate for remaining gas collection system construction
    9. 2011 County Bid costs for gas collection system construction
    10. County quote for water quality monitoring costs
    11. County invoice for jetting of the LCRS
    12. RS Means estimate for mowing large areas
    13. RS Means estimate for finished grading
    14. Atkins estimates for reports and permit renewal application

We appreciate the opportunity to prepare this estimate for Manatee County.

Sincerely,

John A. Banks, PE
Project Director

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: Manatee County Lena Road Class 1 Landfill WACS ID: SWD4144795
Permit Application or Consent Order No.: 39884-018-SO/01 Expiration Date: _____
Facility Address: 3333 Lena Road, Bradenton, FL 34211
Permittee or Owner/Operator: Manatee County Government- Utilities Department
Mailing Address: 3333 Lena Road, Bradenton, FL 34211

Latitude: 27° 28' 10" Longitude: 82° 26' 35"
Coordinate Method: US State Plane Datum: NAD 1983 (10)
Collected by: Patrick McCormack, P.S.M. Company/Affiliation: Atkins (PBS&J)

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
Stage 1 (30 ac Closed)	132	1972	68	25		
Stage III	66	2004	10	1		
Stage II	118	2016	30	30		

Total disposal unit acreage included in this estimate: Closure: 286 Long-Term Care: 316

Facility type: (Check all that apply)
☒ Class I ☐ Class III ☐ C&D Debris Disposal
☐ Other: _____

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)

Signature	Address
Name & Title	City, State, Zip Code
Date	E-Mail Address
Telephone Number	

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 ex

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	0	$0.00	
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY	0	$0.00	
Placement and Spreading	CY	462,000	$2.42	$1,118,040.00
Compaction	CY	462,000	$0.57	$263,340.00
Off-Site Material	CY	462,000	$3.70	$1,709,400.00
Delivery	CY	462,000	$3.70	$1,709,400.00
			Subtotal Slope and Fill:	$4,800,180.00
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY	0	$0.00	
Synthetics - 40 mil	SY	1,384,24	$4.05	$5,606,172.00
Synthetics - GCL	SY	0	$0.00	
Synthetics - Geonet	SY	1,384,24	$5.13	$7,101,151.20
Synthetics - Other (explain)		0	$0.00	
			Subtotal Cover Material:	$12,707,323.20
4. Top Soil Cover:				
Off-Site Material	CY	923,000	$3.50	$3,230,500.00
Delivery	CY	923,000	$3.50	$3,230,500.00
Spread	CY	923,000	$2.47	$2,279,810.00
			Subtotal Top Soil Cover:	$8,740,810.00
5. Vegetative Layer				
Sodding	SY	1,384,24	$1.60	$2,214,784.00
Hydroseeding	AC	0	$0.00	
Fertilizer	AC	0	$0.00	
Mulch	AC	0	$0.00	
Other (explain)		0	$0.00	
			Subtotal Vegetative Layer:	$2,214,784.00
6. Stormwater Control System:				
Earthwork	CY	0	$0.00	
Grading	SY	0	$0.00	
Piping	LF	18,900	$26.27	$496,503.00
Ditches	LF	0	$0.00	
Berms	LF	0	$0.00	
Control Structures	EA	216	$3,153.00	$681,048.00
Other (explain)		0	$0.00	
			Subtotal Stormwater Control System:	$1,177,551.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA	0	$0.00	
Pipe and Fittings	LF	0	$0.00	
Monitoring Probes	EA	0	$0.00	
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	
8. Active Gas Extraction Control:				
Traps	EA	0	$0.00	
Sumps	EA	0	$0.00	
Flare Assembly	EA	0	$0.00	
Flame Arrestor	EA	0	$0.00	
Mist Eliminator	EA	0	$0.00	
Flow Meter	EA	0	$0.00	
Blowers	EA	0	$0.00	
Collection System	LF	0	$0.00	
Other (explain) See Attachment 8 for estimate	LS	1	$3,384,169.00	$3,384,169.00
			Subtotal Active Gas Extraction Control:	$3,384,169.00
9. Security System:				
Fencing	LF	0	$0.00	
Gate(s)	EA	0	$0.00	
Sign(s)	EA	0	$0.00	
			Subtotal Security System:	
10. Engineering:				
Closure Plan Report	LS	1	$270,434.00	$270,434.00
Certified Engineering Drawings	LS	1	$108,150.00	$108,150.00
NSPS/Title V Air Permit	LS	1	$37,852.00	$37,852.00
Final Survey	LS	1	$21,630.00	$21,630.00
Certification of Closure	LS	1	$19,467.00	$19,467.00
Other (explain)		0	$0.00	
			Subtotal Engineering:	$457,533.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor	400	$165.0(	400	$165.0(	$132,000.00
On-Site Engineer	2,000	$120.0(	2,000	$120.0(	$480,000.00
Office Engineer	400	$100.0(	400	$100.0(	$80,000.00
On-Site Technician	0	$0.00	2,000	$80.00	$160,000.00
Other (explain)	0	$0.00	0	$0.00	

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$115,469.00	$115,469.00
			Subtotal Professional Services:	$967,469.00

	Subtotal of 1-11 Above:	$34,449,819.20
12. Contingency 5 % of Subtotal of 1-11 Above		$1,722,490.96
	Subtotal Contingency:	$1,722,490.96
	Estimated Closing Cost Subtotal:	$36,172,310.16

Description	Total Cost
13. Site Specific Costs	
Mobilization	$500,000.00
Waste Tire Facility	$36,116.00
Materials Recovery Facility	
Special Wastes	$87,500.00
Leachate Management System Modification	
Other (explain)	
Subtotal Site Specific Costs:	$623,616.00

TOTAL ESTIMATED CLOSING COSTS ($): $36,795,926.16

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	0		
Semi-Annually	2	29	$308.63	$17,900.54
Annually	1	0		
			Subtotal Groundwater Monitoring:	$17,900.54
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12	0		
Quarterly	4	0		
Semi-Annually	2	2	$1,725.90	$6,903.60
Annually	1	0		
			Subtotal Surface Water Monitoring:	$6,903.60
3. Gas Monitoring [62-701.400(10)]				
Monthly	12	0		
Quarterly	4	20	$76.25	$6,100.00
Semi-Annually	2	0		
Annually	1	0		
			Subtotal Gas Monitoring:	$6,100.00
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12	0		
Quarterly	4	0		
Semi-Annually	2	0		
Annually	1	0		
Other (explain) _____		0		
			Subtotal Leachate Monitoring:	

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF	35,176	$0.78	$27,437.28
Sumps, Traps	EA			
Lift Stations	EA	4	$1,000.00	$4,000.00
Cleaning	LS	1	$1,000.00	$1,000.00
Tanks	EA	0		

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY	0	$0.00	
Sludge Removal	CY	0	$0.00	
Aeration Systems				
Floating Aerators	EA	0	$0.00	
Spray Aerators	EA	0	$0.00	
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon	6,063	$4.44	$26,919.72
		Subtotal Leachate Collection / Treatment Systems Maintenance:		$59,357.00
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF	2	$500.00	$1,000.00
Replacement	EA			
Abandonment	EA			
		Subtotal Groundwater Monitoring Well Maintenance:		$1,000.00
7. Gas System Maintenance				
Piping, Vents	LF	100	$60.00	$6,000.00
Blowers	EA	0	$0.00	
Flaring Units	EA	1	$20,000.00	$20,000.00
Meters, Valves	EA	0	$0.00	
Compressors	EA	0	$0.00	
Flame Arrestors	EA	0	$0.00	
Operation	LS	1	$60,000.00	$60,000.00
		Subtotal Gas System Maintenance:		$86,000.00
8. Landscape Maintenance				
Mowing	AC	350	$261.36	$91,476.00
Fertilizer	AC	0	$0.00	
		Subtotal Landscape Maintenance:		$91,476.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	500	$1.60	$800.00
Regrading	AC	1	$1,307.00	$1,307.00
Liner Repair	SY	25	$100.00	$2,500.00
Clay	CY	0	$0.00	
		Subtotal Erosion Control and Cover Maintenance:		$4,607.00
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	$6,000.00	$6,000.00
		Subtotal Storm Water Management System Maintenance:		$6,000.00
11. Security System Maintenance				
Fences	LS	1	$1,000.00	$1,000.00
Gate(s)	EA	1	$500.00	$500.00
Sign(s)	EA	1	$200.00	$200.00
		Subtotal Security System Maintenance:		$1,700.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	$17,168.00	$17,168.00
			Subtotal Utilities:	$17,168.00
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR	25	$165.00	$4,125.00
On-Site Engineer	HR	100	$100.00	$10,000.00
Office Engineer	HR	10	$120.00	$1,200.00
OnSite Technician	HR	250	$87.00	$21,750.00
Materials	LS	1	$0.00	
	Subtotal Leachate Collection/Treatment Systems Operation:			$37,075.00
14. Administrative				
P.E. Supervisor	HR	25	$165.00	$4,125.00
On-Site Engineer	HR	10	$100.00	$1,000.00
Office Engineer	HR	100	$120.00	$12,000.00
OnSite Technician	HR	250	$87.00	$21,750.00
Other _____		1	$12,000.00	$12,000.00
			Subtotal Administrative:	$50,875.00
			Subtotal of 1-14 Above:	$386,162.14
15. Contingency	5	% of Subtotal of 1-14 Above		$19,308.11
			Subtotal Contingency:	$19,308.11

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
Annual Reports to FDEP		1	$30,000.00	$30,000.00
Long Term Care Permit Renewel		0.05	$50,000.00	$2,500.00
Title V Surface Emission Monitoring		1	$3,930.00	$3,930.00
			Subtotal Site Specific Costs:	$36,430.00
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	$441,900.25
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	$13,257,007.41

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.

JOHN A. BANKS, JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature

John Banks, Project Director
Name and Title (please type)

Date

39397
Florida Registration Number
(please affix seal)

Atkins-100 Paramount Drive, Suite 207
Mailing Address

Sarasota, FL 34232
City, State, Zip Code

john.banks@atkinsglobal.com
E-Mail address (if available)

941-225-4825
Telephone Number

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant

Mike Gore, Director
Name and Title (please type)

mike.gore@mymanatee.org
E-Mail address (if available)

4410 66th Street West
Mailing Address

Bradenton, FL 34210
City, State, Zip Code

941-792-8811
Telephone Number

LENA ROAD CLASS I LANDFILL CLOSURE COST ESTIMATE

Manatee County has installed the final cap on 30 acres of the Stage I Landfill. Thus the closure cost estimate is for 286 acres. The Long-term care cost estimate is for 316 acres.

1. Proposed monitoring wells – Not applicable. Monitoring wells exist at time of closure.

2. Slope and Fill (bedding layer between waste and barrier layer) – The remaining landfill foot print for closure is 286 acres, which multiplied by 43,560 square feet per acre, equals 12,458,160 square feet. It is assumed that an average of one foot of fill is required to level up the landfill surface and provide a minimum of six inches of bedding soil for the geomembrane. The volume of in-place soil is estimated at 12,458,160 square feet times 1 foot thick divided by 27 cubic feet per cubic yard, which equals 461,413 cubic yards, which is rounded to 460,000 cubic yards. Quote for delivery of fill to the top of the landfill is $6.44 per cubic yard based on a recent bid for cover soil (See Attachment 1, Purchase Order dated 02/11/14). The unit cost was increase by 15% to $7.40 per cubic yard in-place to allow for the difference between truck cubic yards and in-place cubic yards. In the cost estimate sheet, this is broken down into $3.70 per cubic yard for material and $3.70 per cubic yard for delivery. The cost for placement and spreading by dozer comes from page 1098 of RS Means (Attachment 2), and for compaction by vibrating roller, the cost is shown on page 1108 (Attachment 3).

3. Cover Material (Barrier Layer) – The remaining landfill footprint is 286 acres, which multiplied by 43,560 square feet per acre and divided by 9 square feet per square yard, equals 1,384,240 square yards. The proposed barrier layer is a 40 mil LLDPE geomembrane, textured on the side slopes, and smooth on the top. A high flow capping geocomposite is required on the landfill side slopes over the geomembrane and under the cover soil to drain seepage through the cover soil and stabilize the slope. Based on a 2009 bid for Desoto County Landfill Zone Closure of Zone 2 and Partial Zone 3, (Attachment 4) which was increased at 1.5% per year, the unit price is $0.45/SF ($4.05/SY) for the 40 mil LLDPE geomembrane and $0.57/SF ($5.13/SY) for the high flow capping geocomposite. The unit prices are installed prices and include material and labor.

4. Top Soil Cover - The landfill footprint is 286 acres, which multiplied by 43,560 square feet per acre, equals 12,458,160 square feet. Two feet of fill is required to cover the geomembrane. The volume of in-place soil is estimated at 12,458,160 square feet times 2-feet thick divided by 27 cubic feet per cubic yard, which equals 923,000 cubic yards. The unit cost for off-site material and delivery is the same as in Item 2.

5. Vegetative Layer – The vegetative layer will be sod. The quantity is 1,384,240 square yards, which is the same as the barrier layer estimated in Item 3. The estimated unit

Exhibit 1

County Quote for Soil

FY 13

/ PURCHASING

URT
E DEPARTMENT

)
FOR EACH SHIPMENT

PURCHASE ORDER NO.:	P1300665
PAGE:	Page 1 of 1
ORDER DATE:	02/05/13
DATE REQUIRED:	
TERMS:	NET 45
SHIP VIA:	BESTWAY
F.O.B.:	DESTINATION
CONFIRMATION TO:	TASK 131048CD

VENDOR

V001630 (941) 907-0041
SMR AGGREGATES INC
5875 QUARRY DR
SARASOTA, FL 34240

mark.avery@smrranch.com

SHIP TO

S0305
UTILITY OPERATIONS
LANDFILL OPERATIONS
3333 LENA ROAD
BRADENTON, FL 34202
Requested by:Jim Bokish

ITEM	QUANTITY	U/M	DESCRIPTION	UNIT PRICE	TOTAL PRICE
			PRICING IN ACCORDANCE WITH THE TERMS, CONDITIONS, AND SPECIFICATIONS OF IFB #13-0297CD AND SUBMITTAL DATED 12/21/2012 SIGNED BY MARK AVERY AS APPROVED IN ACCORDANCE WITH THE MANATEE COUNTY PURCHASING CODE OF LAW CHAPTER 2-26 ON 2/4/2013. ** THE VENDOR SHALL CONTACT BRYAN WHITE, MANATEE COUNTY UTILTIES DEPARTMENT, AT 941-792-8811 EXT 8008 TO COORDINATE THE START UP AND DELIVERY OF PRODUCT.		
			** PAPERLESS PURCHASE ORDER ** * NO HARD COPY WILL BE SENT * ** TO CHANGE YOUR EMAIL, ** *** CONTACT THE BUYER *** **********		
001	915,000	TC	SOLID WASTE COVER DIRT, ON AN AS REQUIRED BASIS, TO BE DELIVERED TO THE LENA ROAD LANDFILL PER THE TERMS, CONDITIONS, AND SPECIFICATIONS OF IFB #13-0297CD AT A UNIT COST OF $6.44 PER CUBIC YARD (ESTIMATED QUANTITY OF 142,000 CUBIC YARDS)	1.00	915,000.00
	480-C010900-552000			915,000.00	

TOTAL

915,000.00

Requisition#: R054111
Reference #: IFB #13-0297CD **Buyer:** CHRIS DALEY CPPB CONTRCT SPECIALIST (941) 749-3048

See Reverse Side for Terms and Conditions

Approved By:

A PACKING LIST MUST ACCOMPANY EVERY SHIPMENT.
FLORIDA SALES TAX EXEMPT. CERT. NO. 85-8012622206C-6.
F.E.T. EXEMPT CERT.NO. 59-78-0089 K.
NO DEVIATION IN THE TERMS AND CONDITIONS OR SPECIFICATIONS OF THIS PURCHASE CONTRACT SHALL BE MADE UNLESS SPECIFICALLY AUTHORIZED BY MANATEE COUNTY PURCHASING.

Exhibit 2

RS Means Estimate for Spreading Soil

31 23 23.16 Fill By Borrow and Utility Bedding

		Crew	Daily Output	Labor-Hours	Unit	2015 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**FILL BY BORROW AND UTILITY BEDDING**									
0015	Fill by borrow, load, 1 mile haul, spread with dozer									
0020	for embankments	B-15	1200	.023	L.C.Y.	12.40	1	2.31	15.71	17.80
0035	Select fill, for shoulders & embankments	"	1200	.023	"	21	1	2.31	24.31	27
0040	Fill, for hauling over 1 mile, add to above per C.Y., see Section 31 23 23.20				Mile				1.41	1.73
0049	Utility bedding, for pipe & conduit, not incl. compaction									
0050	Crushed or screened bank run gravel	B-6	150	.160	L.C.Y.	25.50	6.60	2.43	34.53	41.50
0100	Crushed stone 3/4" to 1/2"		150	.160		23.50	6.60	2.43	32.53	39.50
0200	Sand, dead or bank		150	.160		17.85	6.60	2.43	26.88	33
	Compacting bedding in trench	A-1D	90	.089	E.C.Y.		3.34	.40	3.74	5.95
	If material source exceeds 2 miles, add for extra mileage.									
	See Section 31 23 23.20 for hauling mileage add.									

31 23 23.17 General Fill

		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010	**GENERAL FILL**									
0011	Spread dumped material, no compaction									
0020	By dozer, no compaction	B-10B	1000	.012	L.C.Y.		.56	1.39	1.95	2.42
0100	By hand	1 Clab	12	.667	"		25		25	41
0150	Spread fill, from stockpile with 2-1/2 C.Y. F.E. loader									
0170	130 H.P., 300' haul	B-10P	600	.020	L.C.Y.		.93	1.98	2.91	3.66
0190	With dozer 300 H.P., 300' haul	B-10M	600	.020	"		.93	3.16	4.09	4.96
0500	Gravel fill, compacted, under floor slabs, 4" deep	B-37	10000	.005	S.F.	.42	.19	.02	.63	.79
0600	6" deep		8600	.006		.63	.22	.02	.87	1.07
0700	9" deep		7200	.007		1.05	.27	.02	1.34	1.60
0800	12" deep		6000	.008		1.47	.32	.03	1.82	2.17
1000	Alternate pricing method, 4" deep		120	.400	E.C.Y.	31.50	15.90	1.31	48.71	62
1100	6" deep		160	.300		31.50	11.95	.98	44.43	55
1200	9" deep		200	.240		31.50	9.55	.79	41.84	51
1300	12" deep		220	.218		31.50	8.70	.72	40.92	49.50
1500	For fill under exterior paving, see Section 32 11 23.23									
1600	For flowable fill, see Section 03 31 13.35									
9000	Minimum labor/equipment charge	1 Clab	4	2	Job		75		75	123

31 23 23.20 Hauling

		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010	**HAULING**									
0011	Excavated or borrow, loose cubic yards									
0012	no loading equipment; including hauling, waiting, loading/dumping									
0013	time per cycle (wait, load, travel, unload or dump & return)									
0014	8 C.Y. truck, 15 MPH ave, cycle 0.5 miles, 10 min. wait/Ld./Uld.	B-34A	320	.025	L.C.Y.		1	1.29	2.29	3.02
0016	cycle 1 mile		272	.029			1.18	1.51	2.69	3.56
0018	cycle 2 miles		208	.038			1.54	1.98	3.52	4.65
0020	cycle 4 miles		144	.056			2.23	2.86	5.09	6.75
0022	cycle 6 miles		112	.071			2.86	3.67	6.53	8.65
0024	cycle 8 miles		88	.091			3.64	4.67	8.31	11
0026	20 MPH ave, cycle 0.5 mile		336	.024			.95	1.22	2.17	2.89
0028	cycle 1 mile		296	.027			1.08	1.39	2.47	3.27
0030	cycle 2 miles		240	.033			1.33	1.71	3.04	4.03
0032	cycle 4 miles		176	.045			1.82	2.34	4.16	5.50
0034	cycle 6 miles		136	.059			2.36	3.02	5.38	7.15
0036	cycle 8 miles		112	.071			2.86	3.67	6.53	8.65
0044	25 MPH ave, cycle 4 miles		192	.042			1.67	2.14	3.81	5.05
0046	cycle 6 miles		160	.050			2	2.57	4.57	6.05
0048	cycle 8 miles		128	.063			2.50	3.21	5.71	7.55
0050	30 MPH ave, cycle 4 miles		216	.037			1.48	1.90	3.38	4.48

Exhibit 3

RS Means Estimate for Compaction

	3.23 Compaction	Crew	Daily Output	Labor-Hours	Unit	2015 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**COMPACTION**									
5000	Riding, vibrating roller, 6" lifts, 2 passes	B-10Y	3000	.004	E.C.Y.		.19	.18	.37	.50
5020	3 passes		2300	.005			.24	.24	.48	.65
5040	4 passes		1900	.006			.29	.29	.58	.79
5050	8" lifts, 2 passes		4100	.003			.14	.13	.27	.37
5060	12" lifts, 2 passes		5200	.002			.11	.11	.22	.29
5080	3 passes		3500	.003			.16	.16	.32	.42
5100	4 passes		2600	.005			.21	.21	.42	.57
5600	Sheepsfoot or wobbly wheel roller, 6" lifts, 2 passes	B-10G	2400	.005			.23	.50	.73	.92
5620	3 passes		1735	.007			.32	.70	1.02	1.28
5640	4 passes		1300	.009			.43	.93	1.36	1.70
5680	12" lifts, 2 passes		5200	.002			.11	.23	.34	.43
5700	3 passes		3500	.003			.16	.34	.50	.63
5720	4 passes		2600	.005			.21	.46	.67	.85
7000	Walk behind, vibrating plate 18" wide, 6" lifts, 2 passes	A-1D	200	.040			1.50	.18	1.68	2.67
7020	3 passes		185	.043			1.63	.20	1.83	2.89
7040	4 passes		140	.057			2.15	.26	2.41	3.80
7200	12" lifts, 2 passes, 21" wide	A-1E	560	.014			.54	.08	.62	.97
7220	3 passes		375	.021			.80	.12	.92	1.46
7240	4 passes		280	.029			1.07	.17	1.24	1.94
7500	Vibrating roller 24" wide, 6" lifts, 2 passes	B-10A	420	.029			1.32	.43	1.75	2.59
7520	3 passes		280	.043			1.98	.64	2.62	3.89
7540	4 passes		210	.057			2.64	.86	3.50	5.15
7600	12" lifts, 2 passes		840	.014			.66	.21	.87	1.30
7620	3 passes		560	.021			.99	.32	1.31	1.94
7640	4 passes		420	.029			1.32	.43	1.75	2.59
8000	Rammer/tamper, 6" to 11", 4" lifts, 2 passes	A-1F	130	.062			2.31	.38	2.69	4.21
8050	3 passes		97	.082			3.10	.52	3.62	5.65
8100	4 passes		65	.123			4.63	.77	5.40	8.45
8200	8" lifts, 2 passes		260	.031			1.16	.19	1.35	2.11
8250	3 passes		195	.041			1.54	.26	1.80	2.81
8300	4 passes		130	.062			2.31	.38	2.69	4.21
8400	13" to 18", 4" lifts, 2 passes	A-1G	390	.021			.77	.14	.91	1.42
8450	3 passes		290	.028			1.04	.19	1.23	1.91
8500	4 passes		195	.041			1.54	.29	1.83	2.85
8600	8" lifts, 2 passes		780	.010			.39	.07	.46	.71
8650	3 passes		585	.014			.51	.10	.61	.95
8700	4 passes		390	.021			.77	.14	.91	1.42
9000	Water, 3000 gal. truck, 3 mile haul	B-45	1888	.008		1.22	.38	.48	2.08	2.48
9010	6 mile haul		1444	.011		1.22	.50	.63	2.35	2.83
9020	12 mile haul		1000	.016		1.22	.73	.91	2.86	3.50
9030	6000 gal. wagon, 3 mile haul	B-59	2000	.004		1.22	.16	.25	1.63	1.88
9040	6 mile haul	"	1600	.005		1.22	.20	.31	1.73	2
9900	Minimum labor/equipment charge	1 Clab	4	2	Job		75		75	123

31 23 23.24 Compaction, Structural

0010	**COMPACTION, STRUCTURAL**									
0020	Steel wheel tandem roller, 5 tons	B-10E	8	1.500	Hr.		69.50	19.70	89.20	133

Exhibit 4

2009 Desoto County Closure Construction Bid Prices

4. DeSoto County Landfill Zone Closure of Zone 2 and Partial Zone 3 Bid Tabulation

	DeSoto County Landfill Zone Closure of Zone 2 and Partial of Zone 3 Bid Tabulation				
				Comanco	
I Item No.	II Item Description	III Unit of Measure	IV Estimated Quanity	Unit Price ($)	Total Price ($)
001	Mobilization/Demobilization	LS	1	$73,500.00	$ 73,500.00
002	Site Clearing/Grubbing and Scrapting	AC	8	$ 3,500.00	$ 28,000.00
003	survey	LS	1	$35,000.00	$ 35,000.00
004	Temporary Erosion and Sedimentation Control	LS	1	$ 4,000.00	$ 4,000.00
005	Demolition of Gabion Basker Downchutes	LS	1	$ 7,000.00	$ 7,000.00
006	Excavation of Unsuitable Soil/Waste (Intermediate Cover Soil Layer/Grading Layer)	CY	18,044	$ 1.75	$ 31,577.00
007	Fill for Excavated Unsuitable Soil/Waste (Intermediate Cover Soil Layer/Grading Layer)	CY	4,347	$ 1.95	$ 8,476.65
008	Subbase Final Grading/Compaction	SY	38,173	$ 0.50	$ 19,086.50
009	40 mil Textured LLDPE	SF	382,215	$ 0.41	$ 156,708.15
010	300 mil Biplanar Geocomposite	SF	386,879	$ 0.52	$ 201,177.08
011	Protective Soil cover Layer (18 Inches)	CY	20,094	$ 16.25	$ 326,527.50
012	Topsoil Layer (6 Inches)	CY	6,488	$ 8.00	$ 51,904.00
013	18 Inch Diameter ADS N-12 Downchute Pipe	LF	908	$ 25.00	$ 22,700.00
014	12 Inch Diameter ADS N-12 Downchute Pipe	LF	345	$ 15.00	$ 5,175.00
015	FDOT Index No. 261 Baffled Endwall	EA	4	$ 3,750.00	$ 15,000.00
016	GFFR Lined Stormwater Swale and Downchute Pipe Outfall Areas	SF	7,192	$ 8.00	$ 57,536.00
017	6 Inch Diameter ADS N-12 Tooe Drain (Slotted Pipe)	LF	1,060	$ 23.00	$ 24,380.00
018	6 Inch Diameter ADS N-12 Toe Drain (Solid Wall Pipe)	LF	120	$ 15.00	$ 1,800.00
019	Limerock Access Ramp	SY	3,287	$ 8.00	$ 26,296.00
020	Horizontal Landfill Gas Vent Trench Installation	LF	1,654	$ 35.00	$ 57,890.00
021	Vertical Landfill Gas Vent Installation				
021a	30 Inch Diameter Bore with 4 Inch Diameter PVC Casing	LF	453	$ 120.00	$ 54,360.00
021b	Boring Refusal	LF	45	$ 75.00	$ 3,375.00
022	Sodding	SY	38,720	$ 1.44	$ 55,756.80
023	Seeding	SY	3,333	$ 0.75	$ 2,499.75
	Construction Sub Total				**$1,269,725.43**
	Contingency				$ 200,000.00
	Total Construction Cost				**$1,469,725.43**

Exhibit 5

County Quote for Sod

MANATEE COUNTY GOVERNME
Mail Invoice To:
Clerk of the Circuit Co
MANATEE COUNTY FINANCE
P.O. Box 1000
Bradenton, FL 34206-100

FY 14

ase Order No: B1406628
ket#: P1200299
Required:
ate: 06/30/14
Via: Bestway
B.: Destination
ested By: Jim Bokish

VENDOR
V010052
SUNBELT SOD & GRADING CO INC
819 9th ST N E
RUSKIN, FL 33570

SHIP TO
S0305
UTILITY OPERATIONS
LANDFILL OPERATIONS
3333 LENA ROAD
BRADENTON, FL 34202

ITEM	QTY	UM	DESCRIPTION	UNIT PRICE	EXTENSION
001	35,00	EA	Bahia Pallet Sod, Slope Delivery & Installed. 500 pallets x 400 sq'/pallet = 200,000 sq' x $0.175/sq' = $35,000.	1.00	35,000.00

480-0011101-552000 35,000.00

Release Order Total 35,000.00

Requisition #:BL094781

Approval Signature: _____

Exhibit 6

County Quote for Storm Water Pipe and RS Means Pipe Pricing

MANATEE COUN
Mail Invoice
Clerk of the
MANATEE COUN
P.O. Box 100
Bradenton, F

FY 15

STAGE II

Release Order No: B1503487
Blanket#: P1301771
Date Required:
RO Date: 03/02/15
Ship Via: Bestway
F.O.B.: Destination
Requested By: Jim Bokish

VENDOR
L001203 (941) 379-8989
FERGUSON ENTERPRISES INC
1601 SARASOTA CENTER BLVD
SARASOTA, FL 34240

SHIP TO
S0305
UTILITY OPERATIONS
LANDFILL OPERATIONS
3333 LENA ROAD
BRADENTON, FL 34202

ITEM	QTY	UM	DESCRIPTION	UNIT PRICE	EXTENSION
001	2,500	FT	Downcomer Pipe - Corrugated smooth interior HDPE pipe, 18 inch pipe with bell spigot, 20 foot sections	9.73	24,325.00

485-6077200-552000/6077200-0004 24,325.00

Release Order Total 24,325.00

Requisition #:BL100606

Approval Signature: 3/2/15

33 11 13.25 Water Supply, Polyvinyl Chloride Pipe		Crew	Daily Output	Labor-Hours	Unit	2015 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8200	45° Bend, 4" diameter	B-20	100	.240	Ea.	42	10.05		52.05	63
8220	6" diameter		90	.267		73	11.20		84.20	98.50
8240	8" diameter		50	.480		139	20		159	185
8260	10" diameter		50	.480		278	20		298	340
8280	12" diameter		30	.800		360	33.50		393.50	450
8300	Reducing tee 6" x 4"		100	.240		104	10.05		114.05	131
8320	8" x 6"		90	.267		166	11.20		177.20	200
8330	10" x 6"		90	.267		196	11.20		207.20	233
8340	10" x 8"		90	.267		216	11.20		227.20	256
8350	12" x 6"		90	.267		245	11.20		256.20	287
8360	12" x 8"		90	.267		265	11.20		276.20	310
8400	Tapped service tee (threaded type) 6" x 6" x 3/4"		100	.240		95.50	10.05		105.55	121
8430	6" x 6" x 1"		90	.267		95.50	11.20		106.70	123
8440	6" x 6" x 1-1/2"		90	.267		95.50	11.20		106.70	123
8450	6" x 6" x 2"		90	.267		95.50	11.20		106.70	123
8460	8" x 8" x 3/4"		90	.267		140	11.20		151.20	172
8470	8" x 8" x 1"		90	.267		140	11.20		151.20	172
8480	8" x 8" x 1-1/2"		90	.267		140	11.20		151.20	172
8490	8" x 8" x 2"		90	.267		140	11.20		151.20	172
8500	Repair coupling 4"		100	.240		26	10.05		36.05	45
8520	6" diameter		90	.267		40.50	11.20		51.70	63
8540	8" diameter		50	.480		96.50	20		116.50	139
8560	10" diameter		50	.480		203	20		223	256
8580	12" diameter		50	.480		296	20		316	360
8600	Plug end 4"		100	.240		23	10.05		33.05	42
8620	6" diameter		90	.267		41	11.20		52.20	63.50
8640	8" diameter		50	.480		69	20		89	109
8660	10" diameter		50	.480		97	20		117	139
8680	12" diameter		50	.480		119	20		139	164
8700	PVC pipe, joint restraint									
8710	4" diameter	B-20A	32	1	Ea.	45.50	45.50		91	123
8720	6" diameter		25.60	1.250		56	57		113	153
8730	8" diameter		21.33	1.500		74.50	68.50		143	191
8740	10" diameter		18.28	1.751		130	80		210	271
8750	12" diameter		16.84	1.900		145	87		232	297
8760	14" diameter		16	2		204	91.50		295.50	370
8770	16" diameter		11.64	2.749		265	126		391	490
8780	18" diameter		11.03	2.901		340	133		473	585
8785	20" diameter		9.14	3.501		420	160		580	715
8790	24" diameter		7.53	4.250		490	194		684	850

33 11 13.35 Water Supply, HDPE										
0010	**WATER SUPPLY, HDPE** R331113-80									
0011	Butt fusion joints, SDR 21 40' lengths not including excavation or backfill									
0100	4" diameter	B-22A	400	.100	L.F.	2.47	4.30	1.64	8.41	11.55
0200	6" diameter		380	.105		5.85	4.53	1.73	12.11	15.70
0300	8" diameter		320	.125		8.55	5.40	2.06	16.01	20.50
0400	10" diameter		300	.133		14.65	5.75	2.19	22.59	28
0500	12" diameter		260	.154		17.75	6.60	2.53	26.88	33
0600	14" diameter	B-22B	220	.182		27.50	7.80	5	40.30	48.50
0700	16" diameter		180	.222		32.50	9.55	6.15	48.20	58
0800	18" diameter		140	.286		38	12.30	7.90	58.20	70
0900	24" diameter		100	.400		59	17.20	11.05	87.25	105

Exhibit 7

FDOT Pricing Tables for Stormwater Structures

Florida Department of Transportation
Item Average Unit Cost
From 2014/12/01 to 2015/05/31

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0430174112	3	$56.54	$9,159.37	162.000	LF	N	PIPE CULV, OPT MATL, ROUND,12"SD
0430174115	6	$76.83	$28,888.79	376.000	LF	N	PIPE CULV, OPT MATL, ROUND,15"SD
0430174118	16	$67.05	$673,831.94	10,049.000	LF	N	PIPE CULV, OPT MATL, ROUND,18"SD
0430174124	11	$72.64	$886,985.63	12,210.000	LF	N	PIPE CULV, OPT MATL, ROUND,24"SD
0430174130	4	$86.16	$86,592.94	1,005.000	LF	N	PIPE CULV, OPT MATL, ROUND,30"SD
0430174136	1	$96.00	$7,104.00	74.000	LF	N	PIPE CULV, OPT MATL, ROUND,36"SD
0430174148	1	$130.19	$11,456.72	88.000	LF	N	PIPE CULV, OPT MATL, ROUND,48"SD
0430174215	3	$92.79	$18,280.00	197.000	LF	N	PIPE CULV, OPT MATL, OTHER, 15"SD
0430174218	4	$76.36	$64,067.33	839.000	LF	N	PIPE CULV, OPT MATL, OTHER, 18"SD
0430174224	5	$74.70	$109,585.82	1,467.000	LF	N	PIPE CULV, OPT MATL, OTHER, 24"SD
0430174230	4	$114.35	$20,583.74	180.000	LF	N	PIPE CULV, OPT MATL, OTHER, 30"SD
0430174236	4	$117.07	$46,944.20	401.000	LF	N	PIPE CULV, OPT MATL, OTHER, 36"SD
0430175112	1	$25.00	$900.00	36.000	LF	N	PIPE CULV, OPT MATL, ROUND, 12"S/CD
0430175115	10	$112.42	$60,483.48	538.000	LF	N	PIPE CULV, OPT MATL, ROUND, 15"S/CD
0430175118	26	$63.29	$3,921,189.41	61,951.800	LF	N	PIPE CULV, OPT MATL, ROUND, 18"S/CD
0430175124	21	$67.20	$2,698,769.09	40,159.700	LF	N	PIPE CULV, OPT MATL, ROUND, 24"S/CD
0430175130	12	$100.25	$1,480,824.47	14,772.000	LF	N	PIPE CULV, OPT MATL, ROUND, 30"S/CD
0430175136	10	$110.80	$1,756,590.28	15,854.000	LF	N	PIPE CULV, OPT MATL, ROUND, 36"S/CD
0430175142	7	$117.16	$754,485.31	6,440.000	LF	N	PIPE CULV, OPT MATL, ROUND, 42"S/CD
0430175148	7	$153.71	$734,900.12	4,781.000	LF	N	PIPE CULV, OPT MATL, ROUND, 48"S/CD
0430175154	4	$228.67	$989,456.61	4,327.000	LF	N	PIPE CULV, OPT MATL, ROUND, 54"S/CD
0430175160	3	$193.51	$176,090.73	910.000	LF	N	PIPE CULV, OPT MATL, ROUND, 60"S/CD
0430175215	1	$113.74	$5,232.04	46.000	LF	N	PIPE CULV, OPT MATL, OTHER, 15"S/CD
0430175218	6	$77.79	$107,578.25	1,383.000	LF	N	PIPE CULV, OPT MATL, OTHER, 18"S/CD
0430175224	6	$119.85	$80,298.64	670.000	LF	N	PIPE CULV, OPT MATL, OTHER, 24"S/CD
0430175230	4	$123.68	$417,672.40	3,377.000	LF	N	PIPE CULV, OPT MATL, OTHER, 30"S/CD
0430175236	3	$123.87	$127,090.82	1,026.000	LF	N	PIPE CULV, OPT MATL, OTHER, 36"S/CD
0430175242	1	$149.32	$412,123.20	2,760.000	LF	N	PIPE CULV, OPT MATL, OTHER, 42"S/CD
0430175248	1	$227.67	$153,904.92	676.000	LF	N	PIPE CULV, OPT MATL, OTHER, 48"S/CD
0430175254	1	$225.00	$360,450.00	1,602.000	LF	N	PIPE CULV, OPT MATL, OTHER, 54"S/CD
0430185118	1	$461.95	$40,651.60	88.000	LF	N	PIPE CULV,OPT MATL, ROUND, JACK&BORE,18"
0430185124	1	$523.16	$50,746.52	97.000	LF	N	PIPE CULV,OPT MATL, ROUND, JACK&BORE,24"
0430185136	1	$715.90	$85,908.00	120.000	LF	N	PIPE CULV,OPT MATL, ROUND, JACK&BORE,36"
0430185142	2	$680.81	$156,586.24	230.000	LF	N	PIPE CULV,OPT MATL, ROUND, JACK&BORE,42"
0430185148	1	$997.54	$113,719.56	114.000	LF	N	PIPE CULV,OPT MATL, ROUND, JACK&BORE,48"
0430200 38	1	$4,655.00	$4,655.00	1.000	EA	N	FLARED END SECTION, CONCRETE, 36"
0430610125	2	$1,795.00	$3,590.00	2.000	EA	N	U-ENDWALL,STD 261,1:4 SLP, 18"
0430610325	1	$1,270.00	$1,270.00	1.000	EA	N	U-ENDWALL,STD 261,1:2 SLP, 18"
0430611225	1	$2,015.55	$8,062.20	4.000	EA	N	U-ENDWALL, BAFFLES, STD 261,1:3 SLP,18"
0430830	2	$495.92	$9,918.40	20.000	CY	N	PIPE FILLING AND PLUGGING

Florida Department of Transportation
Item Average Unit Cost
From 2015/01/01 to 2015/06/30

Contract Type: CC STATEWIDE
Displaying: VALID ITEMS WITH HITS
From: 0102 1 To: 9999999

Item	No. of Conts	Weighted Average	Total Amount	Total Quantity	Unit Meas	Obs?	Description
0425 1421	2	$6,780.13	$13,560.26	2.000	EA	N	INLETS, CURB, TYPE J-2, <10'
0425 1451	7	$8,216.14	$213,619.60	26.000	EA	N	INLETS, CURB, TYPE J-5, <10'
0425 1452	2	$7,619.72	$114,295.86	15.000	EA	N	INLETS, CURB, TYPE J-5, >10'
0425 1455	3	$4,251.22	$25,507.30	6.000	EA	N	INLETS, CURB, TYPE J-5, PARTIAL
0425 1459	2	$11,297.00	$90,376.02	8.000	EA	N	INLETS, CURB, TYPE J-5, MODIFY
0425 1461	3	$8,277.75	$115,888.46	14.000	EA	N	INLETS, CURB, TYPE J-6, <10'
0425 1462	1	$8,478.95	$59,352.65	7.000	EA	N	INLETS, CURB, TYPE J-6, >10'
0425 1465	1	$4,320.00	$4,320.00	1.000	EA	N	INLETS, CURB, TYPE J-6, PARTIAL
0425 1471	2	$4,174.76	$29,223.33	7.000	EA	N	INLETS, CURB, TYPE 7, <10'
0425 1481	2	$5,482.01	$32,892.08	6.000	EA	N	INLETS, CURB, TYPE 8, <10'
0425 1501	3	$3,532.95	$155,450.00	44.000	EA	N	INLETS, DT BOT, TYPE A, <10'
0425 1503	3	$6,697.50	$267,900.00	40.000	EA	N	INLETS, DT BOT, TYPE A, J BOT, <10'
0425 1504	2	$8,683.33	$26,050.00	3.000	EA	N	INLETS, DT BOT, TYPE A, J BOT, >10'
0425 1511	1	$3,566.16	$14,264.64	4.000	EA	N	INLETS, DT BOT, TYPE B, <10'
0425 1521	12	$2,870.10	$177,946.09	62.000	EA	N	INLETS, DT BOT, TYPE C, <10'
0425 1522	1	$4,124.30	$12,372.90	3.000	EA	N	INLETS, DT BOT, TYPE C, >10'
0425 1523	2	$8,762.09	$105,145.08	12.000	EA	N	INLETS, DT BOT, TYPE C,J BOT,<10'
0425 1524	1	$10,477.95	$10,477.95	1.000	EA	N	INLETS, DT BOT, TYPE C, J BOT, >10'
0425 1525	2	$2,300.00	$4,600.00	2.000	EA	N	INLETS, DT BOT, TYPE C, PARTIAL
0425 1529	1	$3,029.00	$3,029.00	1.000	EA	N	INLETS, DT BOT, TYPE C, MODIFY
0425 1531	2	$2,387.62	$238,762.08	100.000	EA	N	INLETS, DT BOT, TYPE C MOD- BACK, <10'
0425 1532	1	$3,327.20	$3,327.20	1.000	EA	N	INLETS, DT BOT, TYPE C, MOD, >10'
0425 1533	2	$4,350.03	$43,500.30	10.000	EA	N	INLETS, DT BOT, TYPE C, MOD, J BOT, <10'
0425 1534	1	$5,249.71	$20,998.84	4.000	EA	N	INLETS, DT BOT, TYPE C, MOD, J BOT, >10'
0425 1541	5	$3,044.10	$197,866.52	65.000	EA	N	INLETS, DT BOT, TYPE D, <10'
0425 1542	1	$5,796.31	$17,388.93	3.000	EA	N	INLETS, DT BOT, TYPE D, >10'
0425 1543	2	$6,283.38	$37,700.26	6.000	EA	N	INLETS, DT BOT,TYPE D, J BOT, <10'
0425 1544	1	$6,992.55	$13,985.10	2.000	EA	N	INLETS, DT BOT,TYPE D, J BOT, >10'
0425 1545	2	$2,309.57	$4,619.14	2.000	EA	N	INLETS, DT BOT,TYPE D, PARTIAL
0425 1549	5	$5,416.60	$86,665.62	16.000	EA	N	INLETS, DT BOT, TYPE D, MODIFY
0425 1551	4	$4,648.07	$97,609.44	21.000	EA	N	INLETS, DT BOT, TYPE E, <10'
0425 1559	1	$5,572.47	$5,572.47	1.000	EA	N	INLETS, DT BOT, TYPE E, MODIFY
0425 1561	6	$3,687.15	$33,184.39	9.000	EA	N	INLETS, DT BOT, TYPE F, <10'
0425 1571	1	$4,100.00	$8,200.00	2.000	EA	N	INLETS, DT BOT, TYPE G, <10'
0425 1581	3	$3,525.00	$14,100.00	4.000	EA	N	INLETS, DT BOT, TYPE H, <10'
0425 1585	1	$875.00	$1,750.00	2.000	EA	N	INLETS, DT BOT, TYPE H, PARTIAL
0425 1589	2	$9,334.64	$28,003.91	3.000	EA	N	INLETS, DT BOT, TYPE H, MODIFY
0425 1701	5	$3,539.06	$509,625.34	144.000	EA	N	INLETS, GUTTER, TYPE S, <10'
0425 1702	1	$6,140.00	$18,420.00	3.000	EA	N	INLETS, GUTTER, TYPE S, >10'
0425 1703	2	$6,763.33	$60,870.00	9.000	EA	N	INLETS, GUTTER, TYPE S, J BOT<10'

Exhibit 8

Updated Costs Estimate For Remaining Gas Collection System Construction

Manatee County Lena Road Landfill

Stage II and III Landfill
Cost Estimate for Remaining Landfill Gas Collection System

Landfill Closure and Long-term Care Cost Estimate August 20, 2015

Number	Description	Units	Quantity	Unit Price	Extended Price
1	Landfill Gas Collection Wells	LF	15,075	$ 82.79	$ 1,248,059.25
2	Landfill Gas Collection Well Heads	EA	284	$ 742.95	$ 210,997.80
3	8-inch HDPE Pipe	LF	43,400	$ 25.47	$ 1,105,398.00
4	18-inch HDPE Pipe	LF	7,700	$ 72.17	$ 555,709.00
5	Condensate Pipe Tie-in to Manhole with Drip Leg	EA	7	$ 37,715.00	$ 264,005.00
				TOTAL COST ESTIMATE	**$ 3,384,169**

Exhibit 9

2011 County Bid Costs for Gas Collection System Construction

RFQ #11-2164DC
Manatee County Stage III Landfill Phase II Landfill Gas Collection System

COMANCO Environmental Services
4301 Sterling Commerce Drive
Plant City, FL. 33566
813-988-8829

Item	Description	Units	Quantity	Unit Price	Extended Price
1	Mobilization	LS	1		$ 15,000.00
2	Miscellaneous Work and Cleanup	LS	1		$ 7,500.00
3	Landfill Gas Collection Wells	LF	525	$ 78.00	$ 40,950.00
4	Landfill Gas Collection Well Heads	EA	12	$ 700.00	$ 8,400.00
5	8-inch HDPE Pipe	LF	1,600	$ 24.00	$ 38,400.00
6	18-inch HDPE Pipe	LF	900	$ 68.00	$ 61,200.00
7	Lateral Connections	EA	12	$ 400.00	$ 4,800.00
8	Sodding	SY	5,000	$ 2.25	$ 11,250.00
9	As-built Record Drawings	LS	1		$ 12,000.00
10	Discretionary Work	$		$ 20,000.00	$ 20,000.00
	TOTAL PRICE - QUOTE "A" 90 DAYS				**$ 219,500.00**

1	Mobilization	LS	1		$ 15,000.00
2	Miscellaneous Work and Cleanup	LS	1		$ 7,500.00
3	Landfill Gas Collection Wells	LF	525	$ 80.00	$ 42,000.00
4	Landfill Gas Collection Well Heads	EA	12	$ 750.00	$ 9,000.00
5	8-inch HDPE Pipe	LF	1,600	$ 25.00	$ 40,000.00
6	18-inch HDPE Pipe	LF	900	$ 70.00	$ 63,000.00
7	Lateral Connections	EA	12	$ 400.00	$ 4,800.00
8	Sodding	SY	5,000	$ 2.25	$ 11,250.00
9	As-built Record Drawings	LS	1		$ 12,000.00
10	Discretionary Work	$		$ 20,000.00	$ 20,000.00
	TOTAL PRICE - QUOTE "B" 60 DAYS				**$ 224,550.00**

Addendum 1 acknowledged?	
Bid Form: Subcontractor %?	
Florida Trench Act?	
Contractor's Questionanare?	
Drug Free Workplace certificate?	
Public Contracting & Environmental Crimes Cert.?	
Bid Bond?	

August 2011

Exhibit 10

County Quote for Water Quality Monitoring Costs

SOUTHERN ANALYTICAL LABORATORIES, INC.

September 19, 2014

Kayse M. Hasiak-Solan X-5766
Laboratory Supervisor
Manatee County Utilities - Central Laboratory
4751 66th Street West
Bradenton, FL 34210

Dear Mrs. Hasiak-Solan:

Southern Analytical Laboratories Inc. is pleased to provide an estimate for sampling and testing services for Lena Road and Erie Road leachate, groundwater and surface water sites. These prices are in accordance with Southern Analytical Laboratories' bid submitted for RFQ# 12-1213BS.

	Semiannually	Annually
Lena Road Monitoring Wells Analyses	$4,230.00	$8,460.00
Lena Road Surface Water Analyses	2,634.00	5,268.00
Lena Road Leachate Analyses		2,885.00
Erie Road Monitoring Wells Analyses	2,170.00	4,340.00
Erie Road Monitoring Wells Analyses		640.00
Field Sampling (Including all mileage, labor, materials and equipment) per hour Estimated sampling time: 32 hours at $60.00 per hour	1,920.00	3,840.00
ADaPT Reporting per hour Estimated report preparation time: 12 hours at $75.00 per hour	900.00	1,800.00
	$11,854.00	$27,233.00

Thank you for your valued account. Should you have any questions I can be contacted by phone at 813/855-1844, by fax at 813/855-2218, or by email at kathryn@southernanalyticallabs.com. We appreciate your business and look forward to continuing our strong working relationship.

Kindest Regards,

Kathryn Nordmark
Project Manager

ATKINS
100 Paramount Drive, Suite 207
Sarasota, Florida 34232
941.378.0272

Comp. By: _____
Chk. By: _____
Date: _____
Sheet No.: _____
Job No.: _____

Project: Lena Rd Landfill
FACF

Allocation of Monitoring Cost from Southern Analytical

Analyses	LR GW	$4230
	LR SW	2634
	Erie Rd	2170
	Total	9034

Sampling Costs $1920
Reporting Costs $ 900

LR GW is 47% of the analyses cost
Therefore 47% of sample and Reporting cost are allocated to LR GW sampling and analysis

LR GW Analyses = 4230
Sampling = 1920 x .47 = 902.40
Reporting = 900 x .47 = 423
Total $5,555.40

Divided by 18 wells = $308.63/well

LRSW is 29% of the analyses cost

Thus Sampling = 1920 x .29 = 556.80
Reporting = 900 x .29 = 261
Analyses : 2634
3451.80

@ 2 locations = $1725.90/location

Exhibit 11

County Invoice for Jetting of the LCRS

Florida Jetclean
7538 Dunbridge Drive
Odessa, FL 33556
800-226-8013

Invoice

Number: **11860**
Date: **July 02, 2015**

Bill To:
Atkins
100 Paramount Drive
Suite 207
Sarasota, FL 34232

Ship To:

PO Number	Terms	Project
100040621 07.01S	Net 30	Manatee Cty Lena Rd

Date	Description	Amount
6/29 - 7/2	High-pressure water-jetting of 37,052LF of existing landfill leachate collection piping at the Manatee County Lenda Road Landfill, as instructed, and per Subcontract *** Please See Included Reports ***	27,418.48
	Total	**$27,418.48**

All Major Credit Cards Accepted With 4.5% Processing Fee.

Please pay against invoice. No statement will be sent.

Exhibit 12

RS Means Estimate for Mowing Large Areas

32 01 Operation and Maintenance of Exterior Improvements

32 01 30 – Operation and Maintenance of Site Improvements

32 01 30.20 Snow Removal

		Crew	Daily Output	Labor-Hours	Unit	Material	2015 Bare Costs Labor	Equipment	Total	Total Incl O&P
0320	2"-4" deep, single driveway (10' x 50')	A-1M	16	.500	Ea.		18.80	4.20	23	35.50
0340	Double driveway (20' x 50')		16	.500			18.80	4.20	23	35.50
0360	4"-10" deep, single driveway		16	.500			18.80	4.20	23	35.50
0380	Double driveway		16	.500			18.80	4.20	23	35.50
0400	10"-15" deep, single driveway		12	.667			25	5.60	30.60	47
0420	Double driveway		12	.667			25	5.60	30.60	47
0440	For heavy wet snow, add								20%	20%
9000	Minimum labor and equipment charge	A-3A	2	4	Job		194	78	272	395

32 01 90 – Operation and Maintenance of Planting

32 01 90.13 Fertilizing

0010	**FERTILIZING**									
0100	Dry, granular, 4#/M.S.F., hand spread	1 Clab	24	.333	M.S.F.	2.78	12.55		15.33	23.50
0110	Push rotary		140	.057	"	2.78	2.15		4.93	6.60
0112	Push rotary, per 1076 feet squared		130	.062	Ea.	2.78	2.31		5.09	6.85
0120	Tractor towed spreader, 8'	B-66	500	.016	M.S.F.	2.78	.78	.53	4.09	4.87
0130	12' spread		800	.010		2.78	.49	.33	3.60	4.19
	Truck whirlwind spreader		1200	.007		2.78	.32	.22	3.32	3.81
	Water soluable, hydro spread, 1.5#/M.S.F.	B-64	600	.027		2.85	1.02	.66	4.53	5.55
	Add for weed control					.48			.48	.53

32 01 90.19 Mowing

0010	**MOWING**									
1650	Mowing brush, tractor with rotary mower									
1660	Light density	B-84	22	.364	M.S.F.		18.40	16.85	35.25	47.50
1670	Medium density		13	.615			31	28.50	59.50	81
1680	Heavy density		9	.889			45	41	86	117
2000	Mowing, brush/grass, tractor, rotary mower, highway/airport median		13	.615			31	28.50	59.50	81
2010	Traffic safety flashing truck for highway/airport median mowing	A-2B	1	8	Day		315	245	560	775
4050	Lawn mowing, power mower, 18" - 22"	1 Clab	65	.123	M.S.F.		4.63		4.63	7.60
4100	22" - 30"		110	.073			2.73		2.73	4.48
4150	30" - 32"		140	.057			2.15		2.15	3.52
4160	Riding mower, 36" - 44"	B-66	300	.027			1.30	.88	2.18	3.03
4170	48" - 58"	"	480	.017			.81	.55	1.36	1.89
4175	Mowing with tractor & attachments									
4180	3 gang reel, 7'	B-66	930	.009	M.S.F.		.42	.28	.70	.97
4190	5 gang reel, 12'		1200	.007			.32	.22	.54	.75
4200	Cutter or sickle-bar, 5', rough terrain		210	.038			1.85	1.25	3.10	4.32
4210	Cutter or sickle-bar, 5', smooth terrain		340	.024			1.14	.77	1.91	2.67
4220	Drainage channel, 5' sickle bar		5	1.600	Mile		78	52.50	130.50	181
4250	Lawnmower, rotary type, sharpen (all sizes)	1 Clab	10	.800	Ea.		30		30	49.50
4260	Repair or replace part		7	1.143	"		43		43	70.50
5000	Edge trimming with weed whacker		5760	.001	L.F.		.05		.05	.09

32 01 90.23 Pruning

0010	**PRUNING**									
0020	1-1/2" caliper	1 Clab	84	.095	Ea.		3.58		3.58	5.85
0030	2" caliper		70	.114			4.30		4.30	7.05
0040	2-1/2" caliper		50	.160			6		6	9.85
0050	3" caliper		30	.267			10.05		10.05	16.45
0060	4" caliper, by hand	2 Clab	21	.762			28.50		28.50	47
0070	Aerial lift equipment	B-85	38	1.053			43	27	70	99.50
0100	6" caliper, by hand	2 Clab	12	1.333			50		50	82
0110	Aerial lift equipment	B-85	20	2			81.50	51.50	133	189
0200	9" caliper, by hand	2 Clab	7.50	2.133			80		80	132

Exhibit 13

RS Means Estimate for Finished Grading

31 22 Grading

31 22 13 – Rough Grading

31 22 13.20 Rough Grading Sites

		Crew	Daily Output	Labor-Hours	Unit	Material	2015 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	ROUGH GRADING SITES									
0100	Rough grade sites 400 S.F. or less	B-1	2	12	Ea.		460		460	755
0120	410-1000 S.F.	"	1	24			920		920	1,500
0130	1100-3000 S.F.	B-62	1.50	16			660	116	776	1,200
0140	3100-5000 S.F.	"	1	24			990	174	1,164	1,800
0150	5100-8000 S.F.	B-63	1	40			1,600	174	1,774	2,800
0160	8100-10000 S.F.	"	.75	53.333			2,125	231	2,356	3,700
0170	8100-10000 S.F.	B-10L	1	12			555	470	1,025	1,400
0200	Rough grade open sites 10000-20000 S.F.	B-11L	1.80	8.889			390	410	800	1,075
0210	20100-25000 S.F.		1.40	11.429			505	525	1,030	1,400
0220	25100-30000 S.F.		1.20	13.333			590	615	1,205	1,625
0230	30100-35000 S.F.		1	16			705	735	1,440	1,925
0240	35100-40000 S.F.		.90	17.778			785	820	1,605	2,150
0250	40100-45000 S.F.		.80	20			880	920	1,800	2,425
0260	45100-50000 S.F.		.72	22.222			980	1,025	2,005	2,700
0270	50100-75000 S.F.		.50	32			1,400	1,475	2,875	3,900
0280	75100-100000 S.F.		.36	44.444			1,950	2,050	4,000	5,400

31 22 16 – Fine Grading

31 22 16.10 Finish Grading

		Crew	Daily Output	Labor-Hours	Unit	Material	2015 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	FINISH GRADING									
0012	Finish grading area to be paved with grader, small area	B-11L	400	.040	S.Y.		1.76	1.84	3.60	4.86
0100	Large area		2000	.008			.35	.37	.72	.97
0200	Grade subgrade for base course, roadways		3500	.005			.20	.21	.41	.55
1020	For large parking lots	B-32C	5000	.010			.43	.47	.90	1.21
1050	For small irregular areas	"	2000	.024			1.07	1.18	2.25	3.02
1100	Fine grade for slab on grade, machine	B-11L	1040	.015			.68	.71	1.39	1.87
1150	Hand grading	B-18	700	.034			1.31	.07	1.38	2.22
2700	Fine grade granular base for sidewalks and bikeways	B-62	1200	.020			.83	.14	.97	1.50
2550	Hand grade select gravel	2 Clab	60	.267	C.S.F.		10.05		10.05	16.45
3000	Hand grade select gravel, including compaction, 4" deep	B-18	555	.043	S.Y.		1.65	.08	1.73	2.80
3100	6" deep		400	.060			2.30	.12	2.42	3.89
3120	8" deep		300	.080			3.06	.16	3.22	5.15
3300	Finishing grading slopes, gentle	B-11L	8900	.002			.08	.08	.16	.22
3310	Steep slopes		7100	.002			.10	.10	.20	.27
3500	Finish grading lagoon bottoms		4	4	M.S.F.		176	184	360	485
9000	Minimum labor/equipment charge, hand grading	1 Clab	2	4	Job		150		150	247
9100	Minimum labor/equipment charge, machine grading	B-11L	2	8	"		355	370	725	975

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench

		Crew	Daily Output	Labor-Hours	Unit	Material	2015 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	EXCAVATING, TRENCH									
0011	Or continuous footing									
0020	Common earth with no sheeting or dewatering included									
0050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	150	.107	B.C.Y.		4.70	2.43	7.13	10.20
0060	1/2 C.Y. excavator	B-11M	200	.080			3.53	1.96	5.49	7.85
0090	4' to 6' deep, 1/2 C.Y. excavator	"	200	.080			3.53	1.96	5.49	7.85
0100	5/8 C.Y. excavator	B-12Q	250	.064			2.86	2.36	5.22	7.20
0300	1/2 C.Y. excavator, truck mounted	B-12J	200	.080			3.57	4.41	7.98	10.60
0500	6' to 10' deep, 3/4 C.Y. excavator	B-12F	225	.071			3.18	2.91	6.09	8.30

Exhibit 14

Atkins Estimates for Reports and Permit Renewal Application

FINANCIAL ASSURANCE COST ESTIMATE FORM
COST ESTIMATE FOR ITEM 16 SITE SPECIFIC COSTS - ANNUAL REPORTS
Prepare by Atkins, July 2015

LABOR COSTS Name or Classification	Rate	Semi-Annual Water Monitoring Reports	Bi-annual Water Monitoring Report	Up-date Financial Assurance Cost Estimate		Total Labor Fee	Total Hours
Principal	$195	1	1	1		$585	3
Sr. Project Manager	$165	4	8	2		$2,310	14
Senior Hydrogeologist	$145	40	60			$14,500	100
Project Engineer	$120			8		$960	8
Designer/Technician	$80	16	80			$7,680	96
Admin. Assistant	$70	8	16	4		$1,960	28
						$0	0
						$0	0
						$0	0
Total Hours		**69**	**165**	**15**	**0**		**249**
Total Labor Dollars		**$8,495**	**$17,735**	**$1,765**	**$0**	**$27,995**	

DIRECT COSTS	Semi-Annual Water Monitoring Reports	Bi-annual Water Monitoring Report 0	Up-date Financial Assurance Cost Estimate	0 0 0 0	Total Direct Costs
Aerial Photographs/Topo. map					$0
Equipment					$0
Printing	$100	$500	$50		$650
Photographs					$0
Per Diem					$0
Hotel					$0
Reproduction					$0
Mileage	$300	$300	$200		$800
Federal Express	$45	$45	$20		$110
Testing					$0
Miscellaneous	$160	$220	$65		$445
Construction Truck					$0
Total Direct Charges	$605	$1,065	$335	$0	**$2,005**

FEE FOR TASK	**$9,100**	**$18,800**	**$2,100**	**$0**	**$30,000**

FINANCIAL ASSURANCE COST ESTIMATE FORM
ST ESTIMATE FOR ITEM 16 SITE SPECIFIC COSTS - RENEW LONG-TERM CARE PERI
Prepare by Atkins July, 2015

LABOR COSTS Name or Classification	Rate	Site Visit	Permit Application	Total Labor Fee	Total Hours
Principal	$195	4	8	$2,340	12
Sr. Project Manager	$165	16	60	$12,540	76
Senior Hydrogeologist	$145	16	100	$16,820	116
Project Engineer	$120			$0	0
Designer/Technician	$80	20	120	$11,200	140
Admin. Assistant	$70	4	16	$1,400	20
				$0	0
				$0	0
				$0	0
Total Hours		**60**	**304**		**364**
Total Labor Dollars		**$7,620**	**$36,680**	**$44,300**	

DIRECT COSTS	0 Site Visit	0 Permit Application 0	Total Direct Costs
Aerial Photographs/Topo. map			$0
Equipment			$0
Printing	$100	$200	$300
Photographs		$100	$100
Per Diem			$0
Hotel		$400	$400
Reproduction			$0
Mileage	$600	$1,000	$1,600
Federal Express	$100	$200	$300
Testing			$0
Miscellaneous	$400	$600	$1,000
Permit Fee		$2,000	$2,000
Total Direct Charges	$1,200	$4,500	**$5,700**

FEE FOR TASK	**$8,820**	**$41,180**	**$50,000**

cost is $0.175 per square foot (or $1.575 per square yard) based on the vendor quote from 06/30/14 (Attachment 5), which was increased at 1.5% for one year. The equals $1.60 per square yard. The unit price includes irrigation, maintenance and a year warranty.

6. Stormwater Control System – The stormwater control system is already in–place on the west side of the Stage I Landfill. The remaining system consists of 54 down-comers spaced 300-foot on-center along the perimeter of the landfill. The average size of corrugated plastic pipe (CPP) down comers is 24-inch. Attachment 6 contains a recent quote for 18-inch CPP ($9.73 per foot) and also page 1173 of RS Means which provides representative costing of HDPE water line piping. The Means pipe costs provides a relative comparison between material price and installed price (180%) and difference between 18-inch and 24-inch pipe (150%). Thus from the material price of $9.73 we get an installed price of $17.51 and for 24-inch we get a price of **$26.27 per foot**. The down comers are an average of 350-feet each with three inlet structures and one outlet structure. The inlet control structures will be similar to FDOT Type ditch bottom inlets, and the outlet control structure will be "U" Type concrete endwalls with grates and energy dissipaters. Attachment 7 provides recent FDOT pricing for these Type C drop inlets ($2,870) and for 18-inch U-type end walls ($2,015). Since the actual end walls will be 30-inch we double the unit price for that item to $4,000. Taking the weighted average for all four structures per down comer we get a average unit price of **$3,153** for each structure.

7. Gas Controls: Passive – Not applicable since an active extraction system is proposed.

8. Gas Control: Active Extraction – An active gas collection system with a flare is in place for the Stage I Landfill and for the first and second phases of the Stage III Landfill. In 2010 an estimate was prepared for the cost of the remaining gas collection system in Stage III and Stage II. The 2011 Manatee County Stage III Landfill Phase II Landfill Gas System was constructed. The 2010 cost estimate was updated (Attachment 8) based on removing the quantities that were constructed in 2011 and updating the unit costs based on the 2011 bid results (Attachment 9). The 2011 bid costs were increased at 1.5% per year.

9. Security System – Not applicable. Landfill security system is in place.

10. Engineering – Estimate provided by Atkins based on recent similar engineering assignments.

11. Professional Services - Estimate provided by Atkins based on recent similar engineering assignments.

12. Contingency – 5% based on Atkins experience with other similar closure projects.

13. Site Specific Costs – Mobilization for a large scale project is $500,000. The Lena Road Waste Tire Processing Facility Closure Estimate approved by FDEP in the

permit issued June 3, 2009 was $33,030, which was increased at 1.5% per year to **$36,116**. Since the white goods are scrap metal that can be recycled, no closure cost estimate is required for this facility. The Household Hazardous Waste Drop-off closure cost is estimated at **$87,500** to account for contracted removal of the most material that could be stored on-site. This estimate is based on the most recent invoices from Clean Harbors Environmental Services Inc., resulting in an annual costs for this service was $350,000. Clean Harbors removes hazardous waste monthly. The Operation Plan calls for removal of hazardous waste at least quarterly. Thus dividing the most recent annual cost by four we obtain the maximum potential closure costs.

LENA ROAD CLASS I LANDFILL ANNUAL COST FOR LONG-TERM CARE

1. Groundwater Monitoring – Based on current costs for monitoring 18 wells as provided in Attachment 10 and allocated based on the percentage of the analyses costs the sampling and monitoring costs are currently $5,555.40 per event for 18 wells or $308.63 per well per event.

2. Surface Water Monitoring – Based on current costs as provided in Attachment 10 and allocated based on the percentage of the analyses costs the sampling and monitoring costs are currently $3,451.80 per event for two locations or $1,725.90 per location per event.

3. Gas Monitoring – Estimate provided by Atkins are as summarized below:

Technician @ $90/hr and 8 hours on site	$720
One day truck rental, gas, etc.	$150
One day equipment rental	$125
Office time to prepare report 2 hours @ $90/hr	$180
Two hours of PE review time @ $150/hr	$300
Mailing and miscellaneous	$ 50
Total	$1,525

Based on reading 20 probes or points, the cost per point is $76.25 per point.

4. Leachate Monitoring – Leachate monitoring is no longer required.

5. Leachate Collection/Treatment Systems Maintenance – Stage I, II and III has 35,176 feet of leachate collection pipe based on the recent cleaning done by Florida Jetclean at $27,418.48, which includes overlap footage (Attachment 11). Thus the average cost was $0.78 per foot of existing collection pipe. There are 42 manholes and 4 lift stations that must be maintained and cleaned out.

   Leachate generation for a slurry wall landfill is a result of infiltration of stormwater through the cover surface and infiltration of groundwater horizontally through the slurry wall. The following table represents the amount of leachate recently collected from the 198 acre Stage I and Stage III Landfills. These areas are currently filled to near final grades and has a 30 acre cap on a portion of the landfill. The 21 month rolling average of leachate generation is 3,799 thousand gallons per year. This equals 19,187 gallons per acre per year. Assuming 316 acres at closure, this equates to 6,063 thousand gallons per year. Treatment is provided at the adjacent Manatee County Southeast WWTP at a cost of $4.44 per thousand gallons.

Leachate Historical Costs				
Month / Year	**Total Gallons**	**Total Cost (Including Customer Charge)**	**Cost Per 1,000 Gallons**	**Customer Charge**
Oct-13	97,000	$1,233.90	$4.24	$822.62
Nov-13	255,000	$1,903.82	$4.24	$822.62
Dec-13	227,000	$1,785.10	$4.24	$822.62
Jan-14	164,000	$1,517.98	$4.24	$822.62
Feb-14	202,000	$1,679.10	$4.24	$822.62
Mar-14	261,000	$1,929.26	$4.24	$822.62
Apr-14	265,000	$1,946.22	$4.24	$822.62
May-14	414,000	$2,577.98	$4.24	$822.62
Jun-14	393,000	$2,488.94	$4.24	$822.62
Jul-14	387,000	$2,463.50	$4.24	$822.62
Aug-14	345,000	$2,285.00	$4.24	$822.62
Sep-14	340,000	$2,264.62	$4.24	$822.62
Oct-14	435,000	$2,667.62	$4.24	$822.62
Nov-14	293,000	$2,064.94	$4.24	$822.62
Dec-14	312,000	$2,145.50	$4.24	$822.62
Jan-15	254,000	$1,989.45	$4.44	$861.69
Feb-15	269,000	$2,056.05	$4.44	$861.69
Mar-15	270,000	$2,060.49	$4.44	$861.69
Apr-15	258,000	$2,007.21	$4.44	$861.69
May-15	240,000	$1,927.79	$4.44	$861.69
TOTALS	**5,681,000**	**$40,994.47**		

6. Groundwater Monitoring Well Maintenance – Allowance for redevelopment of two wells per year at **$500** per well (2 hours at $100 per hour plus $300 mobilization).

7. Gas System Maintenance – Allowance for replacement of pipes, valves, flexible connections, etc. We assumed an annual allowance for maintenance of the flare, which includes the blowers, meters, etc., at 5% per year based on a capital replacement cost of $400,000, or **$20,000 per year**. The operating costs are based on a technician checking and adjusting the wells and flare station monthly plus six additional days for miscellaneous work, or about 60 days per year at $1,000 per day, or **$60,000 per year**. Costs include transportation.

8. Landscape Maintenance – Mowing costs are based on mowing 8 times a year at $32.67 per acre ($0.75 per 1000 SF) based on R. S. Means cost guide page 1130 (Attachment 12). At $32.67 per acre and 8 events per year yields **$261.36** per acre per year. The 350 acres for mowing includes the 316-acre landfill footprint, and 34-acres of miscellaneous grassed areas adjacent to the landfill footprint.

9. Erosion Control & Cover Maintenance – Allowance for filling depressions and replacing sod. Price for sodding is based on the description for Item 5 of the construction cost estimate. The price for re-grading is based on 2015 Means page 1087, finished grading on steep slopes at $0.27 per SY or **$1,307** per acre (Attachment 13). One acre per year is assumed for regrading. An allowance for 25 SY of liner repair is also included. The unit price for liner repair includes mobilization.

10. Stormwater Management System Maintenance – Allowance for cleaning out catch basins, ditches, etc. is based on a three-man crew and truck at $150 per hour and 40 hours per year to yield **$6,000** per year.

11. Security System Maintenance – Allowance for fence, gate and sign repair and replacement.

12. Utilities – **$17,168**. Landfill gas management system: based on $0.12 per kilowatt hour, and a 20 hp motor using 15 Kilowatts of electricity or $1.80 per hour for 24 hours per day and 365 days per year for a total annual cost of **$15,768**. Four leachate pump stations with 10 hp motors pumping 100 GPM for a total of 6 million gallons per year (see item 5 above) would operate a total of 1,000 hours per year using 7.5 Kilowatts of electricity at $0.12 per kilowatt hour or about **$900** per year. For lights and miscellaneous, allow about **$500** per year.

13. Leachate Collection/Treatment System Operation – There is no treatment system. There is operation and maintenance for the pump stations.

14. Administrative – Estimate provided by Atkins based on administration of similar projects. The estimate includes monthly site inspections to check the height and condition of vegetation, condition of the cap, the stormwater management system, landfill gas collection and flaring system and general condition of the closed landfill. The estimate also includes preparation of the leachate generation reports, landfill gas reports and annual update for the financial assurance cost estimate form.

15. Contingency — The contingency is 5% based on Atkins experience with other similar closure projects.

    Site Specific Costs – There are three site-specific costs: 1) preparation of the annual and biennial groundwater; surface water and leachate monitoring reports and annual update of the Financial Assurance Cost Estimate Form;2) renewal of

the long-term care permit; and 3) NSPS Title V Monitoring. The costs for Items 1 and 2 are given in Table 1 and Table 2 respectively, of Attachment 14. The NSPS Title V Monitoring costs are summarized in Table 3, which follows this paragraph. The distance for surface monitoring at the 316-acre site is based on walking a 3.5-mile perimeter plus a minimum of 100-foot grid on the landfill or about 26 miles. The total distance is estimated at 30-miles, and a production rate of at least 10-miles per day for an estimate of 3-days.

TABLE 3 – ESTIMATE OF SURFACE MONITORING COSTS

Technician @ $90/hr and 24 hours on site	$2,160
Three day truck rental, gas, etc.	$ 300
Hotel - two nights	$ 200
Per diem @ $50/day	$ 150
Three day equipment rental @ $100/day	$ 300
Office time to prepare report 4 hours @ $90/hr	$ 360
Two hour of PE review time @ $150/hr	$ 300
Mailing, miscellaneous and contingency	$ 160
Total	$3,930

For closed landfills, the surface emissions are checked only once per year.

m:\water\manatee county solid waste\manatee co sw 2011\work assignments\wa 11-17 renewal lena rd landfill operation permit\draft application\closure cost est\2015 draft\attachment to financial assurance form.doc

PART S

CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

(SEE PAGE 39 OF APPLICATION IN PART A)

Appendix A

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING
PIPELINE VIDEO INSPECTION (EX)
VACUUM TRUCK SERVICES
LASER PROFILING / NO DIG REPAIRS

7538 DUNBRIDGE DR., ODESSA, FL 33556
TEL: 800-226-8013 FAX: 813-926-4616
WEB: WWW.FLORIDAJETCLEAN.COM
EMAIL: FLORIDAJETCLEAN@YAHOO.COM

Atkins
Manatee County
Lena Road Landfill
2015 LCS Pipe Jetcleaning

Work Performed
June/July 2015

Conducted By:
Florida Jetclean
800-226-8013

FLORIDA JETCLEAN

HIGH PRESSURE WATER JETTING
PIPELINE VIDEO INSPECTION (EX)
VACUUM TRUCK SERVICES
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EMAIL: FLORIDAJETCLEAN@YAHOO.COM

REPORT

DATE : 7/15/2015
TO : John A. Banks Jr. – Atkins
FROM : Ralph Calistri (floridajetclean@yahoo.com)
SUBJECT : Manatee County – Lena Road Landfill – 2015 LCS Jetcleaning

Florida Jetclean completed the high-pressure water-jetting of the leachate collection piping at the above landfill on 7/2/2015. The jetting log (below) documents the pipes that were addressed, as well as the jetting distances that were achieved in each pipe.

STAGE 1:

MH 1 to MH 2	1,042'	Entire pipe
MH 3 to MH 2	1,025'	Entire pipe
MH 3 to MH 4	790'	Entire pipe
MH 4 to MH 5	1,090'	Entire pipe
MH 1 to MH 11	1,100'	Entire pipe (2,075') through overlap
MH 11 to MH 1	1,100'	Entire pipe (2,075') through overlap
MH 11 to MH 10	175'	Entire pipe
MH 7 to MH 6	586'	Entire pipe
MH 7 to MH 8	702'	Entire pipe
LS 2 to MH 5	28'	Entire pipe
LS 1 to MH 10	13'	Entire pipe
MH 8 to MH 10	1,313'	Entire pipe (2,071') through overlap
MH 10 to MH 8	1,100'	Entire pipe (2,071') through overlap
MH 5 to MH 6	311'	Entire pipe

STAGE 2:

MH J to MH K	65'	Entire pipe
MH K to MH KA1	475'	Entire pipe
MH K1 to MH KA1	409'	Entire Pipe
MH K1 to MH L1	75'	Entire pipe
MH L1 to MH H1	348'	Entire pipe
MH G Lateral to MH G1 Lateral	1,100'	Entire pipe (1,110') through overlap
MH G1 Lateral to MH G Lateral	1,100'	Entire pipe (1,110') through overlap
MH H to MH J	359'	Entire Pipe
MH G to MH H	335'	Entire pipe
MH F to MH G	335'	Entire pipe
MH F Lateral to MH F1 Lateral	1,100'	Entire pipe (2,087') through overlap

MH F1 Lateral to MH F Lateral	1,100'	Entire pipe (2,087') through overlap
MH E Lateral to MH E1 Lateral	1,100'	Entire pipe (2,117') through overlap
MH E1 Lateral to MH E Lateral	1,100'	Entire pipe (2,117') through overlap
MH F to MH E1A	171'	Entire pipe
MH E to MH E1A	160'	Entire pipe
MH D to MH E	280'	Entire pipe
MH D Lateral to MH D1 Lateral	1,100'	Entire pipe (2,117') through overlap
MH D1 Lateral to MH D Lateral	1,100'	Entire pipe (2,117') through overlap
MH C Lateral to MH C1 Lateral	1,100'	Entire pipe (2,117') through overlap
MH C1 Lateral to MH C Lateral	1,100'	Entire pipe (2,117') through overlap
MH C to MH D	324'	Entire pipe
MH B Lateral to MH B1 Lateral	1,100'	Entire pipe (2,117') through overlap
MH B1 Lateral to MH B Lateral	1,100'	Entire pipe (2,117') through overlap
MH B to MH C	340'	Entire pipe
MH A Lateral to MH A1 Lateral	1,100'	Entire pipe (2,116') through overlap
MH A1 Lateral to MH A Lateral	1,100'	Entire pipe (2,116') through overlap
MH A to MH B	295'	Entire pipe
MH G1 to MH H1	395'	Entire pipe
MH G2 to MH G2A	97'	Entire pipe
MH G2A to MH G2B	200'	Entire pipe
MH G2B to MH G2C	164'	Entire pipe
MH G2C to G3	59'	Entire Pipe
MH F1 to E1	330'	Entire Pipe
MH D1 to MH C1	329'	Entire pipe
MH E1 to LS 4	20'	Entire Pipe
MH C1 to MH B1	329'	Entire pipe
MH B1 to MH A1	290'	Entire pipe

<u>STAGE 3:</u>

MH 30 to MH 12	88'	Entire pipe
MH 30 to MH 29	455'	Entire pipe
MH 28 to MH 29	467'	Entire pipe
MH 27 to MH 28	475'	Entire Pipe
MH 26 to MH 27	462'	Entire pipe
MH 26 to MH 25	276'	Entire pipe
MH 25 to LS 3	60'	Entire Pipe
MH 24 to LS 3	105'	Entire Pipe
MH 24 to MH 23	267'	Entire pipe
MH 23 to MH 22	329'	Entire pipe
MH 22 to MH 21	355'	Entire pipe
MH 21 to MH 20	332'	Entire pipe
MH 20 to MH 19	166'	Entire Pipe
MH 19 to MH 19A	37'	Entire pipe
MH 19A to MH 18	412'	Entire pipe
MH 18 to MH 17	450'	Entire Pipe
MH 17 to MH 16	441'	Entire pipe

MH 16 to MH 15	402'	Entire pipe
MH 12 to MH 15	800'	Entire pipe through overlap
MH 15 to MH 12	800'	Entire pipe through overlap

All pipes were jetted in their entirety, and are clean and blockage free upon completion. Additionally, all manholes were determined to be clear of accumulated silt. The system appears to flow and drain properly, and appears to be functioning as designed.

Please call us with questions or concerns.

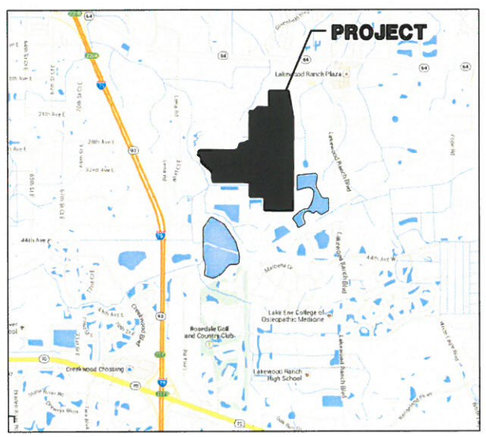
Thank you,

Ralph Calistri

Ralph Calistri - Florida Jetclean - 800-226-8013

PERMIT RENEWAL DRAWINGS FOR

MANATEE COUNTY - LENA ROAD CLASS I LANDFILL FILL SEQUENCE PLAN FROM 2016 TO 2036



LENA ROAD CLASS I LANDFILL
3333 LENA ROAD
BRADENTON, FLORIDA 34211

MANATEE COUNTY

MANATEE COUNTY
UTILITIES DEPARTMENT
SOLID WASTE DIVISION

3333 LENA ROAD
BRADENTON, FLORIDA 34211

OCTOBER 2015

LIST OF DRAWINGS

ATKINS

5300 W. BOY SCOUT BOULEVARD TAMPA, FLORIDA 33607 FBPR CERTIFICATE OF AUTHORIZATION NO.24

482 SOUTH KELLER ROAD
Orlando, Fl 32810-6101
TEL. (407) 647-7275
FAX. (407) 647-0624 www.atkinsglobal.com

ENGINEER'S PROJECT NO. 100040621

JOHN A. BANKS, JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

Name: JOHN BANKS
Florida P.E. No.: 39397

Signature Date 10-22-2015

MANATEE COUNTY - LENA ROAD LANDFILL - FILL SEQUENCE PLAN 2016-2036 (MARCH 2015)

NORTH

0 150 300 600
GRAPHIC SCALE
SCALE: 1" = 300'

AERIAL PHOTOGRAPH PROVIDED BY:
LF. ROOKS & ASSOCIATES, INC.
106 N.W. DRANE ST.
PLANT CITY, FL 33566
(813) 752-2113

DATE FLOWN: MARCH 4, 2015

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Orlando, Fl 32810-6101
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FAX. (407) 647-0624
www.atkinsglobal.com

5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	GENERAL SITE PLAN
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	
	SEQUENCE DRAWINGS	

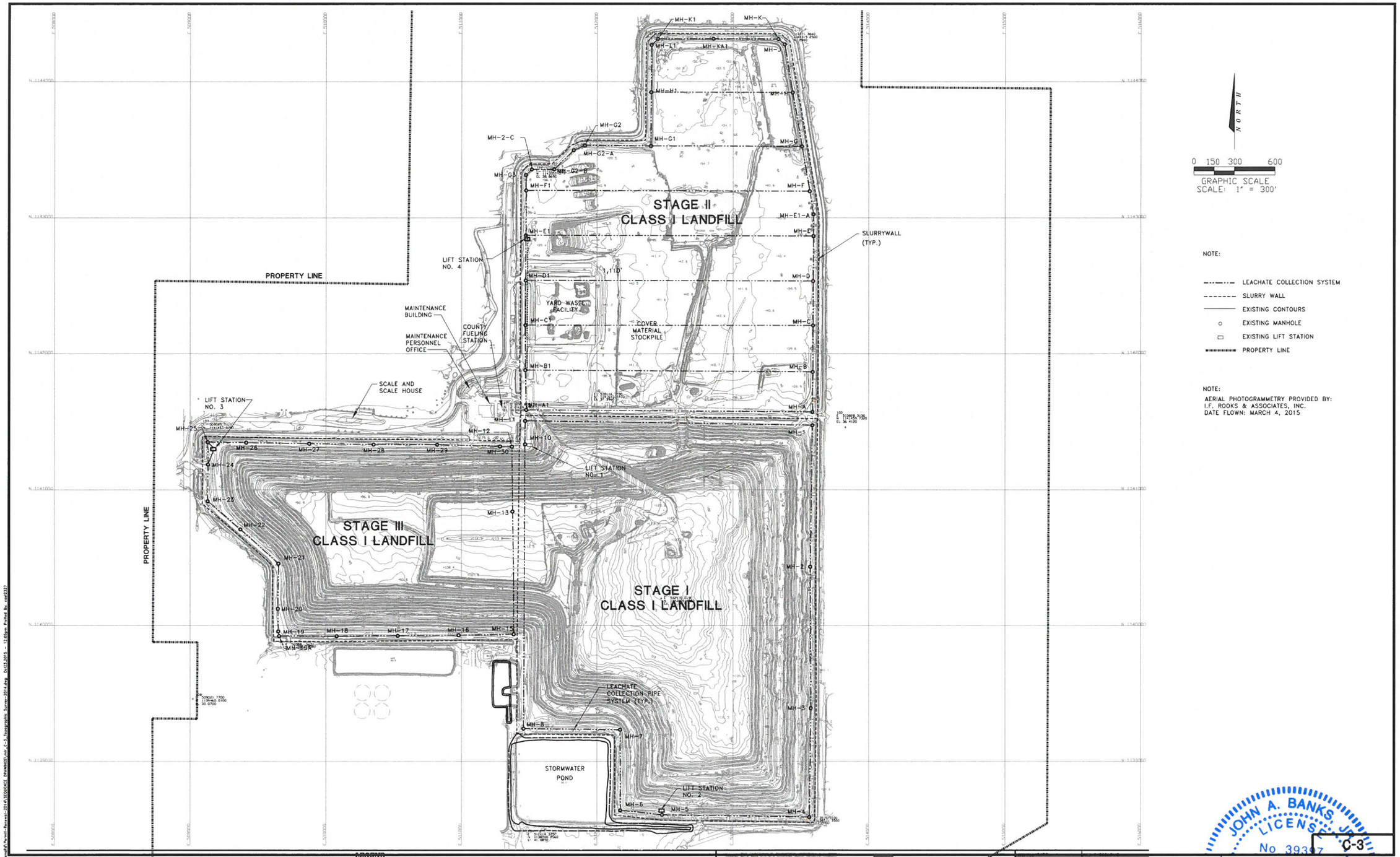
ORIGINAL JAN. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: B. Banks
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date
04-23-17

JOHN A. BANKS LICENSE NO. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET /#

C-2



NOTE:

- LEACHATE COLLECTION SYSTEM
- SLURRY WALL
- EXISTING CONTOURS
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PROPERTY LINE

NOTE:
AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

JOHN A. BANKS, JR.
LICENSE
No 39307
STATE OF FLORIDA
PROFESSIONAL ENGINEER

C-3

ATKINS
482 SOUTH KELLER ROAD
Orlando, Fl 32810-6101
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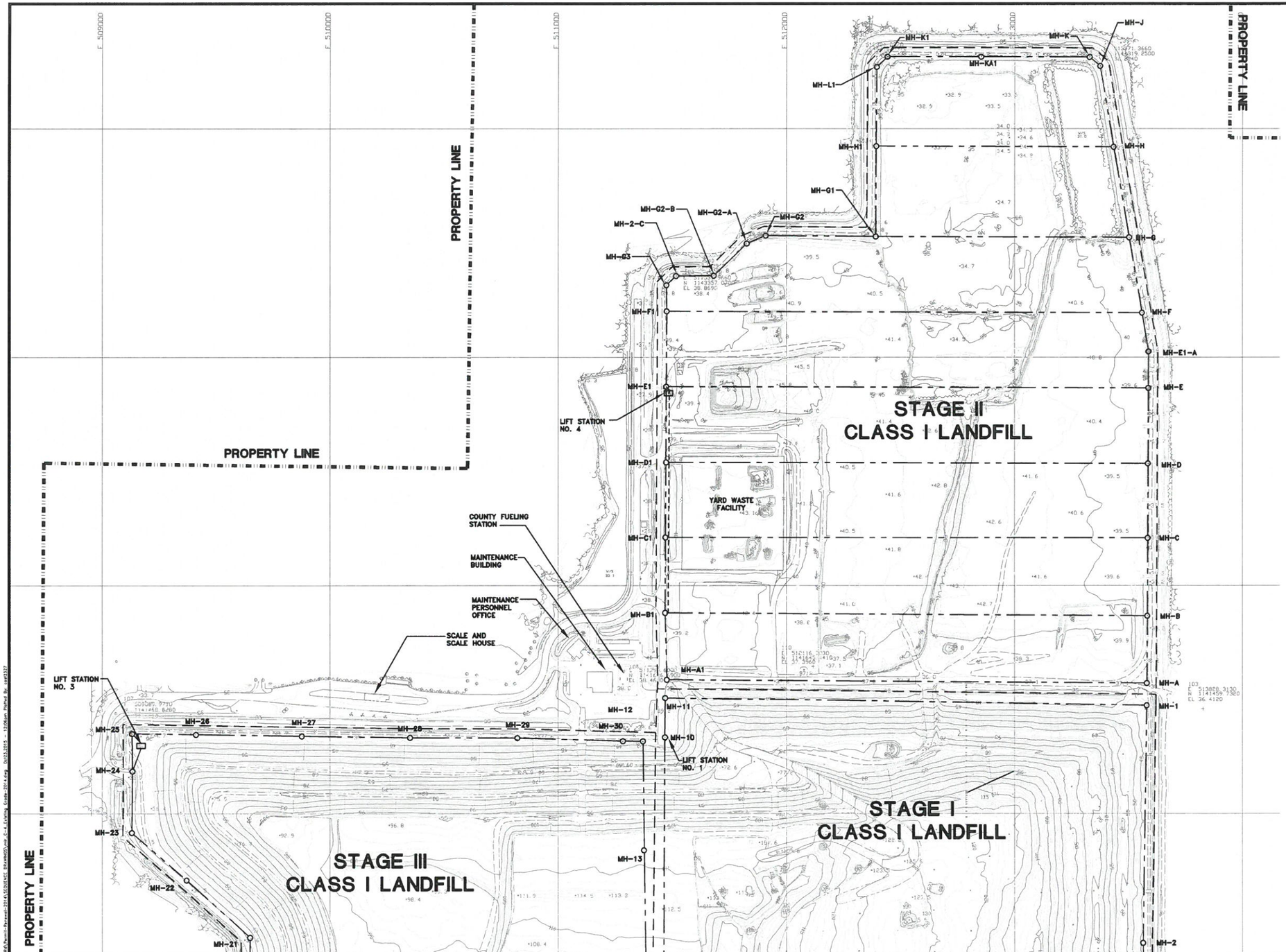
www.atkinsglobal.com
5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	SITE TOPOGRAPHIC SURVEY
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SURVEY DATE: MARCH 4, 2015
	SEQUENCE DRAWINGS	

ORIGINAL JAN. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: JOHN A. BANKS JR.
Florida P.E. No.: 39307
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOB NO. 100040621
DRAWN: RGC
DESIGN: RGC
CHECKED: JAB
Q.C.: JAB
SHEET /#



NORTH

0 100 200 400
GRAPHIC SCALE
SCALE: 1" = 200'

LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

NOTE:

AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

JOHN A. BANKS JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

C-4

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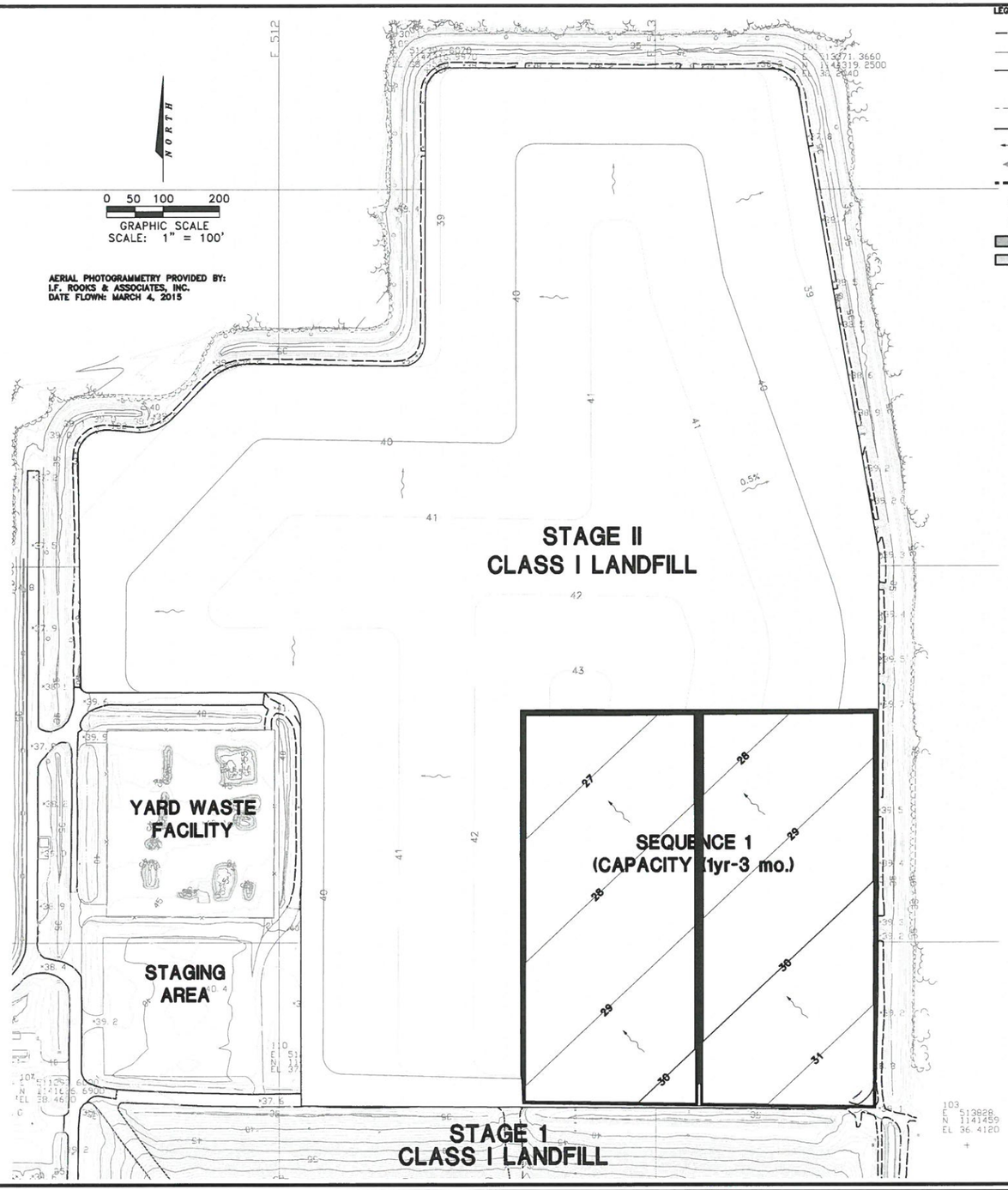
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	EXISTING GRADE
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	AS OF MARCH 4, 2015
	SEQUENCE DRAWINGS	

ORIGINAL JAN. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature: Date:

JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
P.C. JAB
SHEET /#

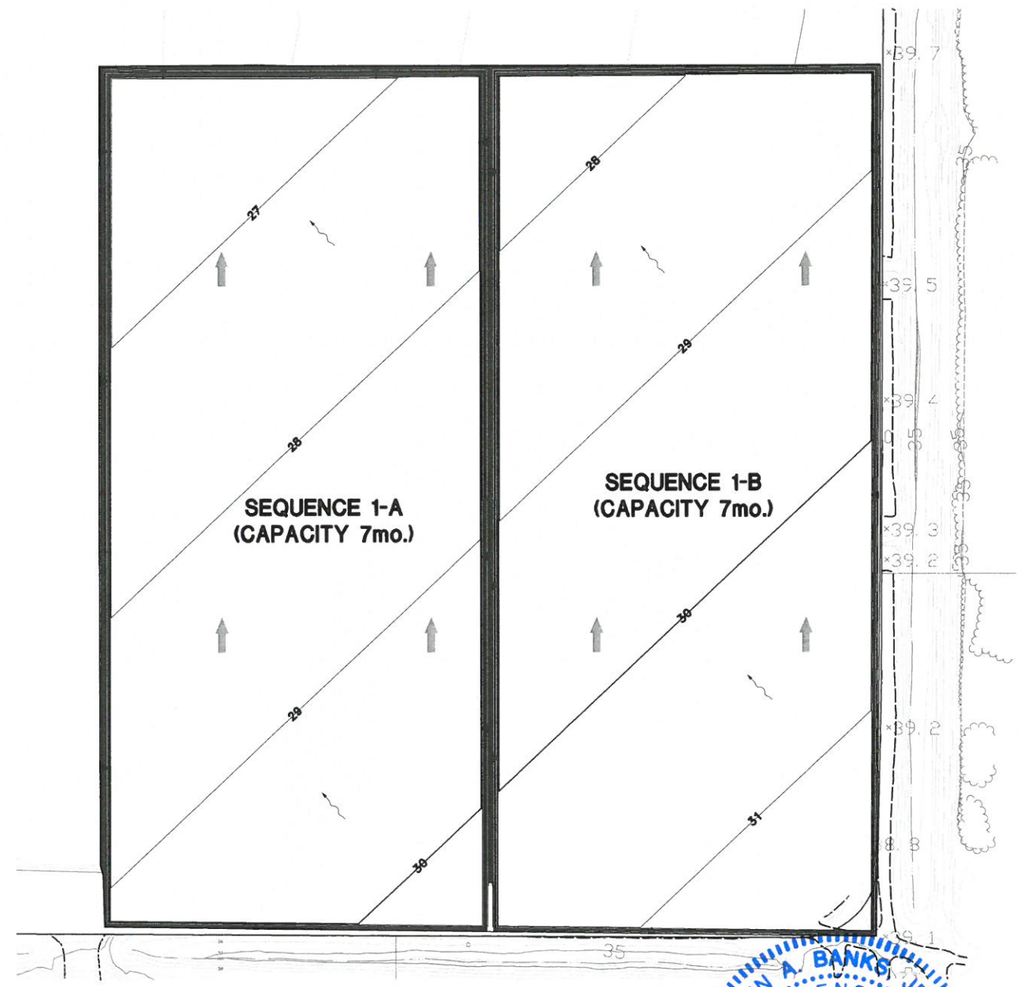


LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. THIS SEQUENCE INCLUDES THE EXCAVATION THE SOUTH EAST PORTION OF STAGE II IN TWO DIFFERENT PHASES. SEQUENCE 1-A SHALL BE EXCAVATED FIRST AND WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE ORIGINAL EXISTING GRADES. SEQUENCE 1-B SHALL BE EXCAVATED PRIOR TO SEQUENCE 1-A GETTING FULL AND WASTE SHALL BE PLACED IN THE SAME MANNER AS SEQUENCE 1-A. PLACEMENT OF WASTE ON EACH SUB-SEQUENCE SHALL START ON THE SOUTH SIDE AND PROCEED NORTH.
2. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
3. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE EXCAVATED AREA
4. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
5. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
6. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.



JOHN A. BANKS JR.
LICENSE
No 39397
PROFESSIONAL ENGINEER
STATE OF FLORIDA

C-5

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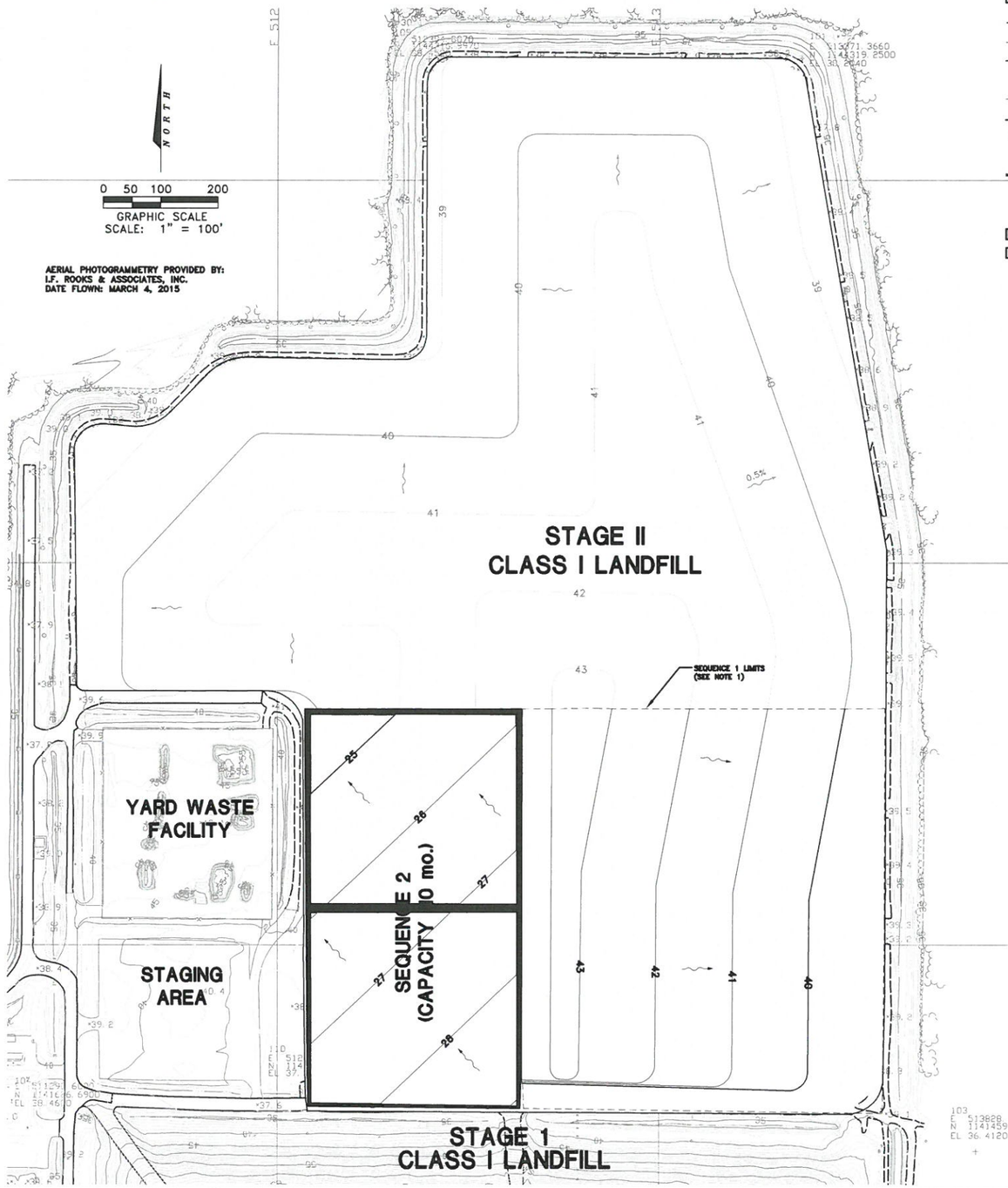
www.atkinsglobal.com
5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

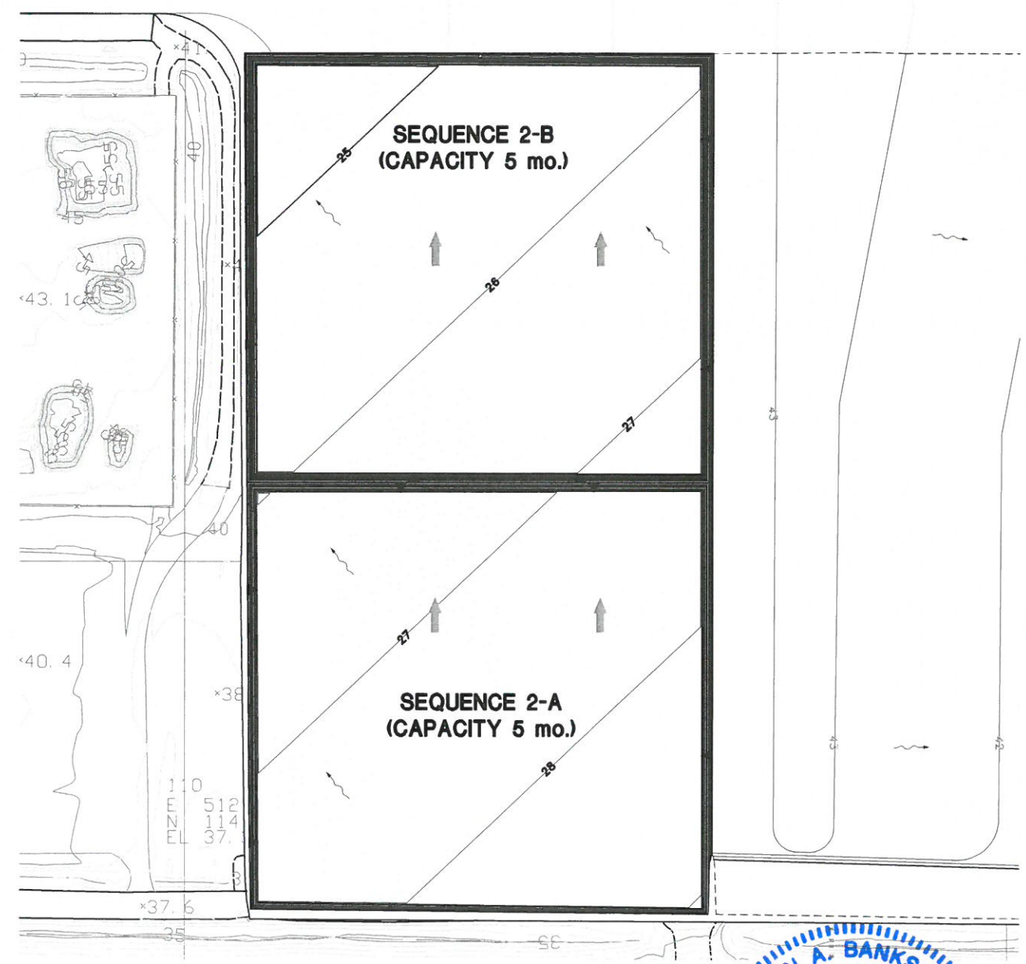
CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE I
	SEQUENCE DRAWINGS	CAPACITY (1 YEAR AND 3 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature: Date:

JOB NO. 10040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET /#





LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. SEQUENCE 1 SHALL BE FILLED TO THE GRADES THAT EXISTED PRIOR TO EXCAVATION OF THE SEQUENCE.
2. THIS SEQUENCE INCLUDES THE EXCAVATION THE SOUTH WEST PORTION OF STAGE II IN TWO DIFFERENT PHASES. SEQUENCE 2-A SHALL BE EXCAVATED FIRST AND WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE ORIGINAL EXISTING GRADES. SEQUENCE 2-B SHALL BE EXCAVATED PRIOR TO SEQUENCE 2-A GETTING FULL AND WASTE SHALL BE PLACED IN THE SAME MANNER AS SEQUENCE 2-A.
3. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
4. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE EXCAVATED AREA
5. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
6. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
7. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.

C-6

ATKINS
482 SOUTH KELLER ROAD
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www.atkinsglobal.com
5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE II
	SEQUENCE DRAWINGS	CAPACITY (10 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Name: JOHN A. BANKS JR.
Florida P.E. No. 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOHN A. BANKS, JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET /#

NORTH

0 50 100 200

GRAPHIC SCALE
SCALE: 1" = 100'

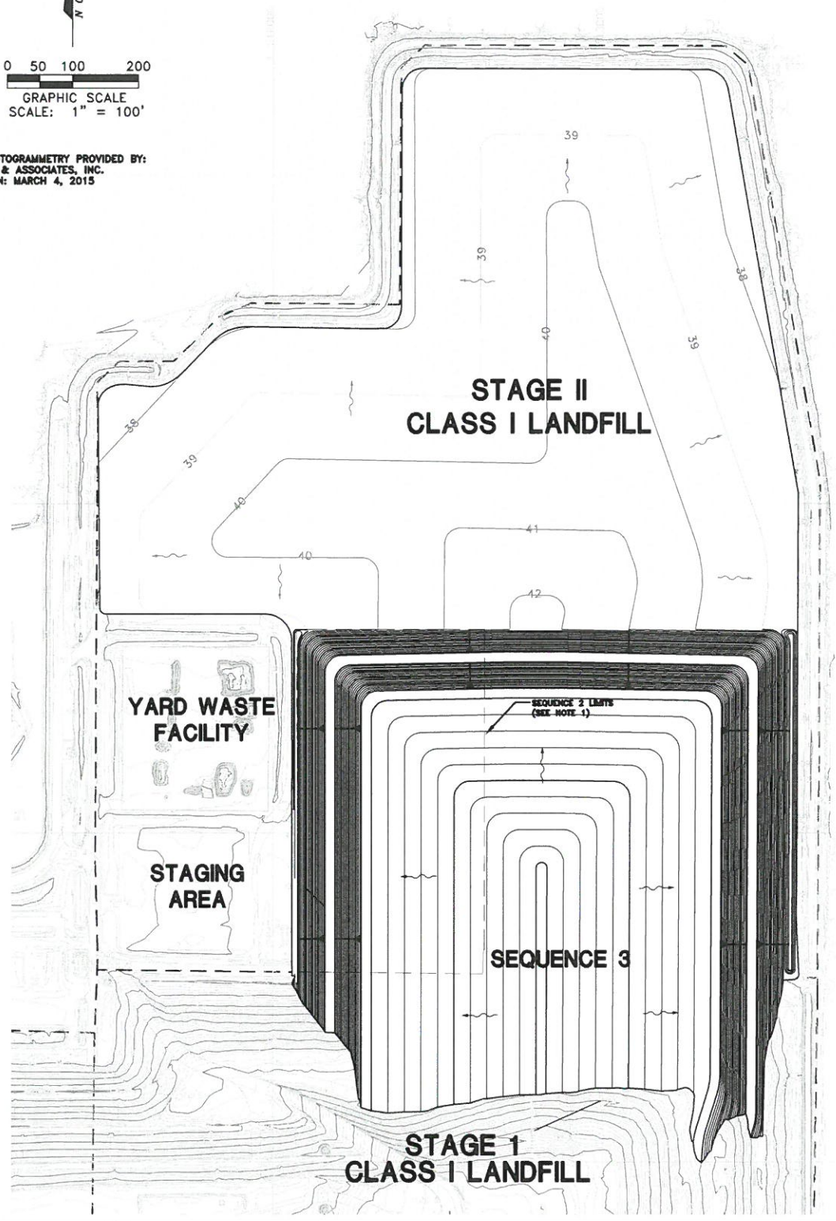
AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

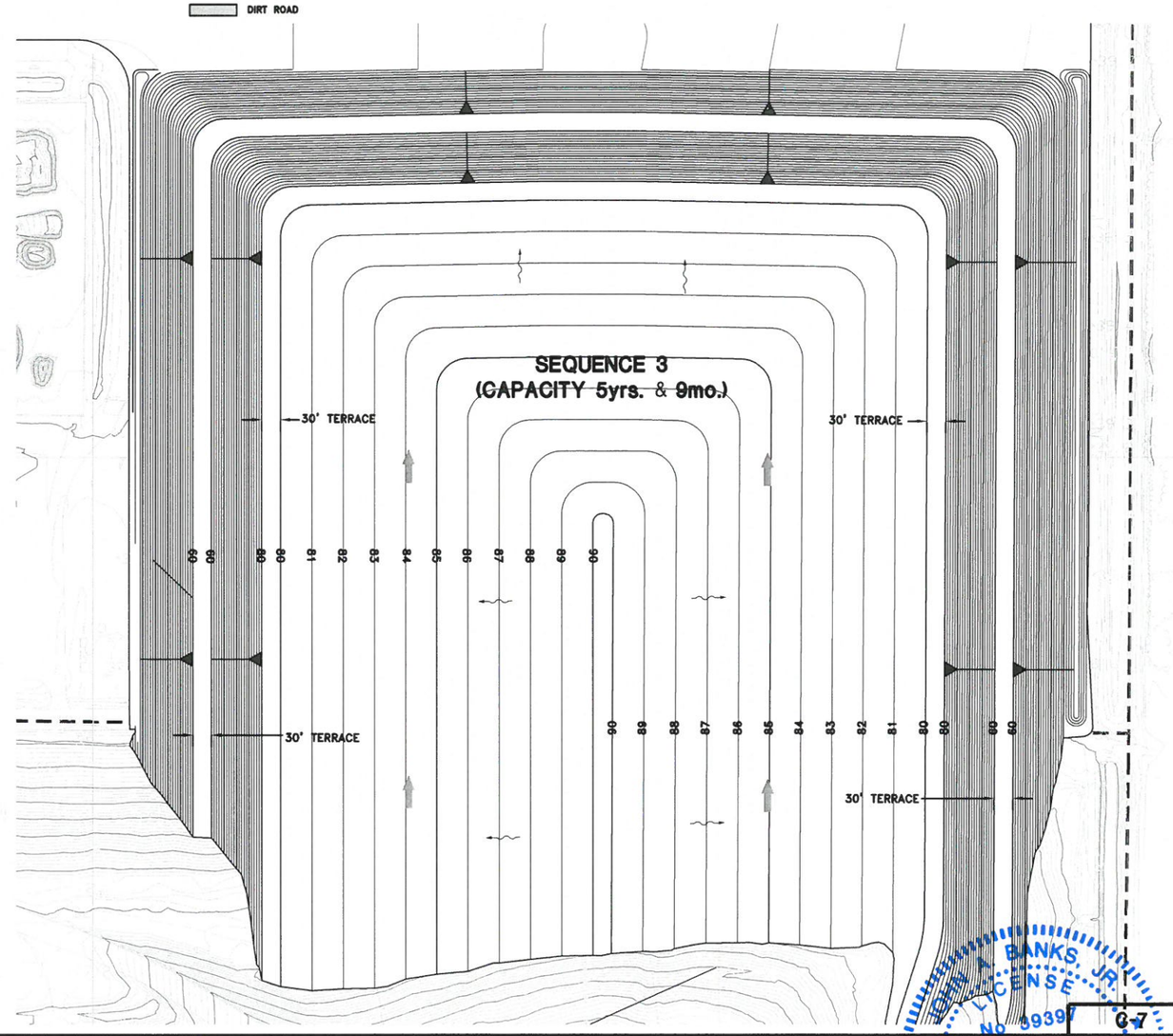
LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. SEQUENCE 2 SHALL BE FILLED TO THE GRADES EXISTING PRIOR TO EXCAVATION OF THE SEQUENCE.
2. THIS SEQUENCE INCLUDES THE FILLING OF THE SOUTH PORTION OF STAGE II. FILL SHALL START ON THE SOUTH SIDE OF THE FILL SEQUENCE AND PROCEED NORTH. WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE GRADES SHOWN FOR THIS SEQUENCE.
3. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
4. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE FILL AREA.
5. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
6. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
7. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.





JOHN A. BANKS, JR. LICENSE NO. 39397 STATE OF FLORIDA

C-7

ATKINS

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TEL. (407) 647-7275
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www.atkinsglobal.com

5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE 3
	SEQUENCE DRAWINGS	CAPACITY (5 YEARS- 9 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Name: JOHN A. BANKS, JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date
10-23-15

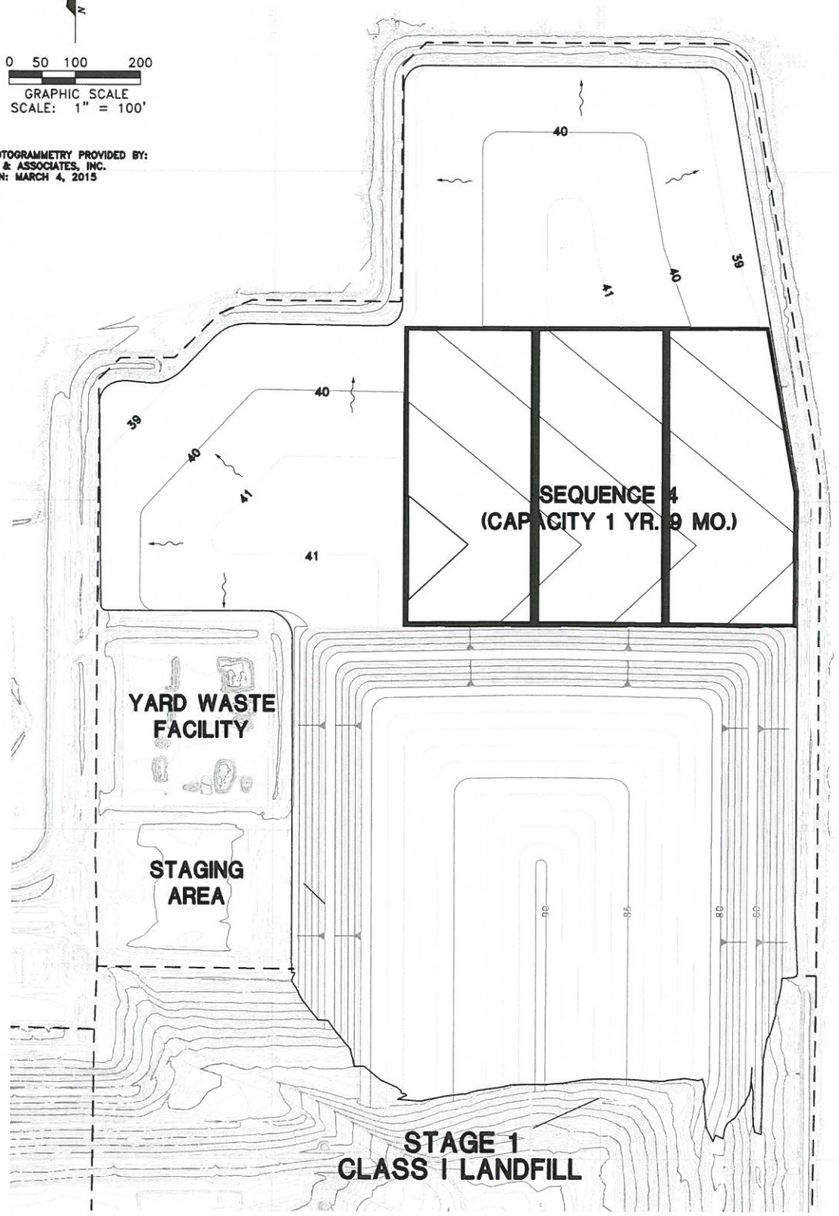
JOB NO: 10040621
DRAWN: RGC
DESIGN: RGC
CHECKED: JAB
Q.C.: JAB
SHEET /#

NORTH

0 50 100 200

GRAPHIC SCALE
SCALE: 1" = 100'

AERIAL PHOTOGRAMMETRY PROVIDED BY:
I.F. RODICS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

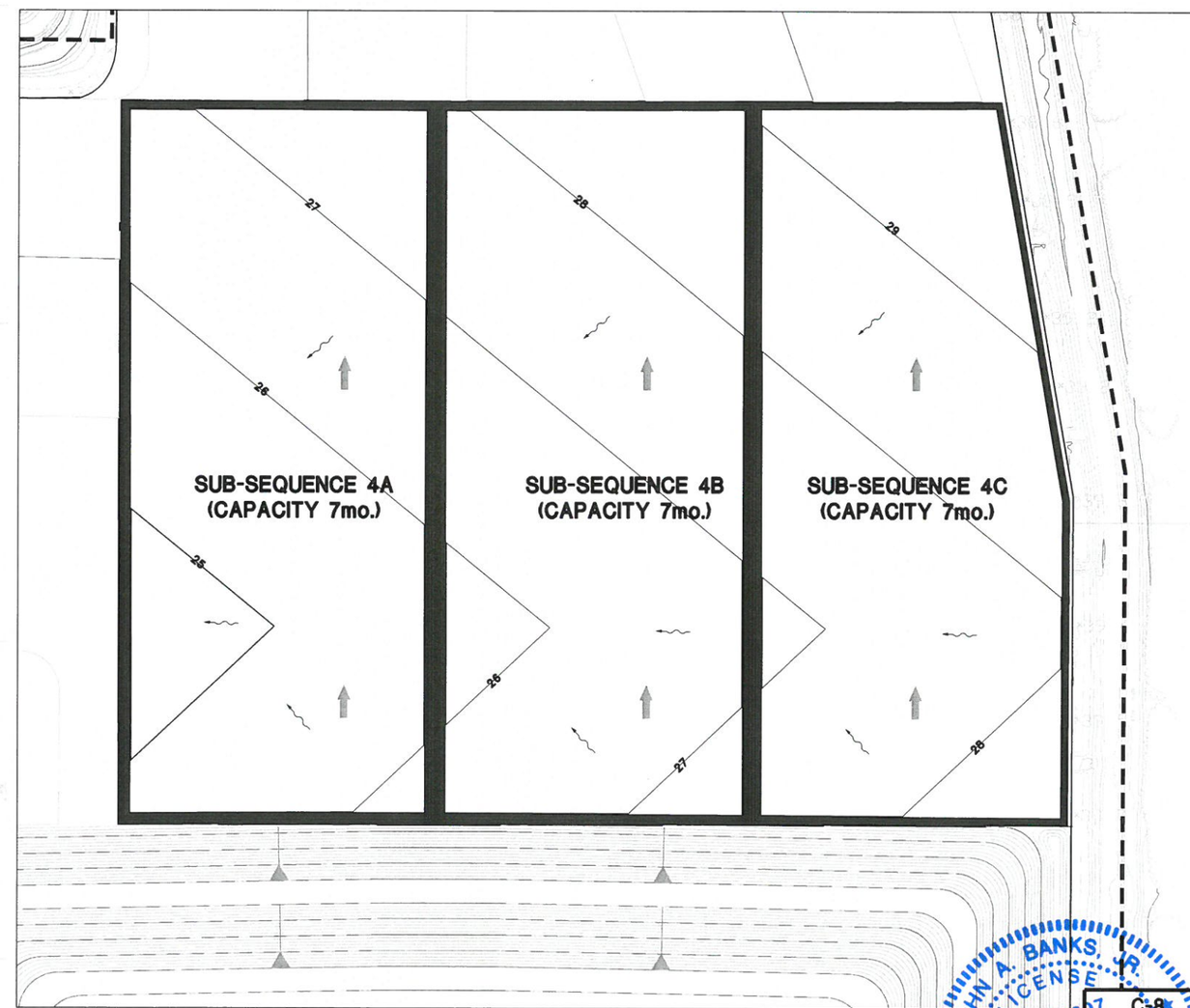


LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. THIS SEQUENCE INCLUDES THE EXCAVATION OF THE CENTRAL PORTION OF STAGE II NORTH OF FILL SEQUENCE 3 IN THREE DIFFERENT PHASES. EXCAVATION SHALL START ON THE WEST SIDE OF THE FILL SEQUENCE AND PROCEED EAST. EACH SUB-SEQUENCE SHALL BE FILLED STARTING FROM THE SOUTH AND PROCEEDING NORTH. WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE GRADES SHOWN FOR THIS SEQUENCE.
2. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
3. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE FILL AREA.
4. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
5. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
6. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.



C-8

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5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE 4
	SEQUENCE DRAWINGS	CAPACITY (1 YEARS- 9 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
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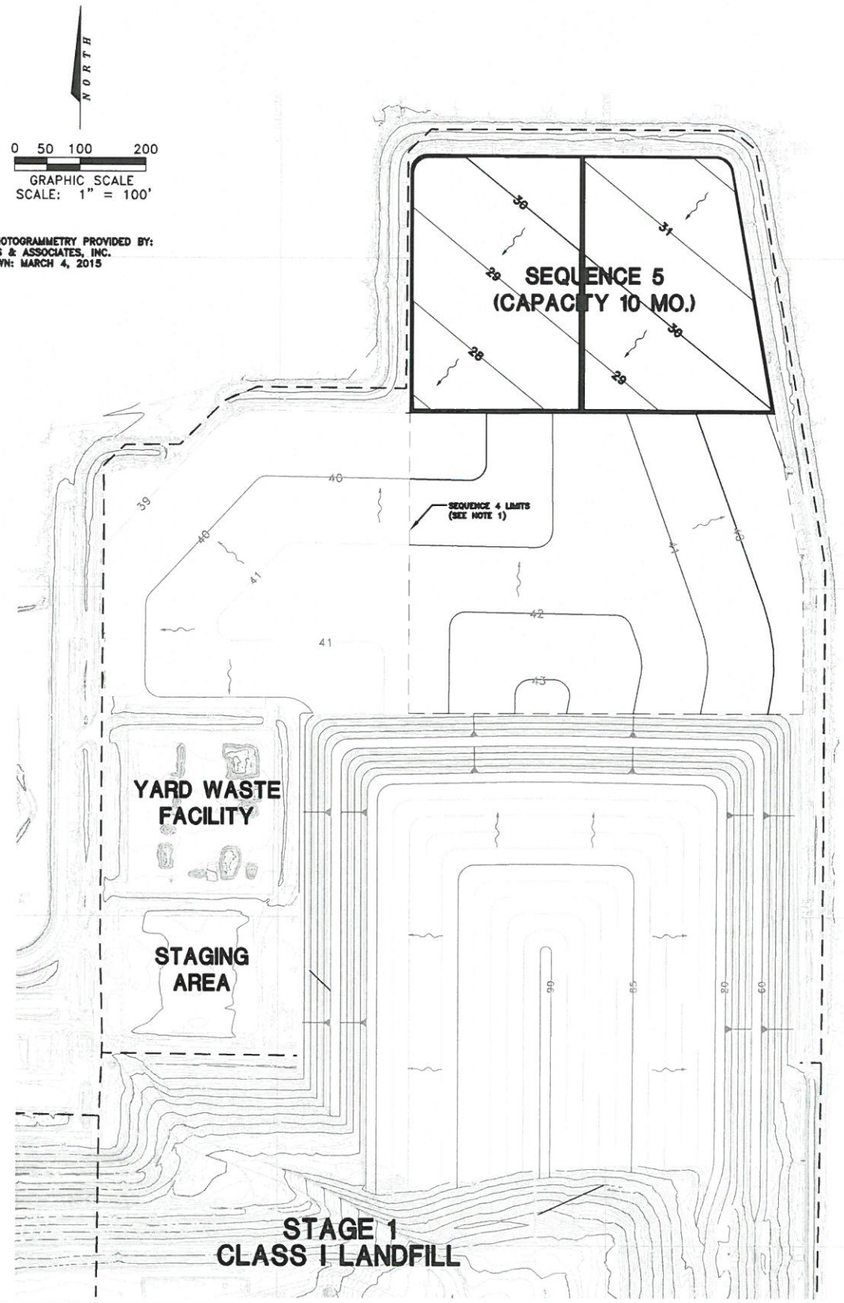
Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOHN A. BANKS, JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

JOB NO. 10004621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET # /

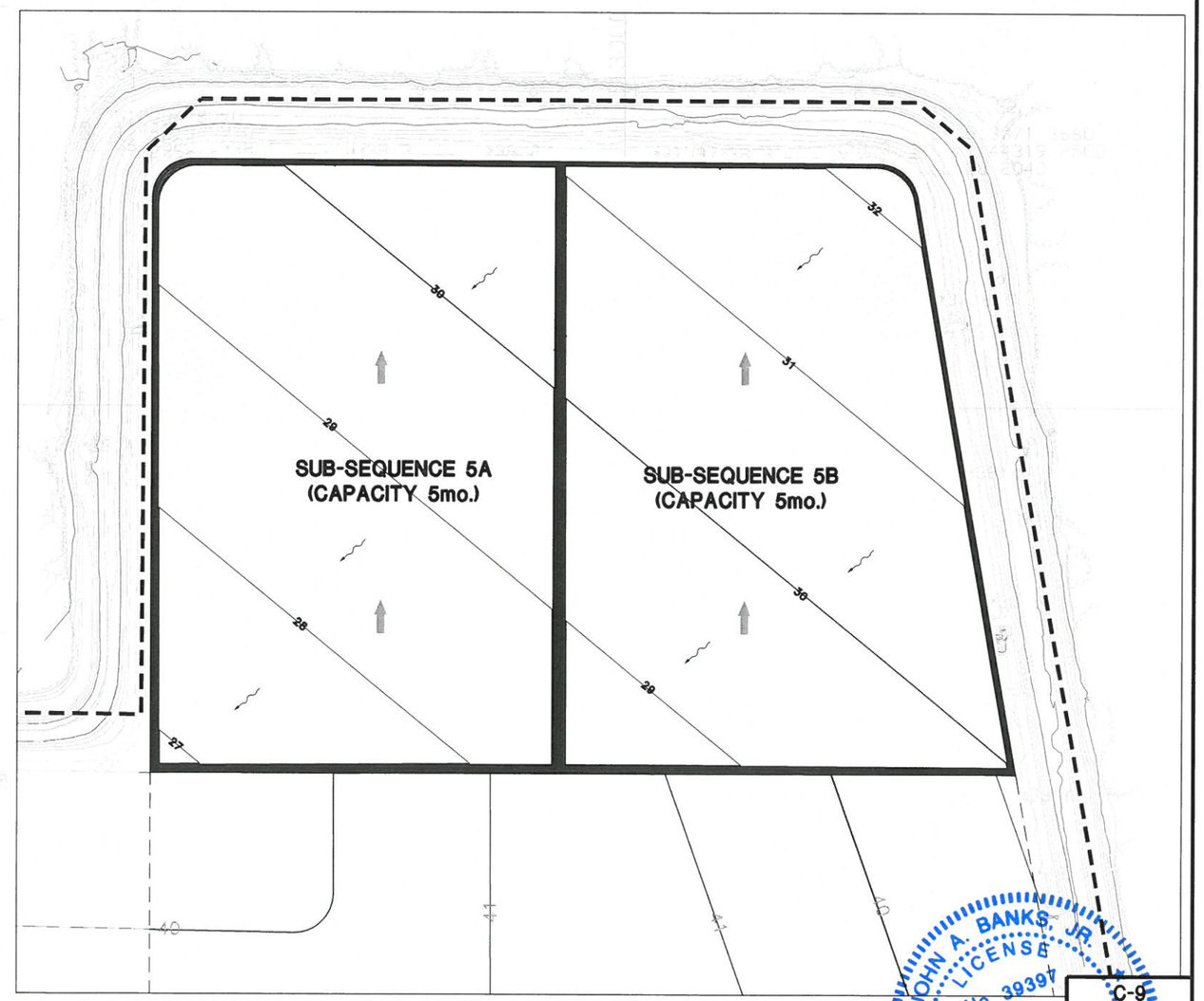


LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. SEQUENCE 4 SHALL BE FILLED TO THE GRADES THAT EXISTED PRIOR TO EXCAVATION OF THE SEQUENCE.
2. THIS SEQUENCE INCLUDES THE EXCAVATION THE NORTH PORTION OF STAGE II IN TWO DIFFERENT PHASES. SEQUENCE 5–A SHALL BE EXCAVATED FIRST AND WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE ORIGINAL EXISTING GRADES. SEQUENCE 5–B SHALL BE EXCAVATED PRIOR TO SEQUENCE 5–A GETTING FULL AND WASTE SHALL BE PLACED IN THE SAME MANNER AS SEQUENCE 5–A.
3. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
4. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE EXCAVATED AREA
5. INITIAL COVER, CONSISTING OF 6–INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
6. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12–INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6–INCHES OF INITIAL COVER.
7. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.



C-9

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TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE 5
	SEQUENCE DRAWINGS	CAPACITY (10 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
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11.
12.

Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date
PROFESSIONAL ENGINEER
JOHN A. BANKS, JR.
LICENSE
No. 39397
STATE OF FLORIDA

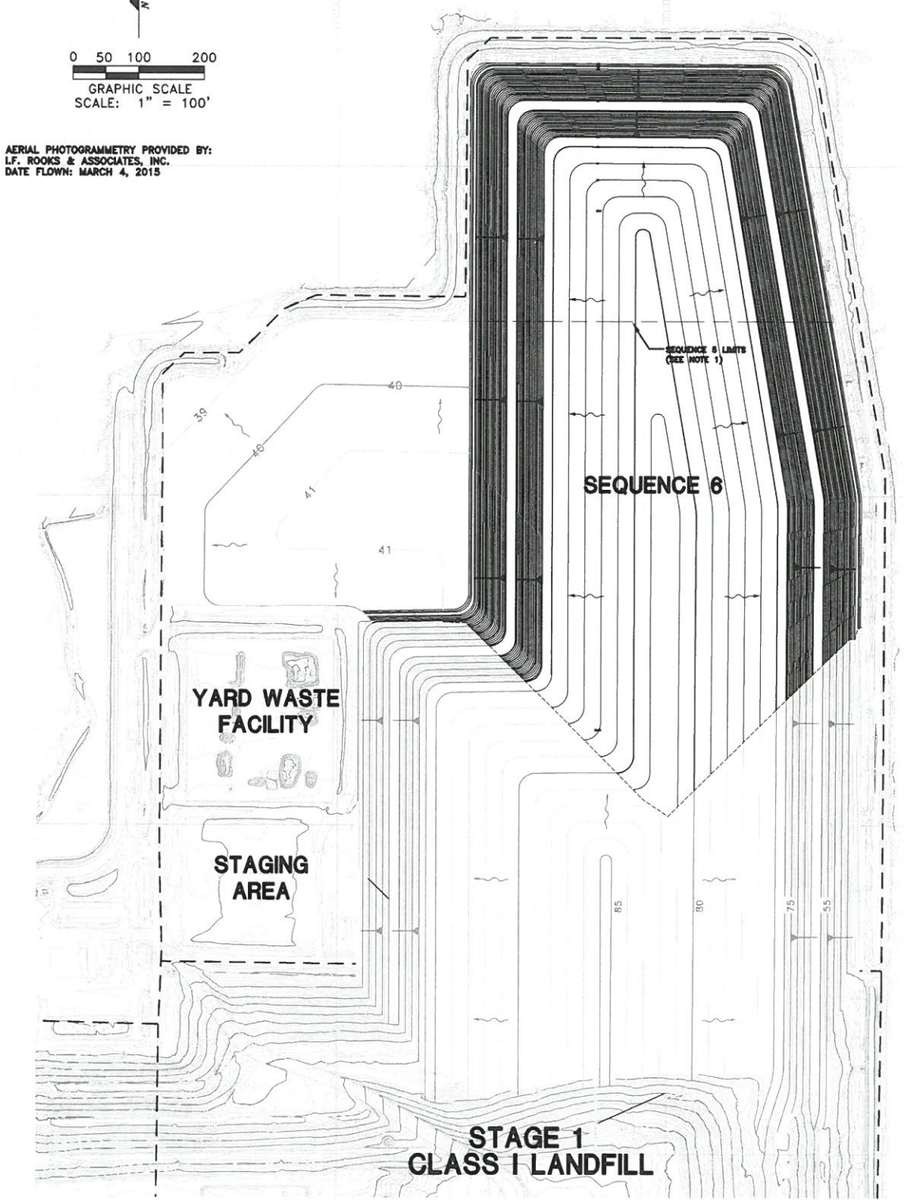
JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET /#

NORTH

0 50 100 200

GRAPHIC SCALE
SCALE: 1" = 100'

AERIAL PHOTOGRAMMETRY PROVIDED BY:
L.F. ROOKS & ASSOCIATES, INC.
DATE FLOWN: MARCH 4, 2015

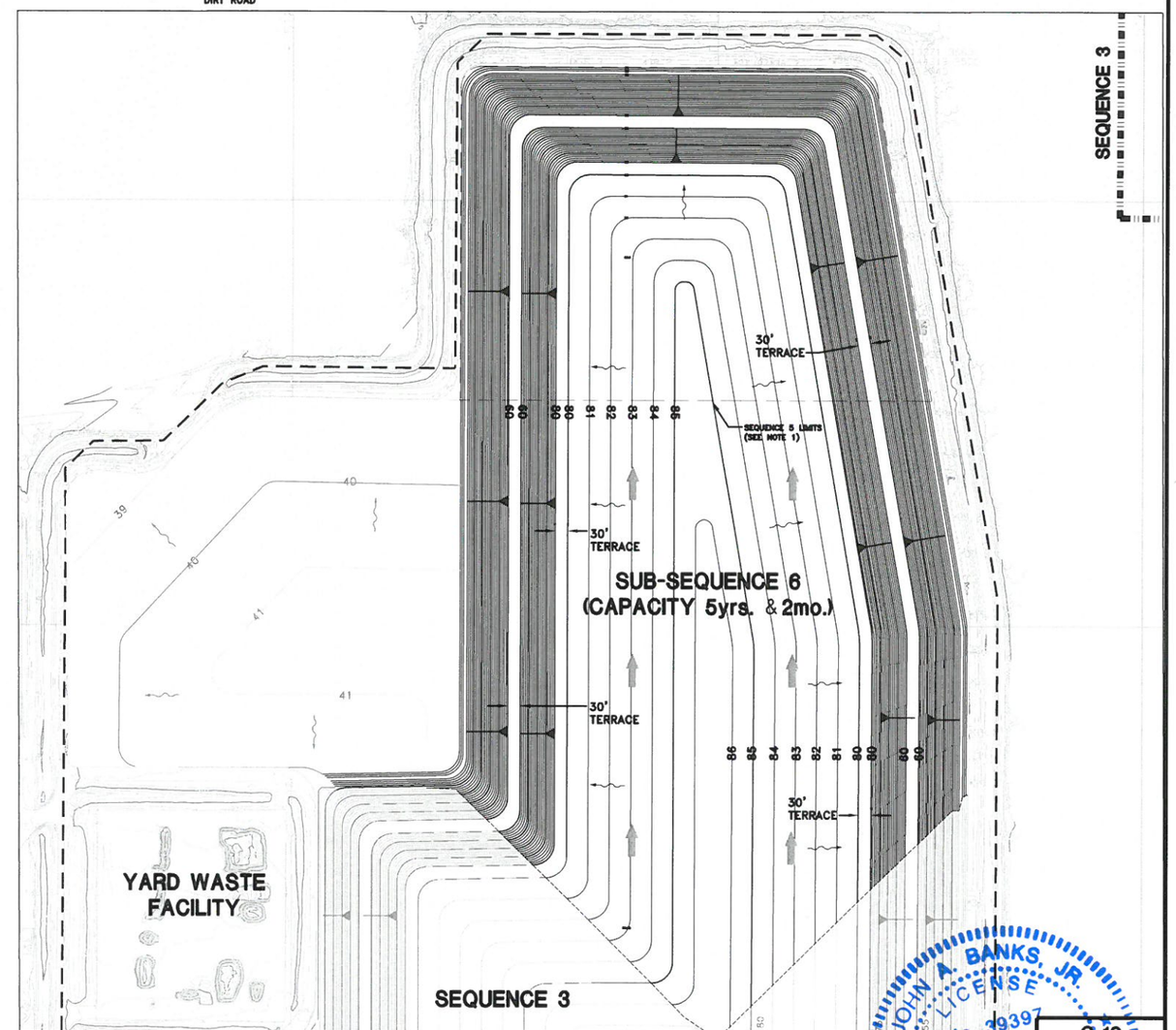


LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. SEQUENCE 5 SHALL BE FILLED TO THE GRADES THAT EXISTED PRIOR TO EXCAVATION OF THE SEQUENCE.
2. THIS SEQUENCE INCLUDES THE FILLING OF THE NORTH PORTION OF STAGE II. FILL SHALL START ON THE SOUTH SIDE OF THE FILL SEQUENCE AND PROCEED NORTH. WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE GRADES SHOWN FOR THIS SEQUENCE.
3. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
4. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE FILL AREA.
5. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
6. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
7. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.



C-10

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5300 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE 6
	SEQUENCE DRAWINGS	CAPACITY (5 YEARS - 2 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
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12.

Name: JOHN A. BANKS JR.
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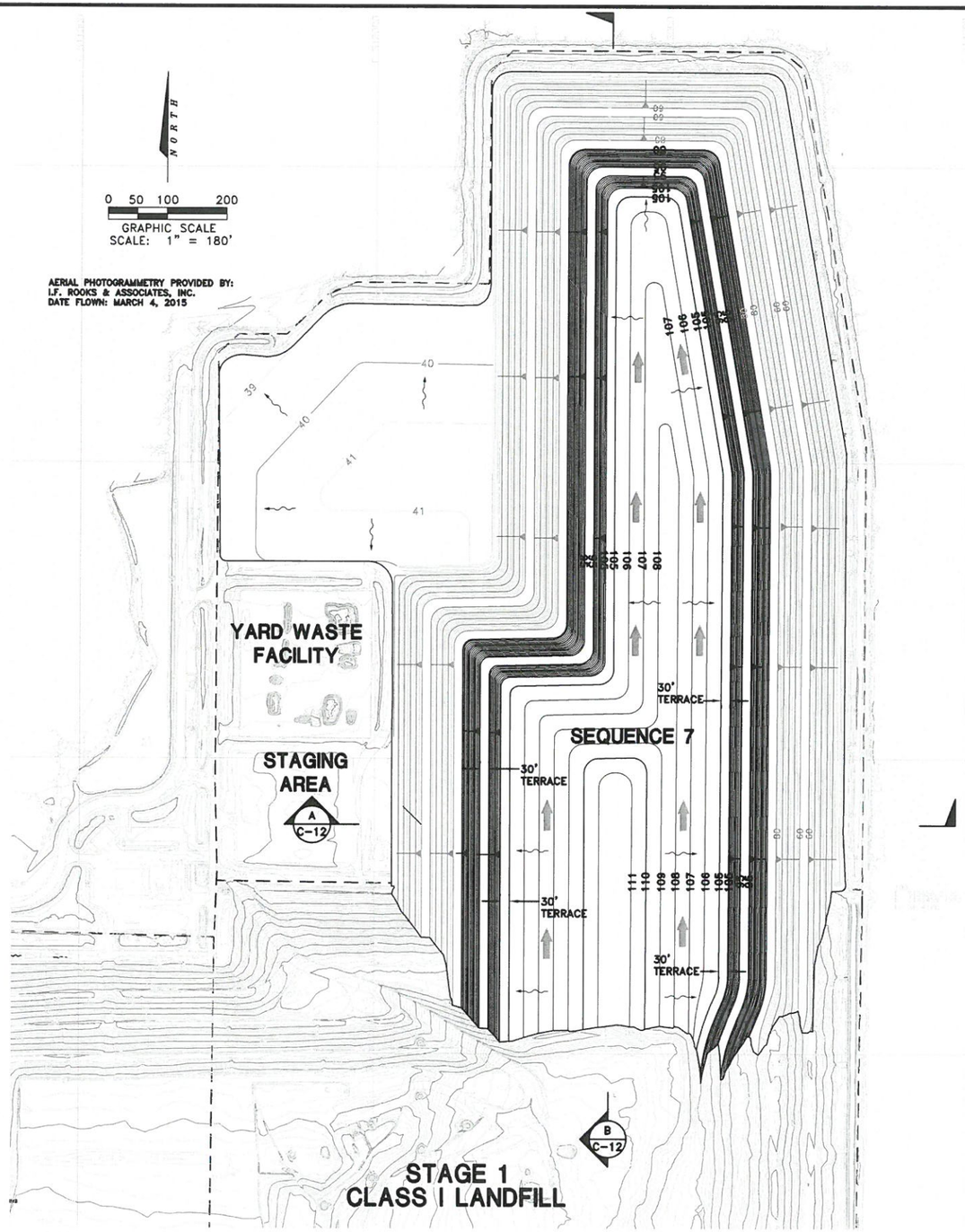
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOHN A. BANKS, JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

JOB NO: 100040621
DRAWN: RGC
DESIGN: RGC
CHECKED: JAB
QC: JAB
SHEET /#



LEGEND:

- LEACHATE COLLECTION SYSTEM
- PROPOSED INTERMEDIATE CONTOURS
- PROPOSED INDEX CONTOURS
- EXISTING CONTOURS
- CONTRUCTION LINES
- SLOPE BREAK SYMBOL
- STORMWATER FLOW
- DIRECTION OF FILLING
- STORMWATER DRAIN PIPE
- EXISTING MANHOLE
- EXISTING LIFT STATION
- PAVED ROAD
- DIRT ROAD

GENERAL NOTES:

1. THIS SEQUENCE INCLUDES THE FILLING OF THE TOP PORTION OF SEQUENCE 6. FILL SHALL START ON THE SOUTH SIDE OF THE FILL SEQUENCE AND PROCEED NORTH. WASTE SHALL BE PLACED AND COMPACTED IN LIFTS UP TO THE GRADES SHOWN FOR THIS SEQUENCE.
2. OPERATORS WILL ACHIEVE THE ELEVATIONS SHOWN ON THIS SEQUENCE BY USING THEIR CAD AIDED EARTHWORK SYSTEM (CAES) GIS BASED EQUIPMENT MOUNTED ON THE LANDFILL COMPACTORS. AT THE END OF EACH WORKING DAY THE WORKING FACE GRADES AND DEGREE OF COMPACTION WILL BE CHECKED BY MAPPING THE AREA OF THE WORKING FACE WITH THE CAES SYSTEM MOUNTED ON THE COMPACTORS.
3. A TEMPORARY BERM MIGHT BE NEEDED TO DIVERT THE RUNOFF AWAY FROM THE FILL AREA.
4. INITIAL COVER, CONSISTING OF 6-INCHES OF SOIL SHALL BE APPLIED AT THE END OF EACH WORKING DAY OVER EXPOSED WASTE. TEMPORARY COVER SUCH AS TAPAULINS MAYBE USED IF WASTE WILL NOT BE EXPOSED FOR MORE THAN 18 HOURS. INCREASE THE FREQUENCY OF APPLICATION IF WIND AND OR RAIN DISPERSE WASTE.
5. OPERATORS WILL ACHIEVE THE ELEVATIONS IN AREAS THAT WILL NOT RECEIVE WASTE WITHIN 180 DAYS, APPLY A 12-INCHES INTERMEDIATE COVER SOIL OVER THE EXISTING 6-INCHES OF INITIAL COVER.
6. ALL AREAS WITH INITIAL OR INTERMEDIATE COVER SHALL BE INSPECTED WEEKLY DEPENDING ON THE WEATHER CONDITIONS FOR DAMAGES DUE TO EROSION. DAMAGED AREAS SHALL BE REPAIRED QUICKLY AS OPERATIONS PERMIT. DAMAGED AREAS SHALL BE COVERED WITH SOD, SEED, OR MULCH TO PROTECT THE AREAS FROM ADDITIONAL DAMAGE.

C-11

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FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	SEQUENCE 7
	SEQUENCE DRAWINGS	CAPACITY (5 YEARS - 4 MONTHS)

ORIGINAL JAN. 2015
REVISIONS:
1. APRIL 2010
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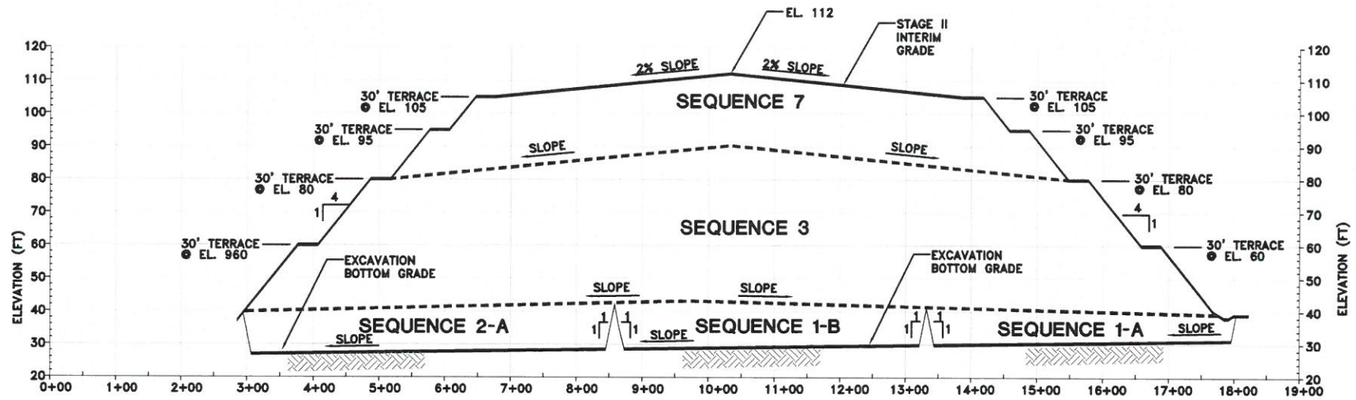
12.

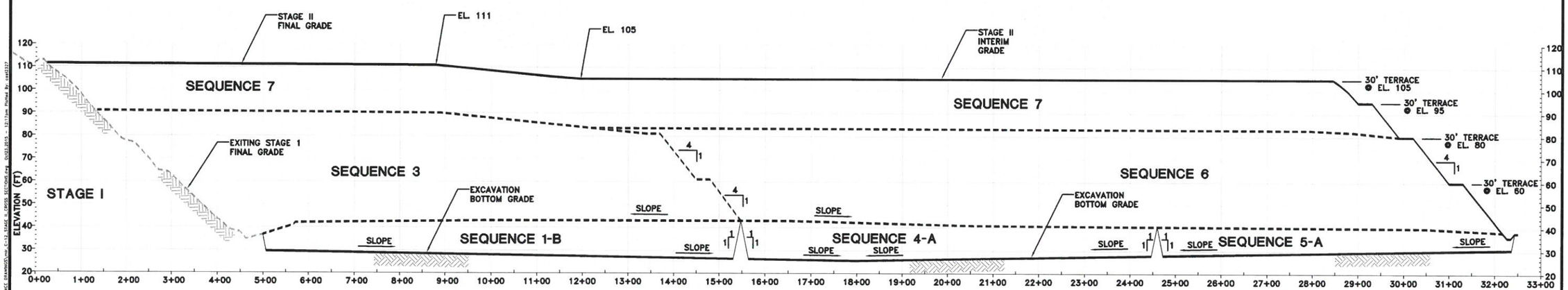
JOHN A. BANKS, JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
P.E. JAB
SHEET / #



SECTION A
SCALE: N.T.S.
C-11



SECTION B
SCALE: N.T.S.
C-11

JOHN A. BANKS, JR. LICENSE No. 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

C-12

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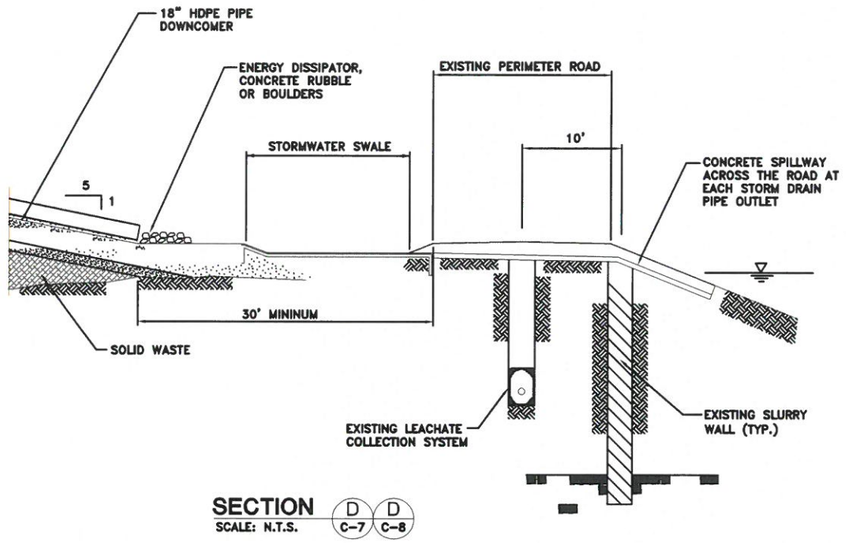
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II - LANDFILL
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	CROSS SECTIONS
	SEQUENCE DRAWINGS	

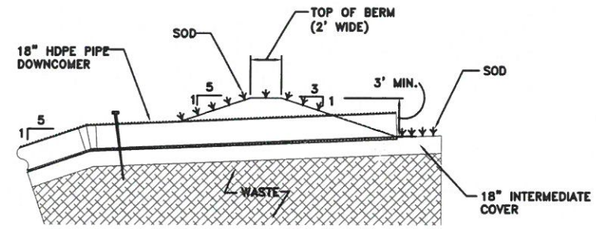
ORIGINAL JAN. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: JOHN A. BANKS JR.
Florida P.E. No. 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

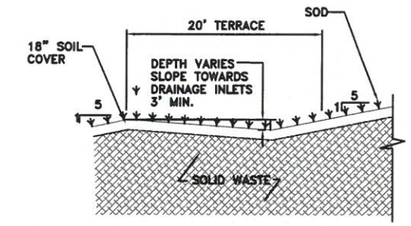
JOB NO. 100040621
DRAWN RGC
DESIGN RGC
CHECKED JAB
Q.C. JAB
SHEET /#



SECTION D C-7 D C-8
SCALE: N.T.S.



SECTION E E E E
C-6 C-7 C-8 C-10
SCALE: N.T.S.



SECTION F F F F
C-6 C-7 C-8 C-10
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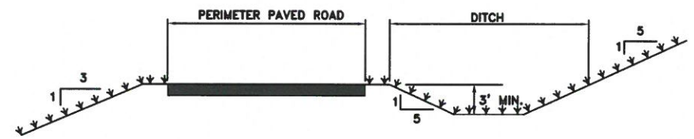
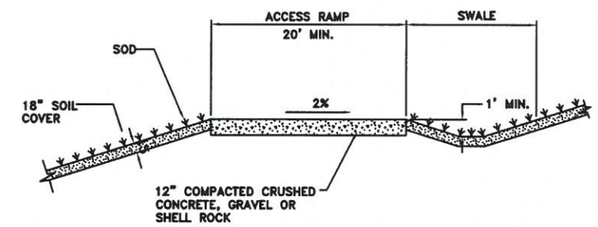


PERIMETER ROAD G G G G G G
C-5 C-6 C-7 C-8 C-9 C-10
SCALE: N.T.S.



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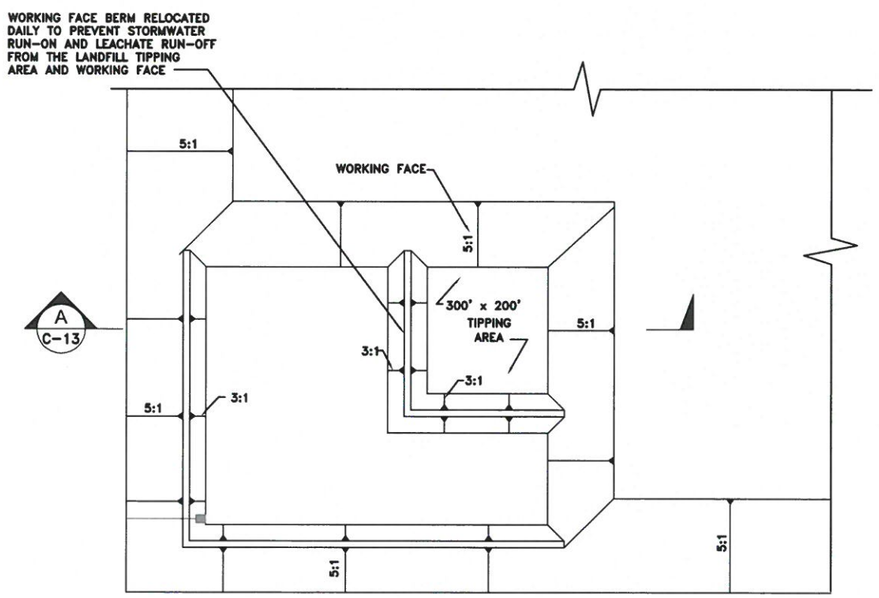
C-5 C-6 C-7 C-8 C-10
SCALE: N.T.S.



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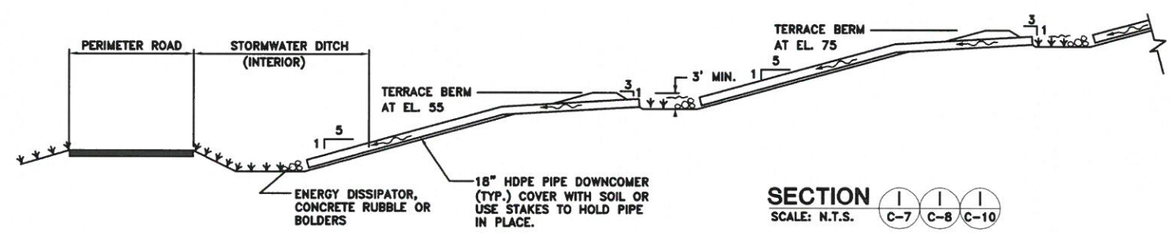
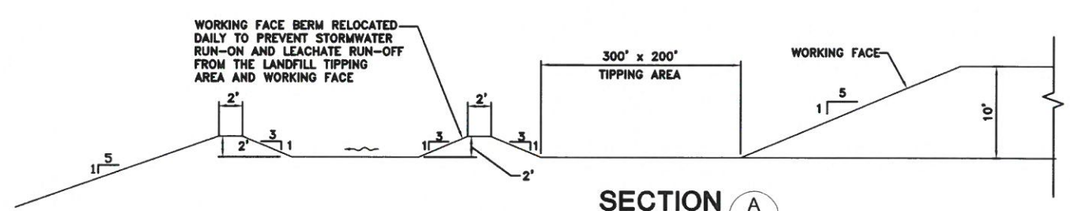


SECTION I I I
C-7 C-8 C-10
SCALE: N.T.S.



SECTION A
C-13

TYPICAL WORKING FACE DETAIL

SCALE: N.T.S.

1 -REVISED "SECTION D" STORMWATER ENERGY DISIPATOR DETAIL.
-REVISED "SECTION I" TO SHOW THE STORMWATER DOWNCOMERS ABOVE GRADE WITHOUT THE STORMWATER INLETS AND THE ENERGY DISIPATORS AS CONCRETE RUBBLE OR BOLDERS.
-REVISED "SECTION E" REMOVED TEXT "TEMPORARY".

JOHN A. BANKS, JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

C-13

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FBPR CERTIFICATE OF AUTHORIZATION NO.24

CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	DETAILS
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	
	SEQUENCE DRAWINGS	

ORIGINAL JAN. 2015
REVISIONS:
1. MAY 5, 2015
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Name: JOHN A. BANKS JR.
Florida P.E. No.: 39397
Address: ATKINS
482 S. Keller Road
Orlando, FL 32810-6101
Signature Date

JOB NO. 100040621
DRAWN RGC
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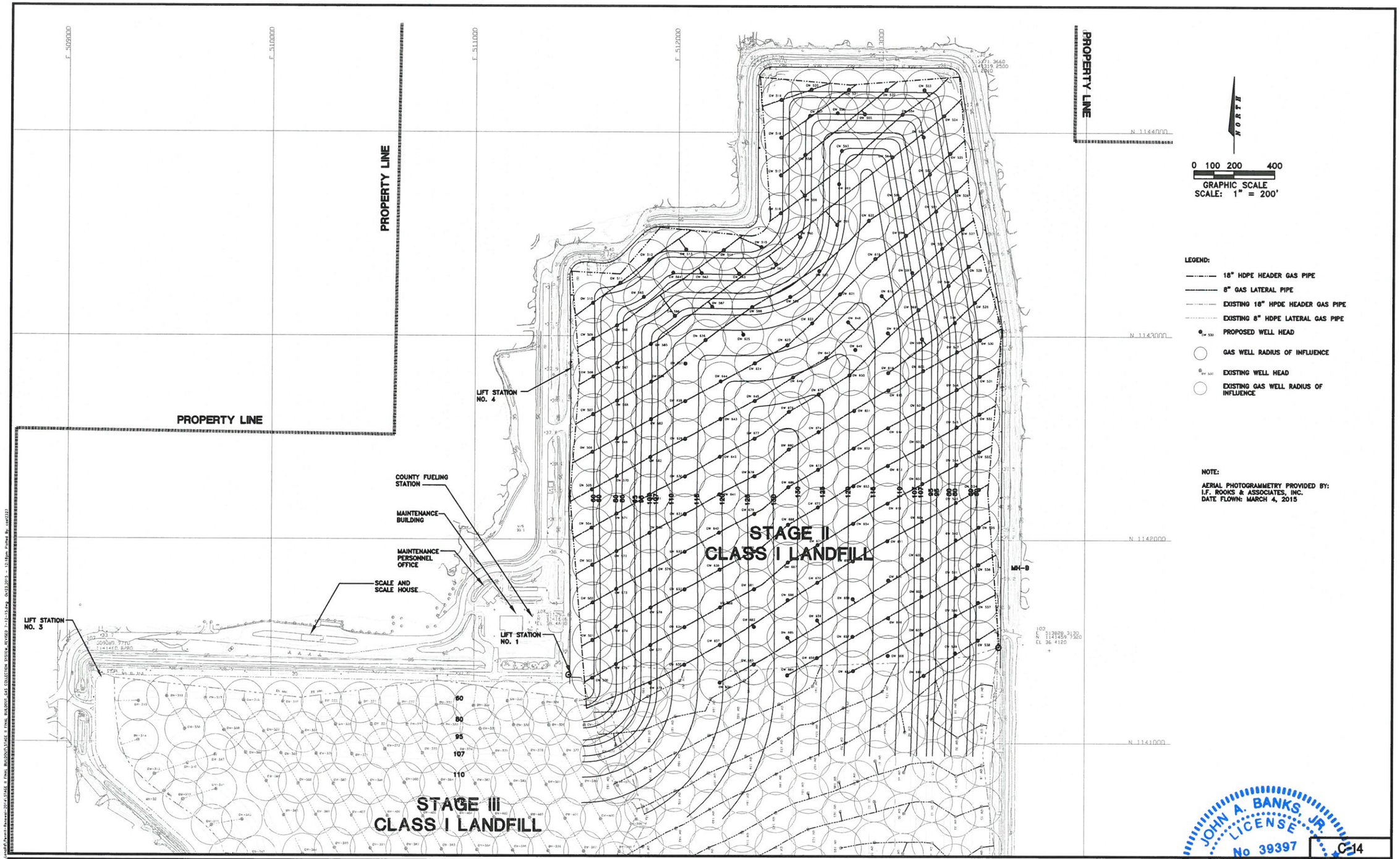
Q.C. JAB
SHEET /#



C-14

JOHN A. BANKS, JR. LICENSE No 39397 STATE OF FLORIDA PROFESSIONAL ENGINEER

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TAMPA, FLORIDA 33607
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CLIENT	PROJECT	TASK
MANATEE COUNTY	LENA ROAD LANDFILL	STAGE II
BOARD OF COUNTY COMMISSIONERS	2015 OPERATION PERMIT RENEWAL	GAS WELL LOCATIONS
	SEQUENCE DRAWINGS	

ORIGINAL JAN. 2015
REVISIONS:
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Name: JOHN A. BANKS JR.
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