

November 6, 2020

Mr. Steve Morgan
Florida Department of Environmental Protection - Southwest District
13051 N. Telecom Parkway, Suite 101
Temple Terrace, FL 33637-0926

RE: Enterprise Road Class III Recycling & Disposal Facility, Pasco County
WACS Facility ID: 87895
Minor Permit Modifications Application to the Facility's Solid Waste Construction and Operations Permit

Dear Mr. Morgan,

On behalf of Angelo's Recycled Materials, we submit this application for a minor modification to the Solid Waste Construction Permit 177982-025-SC/T3 and Solid Waste Operations Permit 177982-029-SO/IM. This minor permit modification application proposes modifications to Sections 3.7 and 3.10.2 of the Engineering Report and Section 3.10.2 of Operations Plan. The application package includes the following:

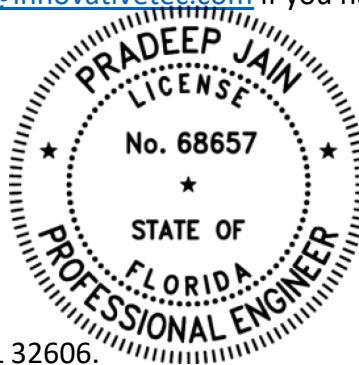
1. A brief background of the proposed modifications
2. Completed DEP Form 62-701.900(1)
3. A copy of the Engineering Report with proposed changes (edits tracked)
4. A copy of the Operations Plan with proposed changes (edits tracked)
5. Pump sizing calculations
6. A site layout depicting the locations of the proposed leachate forcemain and lined aeration pond

A check for the application fee in the amount of \$250 will be mailed to the Department. The fee is in accordance with the fee schedule in Rule 62-701.320 and 62-4.050(4)(s)(5), FAC.

Please contact me at 352-283-4742 or pjain@innovativetec.com if you have any questions or comments regarding this submittal.

Sincerely,

Pradeep Jain, PhD, PE
President
Innovative Waste Consulting Services LLC
3720 NW 43rd Street Suite 103, Gainesville FL 32606.



Xc: John Arnold, Dominic lafrate, Angelo's Aggregate Materials, Ltd.

**Minor Permit Modification Application:
Supporting Documents
Enterprise Road Class III Recycling & Disposal Facility,
Pasco County
Facility ID: 878959
Permit No. 177982-023-SC/T3 and 177982-028-SO/T3**

Prepared For:

Enterprise Recycling and Disposal Facility
41111 Enterprise Road
Dade City, Florida, 33779

Prepared by:

Innovative Waste Consulting Services, LLC
3720 NW 43rd Street, Ste. 103
Gainesville, Florida 32605



BACKGROUND

The Enterprise Road Class III Recycling and Disposal Facility (hereafter referred to as the 'site') operated by Angelo's Aggregate Materials, Ltd., (hereafter referred to as the 'Angelos') operates per the conditions/requirements of the FDEP Permit Number 177982-029-SO/IM (hereafter referred to as the 'solid waste permit'). Angelos is planning to modify its current leachate management system permitted under the solid waste permit. During the conference call with FDEP on October 27, 2020, the FDEP recommended submitting a minor permit modification application requesting the changes expected in the existing permit associated with the proposed modification in the leachate management plan.

Innovative Waste Consulting Services, LLC (IWCS) is submitting one (1) copy of the completed Form 62-701.900(1), F.A.C. and the supporting documents for minor modification of Solid Waste Construction Permit 177982-025-SC/T3 and Solid Waste Operations Permit 177982-029-SO/IM on behalf of Angelos (Applicant). IWCS has been authorized by the Applicant to act on its behalf in the preparation and submittal of this document. This minor permit modification application proposes modifications to Sections 3.7 and 3.10.2 of the Engineering Report (presented in Section 3) and Section 3.10.2 of Operations Plan (presented in Appendix 3-A).

The contents from the 2018 Permit Renewal Application submitted by Kelner Engineering, Inc., 2015 Permit Modification Application submitted by Locklear & Associates, Inc., 2016 Permit Modification submitted by Locklear & Associates, Inc, and 2018 Permit Modification Application submitted by Locklear & Associates, Inc are listed below. Only items in BOLD are modified and provided in the current application package. The remaining items remain unchanged.

INTRODUCTION

SECTION 1

PERMIT APPLICATION

FDEP FORM 62-701.900(1) *Application to Construct, Operate, Modify or Close a Solid Waste Management Facility*

S-1	LETTER OF AUTHORIZATION [2018]
SECTION 2	CHECKLIST SUPPORT [2012]
PART C	PROHIBITIONS [2012]
C-1	WELL INVENTORY [2012]
PART D	SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL [2012]
D-1	PROPERTY OWNERSHIP DOCUMENTATION [2012]
D-2	PROOF OF PUBLICATION [2018]
PART E	LANDFILL PERMIT REQUIREMENTS [2012]
E-1	GROUNDWATER MONITORING LAB CERTIFICATION [2012]
E-2	TOPOGRAPHIC SURVEY [2012]

PART F	GENERAL CRITERIA FOR LANDFILLS [2012]
PART G	LANDFILL CONSTRUCTION REQUIREMENTS [2012]
G-1	LINER SYSTEM REQUIREMENTS EVALUATION [2018]
PART H	HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS [2012]
PART I	GEOTECHNICAL INVESTIGATION REQUIREMENTS [2012]
I-1	UNIVERSAL ENGINEERING SCIENCES REPORT [2018]
I-2	SLOPE STABILITY ANALYSIS [2018]
PART J	VERTICAL EXPANSION OF LANDFILLS [2018]
PART K	LANDFILL OPERATION REQUIREMENTS [2012]
PART L	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS [2012]
PART M	SPECIAL WASTE HANDLING REQUIREMENTS [2012]
PART N	GAS MANAGEMENT SYSTEM REQUIREMENTS [2012]
PART O	LANDFILL FINAL CLOSURE REQUIREMENTS [2012]
PART P	OTHER CLOSURE PROCEDURES [2012]
PART Q	LONG-TERM CARE [2012]
PART R	FINANCIAL ASSURANCE [2012]
SECTION 3	ENGINEERING REPORT
APPENDIX 3-A	OPERATIONS PLAN
APPENDIX 3-B	CONTINGENCY PLAN [2018]
APPENDIX 3-C	FIGURES [2018]
APPENDIX 3-D	WELL ABANDONMENT DOCUMENTATION [2016]
SECTION 4	2018 PLAN SET
SECTION 5	GROUNDWATER MONITORING PLAN [2018]
SECTION 6	WATER QUALITY MONITORING PLAN EVALUATION [2016]
SECTION 7	CLOSURE AND RECLAMATION PLAN [2018]
APPENDIX 7-A	FINANCIAL ASSURANCE COST ESTIMATES [2018]
SECTION 8	ENVIRONMENTAL RESOURCE PERMIT [2012]

SECTION 1
APPLICATION FOR
PERMIT TO CONSTRUCT, OPERATE, MODIFY, OR CLOSE A
SOLID WASTE MANAGEMENT FACILITY**DEP**
FORM 62-701.900(1)



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: February 15, 2015

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 Street
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
813-470-5700

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

Southeast District
3301 Gun Club Road
MSC 7210-1
West Palm Beach, FL 33406
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 permit application shall be submitted in accordance with the requirements of Rule 62-701.320(5)(a), F.A.C., 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):

- | | |
|--|--|
| <input type="checkbox"/> Class I Landfill | <input type="checkbox"/> Ash Monofill |
| <input checked="" type="checkbox"/> Class III Landfill | <input type="checkbox"/> Asbestos Monofill |
| <input type="checkbox"/> Industrial Solid Waste | |
| <input type="checkbox"/> Other (describe): | |
-
-
-

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:

- | | |
|----------------------------------|--|
| <input type="checkbox"/> New | <input type="checkbox"/> Substantial Modification |
| <input type="checkbox"/> Renewal | <input type="checkbox"/> Intermediate Modification |
| | <input checked="" type="checkbox"/> Minor Modification |

4. Facility name: Enterprise Road Class III Recycling and Disposal Facility

5. DEP ID number: SWD/51/87895 County: Pasco

6. Facility location (main entrance):

The main entrance gate is on the north side of Enterprise Road, 1.5 miles east
C.R. 35 Alt. The address is 41111 Enterprise Road in Dade City, Florida 33525.

7. Location coordinates:

Section: 5 and 8 Township: 25S Range: 22E
Latitude: 28 ° 19 ' 53 " Longitude: 82 ° 08 ' 06 "
Datum: NGVD 29 Coordinate method: State Plane West

Collected by: Professional Land Surveyor Company/Affiliation: Picket Surveying and Photogrammetry

8. Applicant name (operating authority): Angelo's Aggregate Materials, Ltd.
Mailing address: 855 28th St. South St. Petersburg FL 33712
Street or P.O. Box City State Zip
Contact person: John Arnold, P.E. Telephone: (813) 477-1719
Title: Authorized Representative
john.phillip.arnold@gmail.com
E-Mail address (if available)
9. Authorized agent/Consultant: Innovative Waste Consulting Services, LLC
Mailing address: 3720 NW 43rd St., Ste 103 Gainesville FL 32606
Street or P.O. Box City State Zip
Contact person: Pradeep Jain, PhD, PE Telephone: (352) 331-4828
Title: President
pjain@innovativetec.com
E-Mail address (if available)
10. Landowner (if different than applicant): Same as 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:
Pasco County and surrounding areas

12. Population to be served:
Current: 487,588 (Pasco County 2015 Census Est) Five-Year Projection: 540,367 (Pasco County 2020 Projections)
13. Date site will be ready to be inspected for completion: N/A
14. Expected life of the facility: 10+ years
15. Estimated costs:
Total Construction: \$ N/A Closing Costs: \$ _____
16. Anticipated construction starting and completion dates:
From: January 2021 To: June 2021
17. Expected volume or weight of waste to be received:
N/A yds³/day _____ tons/day _____ gallons/day

PART B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned under this application:
Construction of lined aeration pond and leachate discharge line from manhole to lined aeration pond. Aerated leachate will be discharged over unlined section of the Pond 3 for additional treatment through natural attenuation.

2. Facility site supervisor: Edward Choquis, P.E.
Title: Dir. of Engineering Telephone: (352) 467-0000

Echoquis@angelosrm.com
E-Mail address (if available)

3. Disposal area: Total acres: 81.4 Used acres: 81.4 Available acres: -

4. Weighing scales used: ☒ Yes ☐ No

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

6. Charge for waste received: +/- \$9.00 \$/yds³ _____ \$/ton

7. Surrounding land use, zoning:

- | | |
|--|--|
| <input type="checkbox"/> Residential | <input type="checkbox"/> Industrial |
| <input checked="" type="checkbox"/> Agricultural | <input type="checkbox"/> None |
| <input type="checkbox"/> Commercial | <input type="checkbox"/> Other (describe): |

Surrounding zoning is AC (Agricultural Commercial) and AR (Agricultural Residential).

8. Types of waste received:

- | | |
|---|--|
| <input type="checkbox"/> Household | <input checked="" type="checkbox"/> C & D debris |
| <input type="checkbox"/> Commercial | <input checked="" type="checkbox"/> Shredded/cut tires |
| <input type="checkbox"/> Incinerator/WTE ash | <input checked="" type="checkbox"/> Yard trash |
| <input type="checkbox"/> Treated biomedical | <input type="checkbox"/> Septic tank |
| <input type="checkbox"/> Water treatment sludge | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Air treatment sludge | <input type="checkbox"/> Industrial sludge |
| <input type="checkbox"/> Agricultural | <input type="checkbox"/> Domestic sludge |
| <input checked="" type="checkbox"/> Asbestos | <input checked="" type="checkbox"/> Other (describe): |

Class III waste

9. Salvaging permitted: ☐ Yes ☒ No

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

11. Trained spotters: ☒ Yes ☐ No Number of spotters used: 1-2

12. Site located in: ☐ Floodplain ☐ Wetlands ☒ Other (describe):
Orange groves

13. Days of operation: Monday through Friday, Saturday

14. Hours of operation: 7 am to 5 pm (M-F); 7 am - 12 pm (Sat)

15. Days working face covered: Once per week

16. Elevation of water table: 55-70 ft. Datum Used: NGVD 29

17. Number of monitoring wells: 21

18. Number of surface monitoring points: 0

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

Gas flaring: ☐ Yes ☒ No Gas recovery: ☐ Yes ☒ No

20. Landfill unit liner type:

<input type="checkbox"/> Natural soils	<input type="checkbox"/> Double geomembrane
<input checked="" type="checkbox"/> Single clay liner	<input type="checkbox"/> Geomembrane & composite
<input type="checkbox"/> Single geomembrane	<input type="checkbox"/> Double composite
<input type="checkbox"/> Single composite	<input type="checkbox"/> None
<input type="checkbox"/> Slurry wall	<input type="checkbox"/> Other (describe):

21. Leachate collection method:

<input type="checkbox"/> Collection pipes	<input type="checkbox"/> Double geomembrane
<input type="checkbox"/> Geonets	<input type="checkbox"/> Gravel layer
<input type="checkbox"/> Well points	<input type="checkbox"/> Interceptor trench
<input type="checkbox"/> Perimeter ditch	<input type="checkbox"/> None
<input checked="" type="checkbox"/> Other (describe):	

Leachate intercepted by the bottom liner of Cells 1 through 7 and 15 drains along the cell bottom to toe drain along north berm in Cells 16 and 17

Leachate from Cells 16 and 17 drains to a toe drain along the northern berm, which gravity drains leachate from west to east into a 4-foot diameter leachate manhole.

22. Leachate storage method:

☐ Tanks ☒ Surface impoundments

☐ Other (describe):

Leachate from manhole will be transported to lined aeration pond through a pipe. Aerated leachate will be discharged over the unlined section of Pond 3.

23. Leachate treatment method:

☒ Oxidation ☐ Chemical treatment

☐ Secondary ☒ Settling

☐ Advanced ☐ None

☒ Other (describe):

As described in the major modification to the IW permit, leachate will be treated through aeration to reduce its iron and manganese concentration. Aerated leachate will be discharged over the unlined section of Pond 3 for natural attenuation of leachate contaminants.

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):

Leachate will be discharged over the unlined section of Pond 3 for natural attenuation of leachate contaminants following leachate percolation.

25. For leachate discharged to surface waters:

Name and Class of receiving water:

N/A

26. Storm Water:

Collected: ☒ Yes ☐ No

Type of treatment:

100 year, 24-hour storm event retained on-site without discharge.

Name and Class of receiving water:

None

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

ERP 51-0172489-006

PART C. PROHIBITIONS (62-701.300, FAC)

LOCATION

- | | | |
|----------------------------------|--|---|
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 2. If the facility qualifies for any of the exemptions contained in Rules 62-701.300(12), (13) and (16) through (18), FAC, then document this qualification(s); |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 9. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 10. Provide documentation that the facility will be in compliance with the used oil and oily waste restrictions; (62-701.300(11), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 11. Provide documentation that the facility will be in compliance with the CCA treated wood restrictions; (62-701.300(14), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 12. Provide documentation that the facility will be in compliance with the dust control restrictions; (62-701.300(15), FAC) |

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

LOCATION

S ☒ Section 1 N/A ☒ N/C ☐

1. A minimum of one completed electronic application form, all supporting data and reports; (62-701.320(5)(a), FAC)

S ☒ Section 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 ☒ Cover Letter N/A ☐ N/C ☐

3. A letter of transmittal to the Department; (62-701.320(7)(a), FAC)

S ☒ Section 1 N/A ☐ N/C ☐

4. A completed application form dated and signed by the applicant; (62-701.320(7)(b), FAC)

S ☒ Cover Letter 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 ☒ Section 3 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 ☒ Section 3 N/A ☐ N/C ☐

7. Operation Plan and Closure Plan; (62-701.320(7)(e)1, FAC)

S ☐ _____ N/A ☐ N/C ☒

8. Contingency Plan; (62-701.320(7)(e)2, FAC)

S ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

a. A regional map or plan with the project location in relation to major roadways and population centers;

S ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

c. A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor and Mapper;

S ☐ _____ 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;

LOCATION**PART D CONTINUED**S ☐ _____ 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 ☐ _____ 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)

S ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

a. Dimensions;

S ☐ _____ N/A ☐ N/C ☒

b. Locations of proposed and existing water quality monitoring wells;

S ☐ _____ N/A ☐ N/C ☒

c. Locations of soil borings;

S ☐ _____ N/A ☐ N/C ☒

d. Proposed plan of trenching or disposal areas;

S ☐ _____ 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;

LOCATION**PART E CONTINUED**S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒

f. Any previously filled waste disposal areas;

g. Fencing or other measures to restrict access;

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)

a. Proposed fill areas;

b. Borrow areas;

c. Access roads;

d. Grades required for proper drainage;

e. Cross sections of lifts;

f. Special drainage devices if necessary;

g. Fencing;

h. Equipment facilities;

4. A report on the landfill describing the following: (62-701.330(3)(d), FAC)

a. The current and projected population and area to be served by the proposed site;

b. The anticipated type, annual quantity, and source of solid waste expressed in tons;

c. Planned active life of the facility, the final design height of the facility, and the maximum height of the facility during its operation;

d. The source and type of cover material used for the landfill;

5. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Chapter 62-160, FAC; (62-701.330(3)(g), FAC)

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 ☐ _____ 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 ☐ _____ 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;

LOCATIONS ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐**PART G CONTINUED**

b. Composite liners; (62-701.400(3)(b), FAC)

- (1) Upper geomembrane thickness and properties;
- (2) Design leachate head for primary leachate collection and removal system (LCRS) including leachate recirculation if appropriate;
- (3) Design thickness in accordance with Table A and number of lifts planned for lower soil component;

c. Double liners; (62-701.400(3)(c), FAC)

- (1) Upper and lower geomembrane thickness and properties;
- (2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
- (3) Lower geomembrane sub-base design;
- (4) Leak detection and secondary leachate collection system minimum design criteria ($k \geq 10$ cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer);

d. Standards for geosynthetic components; (62-701.400(3)(d), FAC)

- (1) Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;
- (2) Geomembranes to be used shall pass a continuous spark test by the manufacturer;
- (3) Design of 24-inch-thick protective layer above upper geomembrane liner;
- (4) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above a 24-inch-thick protective layer;
- (5) HDPE geomembranes, if used, meet the specifications in GRI GM13, and LLDPE geomembranes, if used, meet the specifications in GRI GM17;
- (6) PVC geomembranes, if used, meet the specifications in PGI 1104;

LOCATIONS ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐**PART G CONTINUED**

- (7) Interface shear strength testing results of the actual components which will be used in the liner system;
- (8) Transmissivity testing results of geonets if they are used in the liner system;
- (9) Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;
- e. Geosynthetic specification requirements; (62-701.400(3)(e), FAC)
- (1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
- (2) Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;
- (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;
- (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;
- (5) Geotextile and geogrids specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;
- (6) Geonet and geocomposites specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;
- (7) Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;

LOCATIONS ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☐ N/C ☒**PART G CONTINUED**

f. Standards for soil liner components; (62-701.400(3)(f), FAC)

- (1) Description of construction procedures including over-excavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil components in layers;
- (2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100, or an equivalent test method;
- (3) Procedures for testing in situ soils to demonstrate they meet the specifications for soil liners;
- (4) Specifications for soil component of liner including at a minimum:
 - (a) Allowable particle size distribution, and Atterberg limits including shrinkage limit;
 - (b) Placement moisture and dry density criteria;
 - (c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
 - (d) Minimum thickness of soil liner;
 - (e) Lift thickness;
 - (f) Surface preparation (scarification);
 - (g) Type and percentage of clay mineral within the soil component;
- (5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field;

g. If a Class III landfill is to be constructed with a bottom liner system, provide a description of how the minimum requirements for the liner will be achieved;

LOCATION**PART G CONTINUED**S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐

3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC)

a. The primary and secondary LCRS requirements; (62-701.400(4)(a), FAC)

- (1) Constructed of materials chemically resistant to the waste and leachate;
- (2) Have sufficient mechanical properties to prevent collapse under pressure;
- (3) Have granular material or synthetic geotextile to prevent clogging;
- (4) Have a method for testing and cleaning clogged pipes or contingent designs for reducing leachate around failed areas;

b. Other LCRS requirements; (62-701.400(4)(b), (c) and (d), FAC)

- (1) Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{-3}$ cm/sec;
- (2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
- (3) Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements;
- (4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load, and protection of geomembranes liner;
- (5) Schedule provided for routine maintenance of LCRS.

4. Leachate recirculation; (62-701.400(5), FAC)

a. Describe general procedures for recirculating leachate;

b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;

c. Describe procedures for preventing perched water conditions and gas buildup;

LOCATION**PART G CONTINUED**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;

LOCATIONS ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐**PART G CONTINUED**

(5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;

(6) Procedures for controlling vectors and off-site odors;

b. Above-ground leachate storage tanks; (62-701.400(6)(c), FAC)

(1) Describe tank materials of construction and ensure foundation is sufficient to support tank;

(2) Describe procedures for cathodic protection for the tank, if needed;

(3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;

(4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;

(5) Describe design to remove and dispose of stormwater from the secondary containment system;

(6) Describe an overfill prevention system, such as level sensors, gauges, alarms, and shutoff controls to prevent overfilling;

(7) Inspections, corrective action, and reporting requirements;

(a) Weekly inspection of overfill prevention system;

(b) Weekly inspection of exposed tank exteriors;

(c) Inspection of tank interiors when tank is drained, or at least every three years;

(d) Procedures for immediate corrective action if failures detected;

(e) Inspection reports available for Department review;

c. Underground leachate storage tanks; (62-701.400(6)(d), FAC)

LOCATIONS ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐**PART G CONTINUED**

(1) Describe materials of construction;

(2) A double-walled tank design system to be used with the following requirements:

(a) Interstitial space monitoring at least weekly;

(b) Corrosion protection provided for primary tank interior and external surface of outer shell;

(c) Interior tank coatings compatible with stored leachate;

(d) Cathodic protection inspected weekly and repaired as needed;

(3) Describe an overfill prevention system, such as level sensors, gauges, alarms, and shutoff controls to prevent overfilling, and provide for weekly inspections;

(4) Inspection reports available for Department review;

6. Liner systems construction quality assurance (CQA); (62-701.400(7), FAC)

a. Provide CQA Plan including:

(1) Specifications and construction requirements for liner system;

(2) Detailed description of quality control testing procedures and frequencies;

(3) Identification of supervising professional engineer;

(4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;

(5) State qualifications of CQA professional engineer and support personnel;

LOCATION**PART G CONTINUED**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(2), FAC)**LOCATION**S ☐ _____ N/A ☐ N/C ☒

1. Submit a hydrogeological investigation and site report including at least the following information:

S ☐ _____ N/A ☐ N/C ☒

a. Regional and site specific geology and hydrology;

S ☐ _____ N/A ☐ N/C ☒

b. Direction and rate of ground water and surface water flow including seasonal variations;

LOCATIONS ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒

2. Report signed, sealed, and dated by P.E. and/or P.G.

PART H CONTINUED

c. Background quality of ground water and surface water;

d. Any on-site hydraulic connections between aquifers;

e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the site that may be affected by the disposal facility;

f. Description of topography, soil types, and surface water drainage systems;

g. Inventory of all public and private water wells within a one mile radius of the site including, where available, well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique, and static water level;

h. Identify and locate any existing contaminated areas on the site;

i. Include a map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas;

PART I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.410(3) and (4), FAC)**LOCATION**S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒

1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:

a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;

b. Investigate for the presence of muck, previously filled areas, soft ground, and lineaments;

c. Estimates of average and maximum high water table across the site;

d. Evaluation of potential for fault areas and seismic impact zones;

e. Foundation analysis including:

LOCATION**PART I CONTINUED**S ☐ _____ N/A ☐ N/C ☒

(1) Foundation bearing capacity analysis;

S ☐ _____ N/A ☐ N/C ☒

(2) Total and differential subgrade settlement analysis;

S ☐ _____ N/A ☐ N/C ☒

(3) Slope stability analysis;

S ☐ _____ N/A ☐ N/C ☒

f. Evaluation of potential for sinkholes and sinkhole activity at the site that is based upon the investigations required in Rule 62-701.410(3)(f), F.A.C.;

S ☐ _____ N/A ☐ N/C ☒

g. A geotechnical report providing a description of methods used in the investigation, and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations, conclusions, and a description of any engineering measures proposed for the site;

S ☐ _____ 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 any violations of water quality standards or criteria, 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 ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)

S ☐ _____ N/A ☐ N/C ☒

a. Designating responsible operating and maintenance personnel;

S ☐ _____ N/A ☐ N/C ☒

b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;

S ☐ _____ N/A ☐ N/C ☒

c. Controlling types of waste received at the landfill;

S ☐ _____ N/A ☐ N/C ☒

d. Weighing incoming waste;

S ☐ _____ N/A ☐ N/C ☒

e. Vehicle traffic control and unloading;

S ☐ _____ N/A ☐ N/C ☒

f. Method and sequence of filling waste;

S ☐ _____ N/A ☐ N/C ☒

g. Waste compaction and application of cover;

S ☒ **Section 3** _____ N/A ☐ N/C ☐

h. Operations of gas, leachate, and stormwater controls;

S ☐ _____ N/A ☐ N/C ☒

i. Water quality monitoring;

S ☐ _____ N/A ☐ N/C ☒

j. Maintaining and cleaning the leachate collection system;

S ☐ _____ 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 ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

5. Describe methods of access control; (62-701.500(5), FAC)

S ☐ _____ 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**PART K CONTINUED**S ☐ _____ N/A ☐ N/C ☒

7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), FAC)

S ☐ _____ N/A ☐ N/C ☒

a. Waste layer thickness and compaction frequencies;

S ☐ _____ N/A ☐ N/C ☒

b. Special considerations for first layer of waste placed above the liner and leachate collection system;

S ☐ _____ N/A ☐ N/C ☒

c. Slopes of cell working face and side grades above land surface, and planned lift depths during operation;

S ☐ _____ N/A ☐ N/C ☒

d. Maximum width of working face;

S ☐ _____ N/A ☐ N/C ☒

e. Description of type of initial cover to be used at the facility that controls:

S ☐ _____ N/A ☐ N/C ☒

(1) Vector breeding/animal attraction;

S ☐ _____ N/A ☐ N/C ☒

(2) Fires;

S ☐ _____ N/A ☐ N/C ☒

(3) Odors;

S ☐ _____ N/A ☐ N/C ☒

(4) Blowing litter;

S ☐ _____ N/A ☐ N/C ☒

(5) Moisture infiltration;

S ☐ _____ N/A ☐ N/C ☒

f. Procedures for applying initial cover, including minimum cover frequencies;

S ☐ _____ N/A ☐ N/C ☒

g. Procedures for applying intermediate cover;

S ☐ _____ N/A ☐ N/C ☒

h. Time frames for applying final cover;

S ☐ _____ N/A ☐ N/C ☒

i. Procedures for controlling scavenging and salvaging;

S ☐ _____ N/A ☐ N/C ☒

j. Description of litter policing methods;

S ☐ _____ N/A ☐ N/C ☒

k. Erosion control procedures;

LOCATION**PART K CONTINUED**S ☒ Section 3 N/A ☐ N/C ☐S ☒ Section 3 N/A ☐ N/C ☐S ☒ Section 3 N/A ☐ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☒ Section 3 N/A ☐ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒

8. Describe operational procedures for leachate management including: (62-701.500(8), FAC)

a. Leachate level monitoring;

b. Operation and maintenance of leachate collection and removal system, and treatment as required;

c. Procedures for managing leachate if it becomes regulated as a hazardous waste;

d. Identification of treatment or disposal facilities that may be used for off-site discharge and treatment of leachate;

e. Contingency plan for managing leachate during emergencies or equipment problems;

f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;

g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;

h. Procedures for water pressure cleaning or video inspecting leachate collection systems;

9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of Rule 62-701.530, FAC; (62-701.500(9), FAC)

10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9), FAC; (62-701.500(10), FAC)

11. Equipment and operation feature requirements; (62-701.500(11), FAC)

a. Sufficient equipment for excavating, spreading, compacting, and covering waste;

b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;

c. Communications equipment;

LOCATIONS ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒**PART K CONTINUED**

d. Dust control methods;

e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;

f. Litter control devices;

g. Signs indicating operating authority, traffic flow, hours of operation, and disposal restrictions;

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)

13. Additional record keeping and reporting requirements; (62-701.500(13), FAC)

a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;

b. Monitoring information, calibration and maintenance records, and copies of reports required by permit maintained for at least 10 years;

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;

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 ☐ _____ N/A ☐ N/C ☒S ☐ _____ 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:

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)

LOCATIONS ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒**PART L CONTINUED**

b. All sampling and analysis performed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b), FAC)

c. Ground water monitoring requirements; (62-701.510(3), FAC)

(1) Detection wells located downgradient from and within 50 feet of disposal units;

(2) Downgradient compliance wells as required;

(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;

(4) Location information for each monitoring well;

(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells, unless site specific conditions justify alternate well spacings;

(6) Properly selected well screen locations;

(7) Monitoring wells constructed to provide representative ground water samples;

(8) Procedures for properly abandoning monitoring wells;

(9) Detailed description of detection sensors, if proposed;

d. Surface water monitoring requirements; (62-701.510(4), FAC)

(1) Location of and justification for all proposed surface water monitoring points;

(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;

e. Initial and routine sampling frequency and requirements; (62-701.510(5), FAC)

(1) Initial background ground water and surface water sampling and analysis requirements;

LOCATION**PART L CONTINUED**S ☐ _____ N/A ☐ N/C ☒

(2) Routine monitoring well sampling and analysis requirements;

S ☐ _____ N/A ☐ N/C ☒

(3) Routine surface water sampling and analysis requirements;

S ☐ _____ N/A ☐ N/C ☒

f. Describe procedures for implementing evaluation monitoring, prevention measures, and corrective action as required; (62-701.510(6), FAC)

S ☐ _____ N/A ☐ N/C ☒

g. Water quality monitoring report requirements; (62-701.510(8), FAC)

S ☐ _____ N/A ☐ N/C ☒

(1) Semi-annual report requirements; (see paragraphs 62-701.510(5)(c) and (d), FAC for sampling frequencies)

S ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

(3) Two and one-half year, or annual, 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 ☐ _____ N/A ☒ N/C ☐

1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)

S ☐ _____ N/A ☒ N/C ☐

2. Describe procedures for landfilling shredded waste; (62-701.520(2), FAC)

S ☐ _____ N/A ☐ N/C ☒

3. Describe procedures for asbestos waste disposal; (62-701.520(3), FAC)

S ☐ _____ N/A ☒ N/C ☐

4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)

S ☐ _____ 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 <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 1. Provide documentation for a gas management system that will: (62-701.530(1), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 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 <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | b. Be designed for site specific conditions; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | c. Be designed to reduce gas pressure in the interior of the landfill; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | d. Be designed to not interfere with the liner, leachate control system, or final cover; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 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 <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC) |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | 4. Landfill gas recovery facilities; (62-701.530(5), FAC) |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | a. Provide information required in Rules 62-701.320(7) and 62-701.330(3), FAC; |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | b. Provide information required in Rule 62-701.600(4), FAC, where relevant and practical; |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | c. Provide estimates of current and expected gas generation rates and description of condensate disposal methods; |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | d. Provide description of procedures for condensate sampling, analyzing, and data reporting; |
| S <input type="checkbox"/> _____ | N/A <input checked="" type="checkbox"/> N/C <input type="checkbox"/> | 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 <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 1. Closure permit requirements; (62-701.600(2), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | a. Application submitted to the Department at least 90 days prior to final receipt of wastes; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | b. Closure plan shall include the following: |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (1) Closure design plan; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (2) Closure operation plan; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (3) Plan for long-term care; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (4) A demonstration that proof of financial assurance for long-term care will be provided; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | 2. Closure design plan including the following requirements: (62-701.600(3), FAC) |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | a. Plan sheet showing phases of site closing; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | b. Drawings showing existing topography and proposed final grades; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | c. Provisions to close units when they reach approved design dimensions; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | d. Final elevations before settlement; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters, and description of expected precipitation effects; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | f. Final cover installation plans including: |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (1) CQA plan for installing and testing final cover; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (2) Schedule for installing final cover after final receipt of waste; |
| S <input type="checkbox"/> _____ | N/A <input type="checkbox"/> N/C <input checked="" type="checkbox"/> | (3) Description of drought resistant species to be used in the vegetative cover; |

LOCATIONS ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☒ N/C ☐S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒S ☐ _____ N/A ☐ N/C ☒**PART O CONTINUED**

(4) Top gradient design to maximize runoff and minimize erosion;

(5) Provisions for cover material to be used for final cover maintenance;

g. Final cover design requirements;

(1) Protective soil layer design;

(2) Barrier soil layer design;

(3) Erosion control vegetation;

(4) Geomembrane barrier layer design;

(5) Geosynthetic clay liner design, if used;

(6) Stability analysis of the cover system and the disposed waste;

h. Proposed method of stormwater control;

i. Proposed method of access control;

j. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC;

3. Closure operation plan shall include: (62-701.600(4), FAC)

a. Detailed description of actions which will be taken to close the landfill;

b. Time schedule for completion of closing and long-term care;

c. Describe proposed method for demonstrating financial assurance for long-term care;

d. Operation of the water quality monitoring plan required in Rule 62-701.510, FAC;

e. Development and implementation of gas management system required in Rule 62-701.530, FAC;

LOCATION**PART O CONTINUED**

- S ☐ _____ N/A ☐ N/C ☒ 4. Certification of closure construction completion and final reports including: (62-701.600(6), FAC)
- S ☐ _____ N/A ☐ N/C ☒ a. Survey monuments; (62-701.600(6)(a), FAC)
- S ☐ _____ N/A ☐ N/C ☒ b. Final survey report; (62-701.600(6)(b), FAC)
- S ☐ _____ N/A ☐ N/C ☒ c. Closure construction quality assurance report; (62-701.400(7), FAC)
- S ☐ _____ N/A ☐ N/C ☒ 5. Declaration to the public; (62-701.600(7), FAC)
- S ☐ _____ N/A ☐ N/C ☒ 6. Official date of closing; (62-701.600(8), FAC)
- S ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒ 1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)
- S ☐ _____ N/A ☐ N/C ☒ 2. Stabilization report requirements; (62-701.620(6), FAC)
- S ☐ _____ N/A ☐ N/C ☒ 3. Right of access; (62-701.620(7), FAC)
- S ☐ _____ N/A ☐ N/C ☒ 4. Requirements for replacement of monitoring devices; (62-701.620(8), FAC)
- S ☐ _____ 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 ☐ _____ 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 ☐ _____ 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 ☐ _____ N/A ☐ N/C ☒

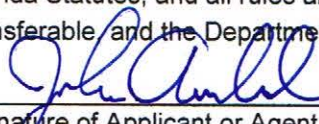
3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms. (62-701.630(5), (6), & (9), FAC)

PART S. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Angelos Aggregate Materials, LTD

_____ is aware that statements made in this form and attached information are an application for a minor modification 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

John Arnold, Authorized Representative

Name and Title (please type)

john.phillip.arnold@gmail.com

E-Mail Address (if available)

855 28th Street South

Mailing Address

St. Petersburg, FL 33712

City, State, Zip Code

(813) 477-1719

Telephone Number

Date: 11/05/2020

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, or proper maintenance and operation of the facility.

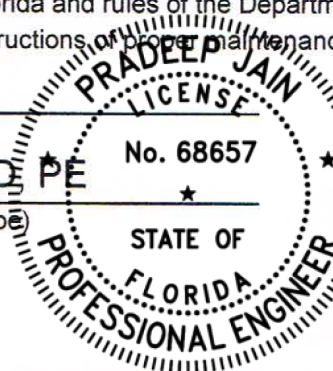
Signature

Pradeep Jain, PhD, PE

Name and Title (please type)

68657

Florida Registration Number (please affix seal)



3720 NW 43rd St, Ste 103

Mailing Address

Gainesville, FL, 32606

City, State, Zip Code

pjain@innovativetec.com

E-Mail Address (if available)

(352) 331-4828

Telephone Number

Date: 11/05/2020

SECTION 3
ENGINEERING REPORT

ENTERPRISE ROAD CLASS III RECYCLING AND DISPOSAL FACILITY
~~MINOR PERMIT MODIFICATIONS TO INTERMEDIATE~~ MINOR MODIFICATION PERMIT
APPLICATION
ENGINEERING REPORT

Prepared for:

ANGELO'S AGGREGATE MATERIALS, LTD
855 28th Street South
St. Petersburg, Florida 33712

Prepared by:

LOCKLEAR & ASSOCIATES, INC.
4140 NW 37th Place, Suite A
Gainesville, Florida 32606

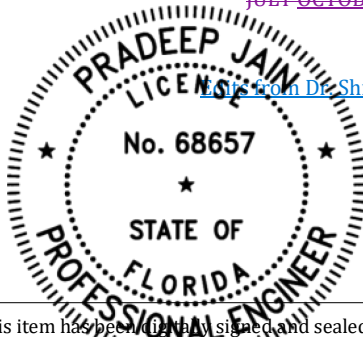
Modified by:

~~INNOVATIVE WASTE CONSULTING SERVICES, LLC~~
~~3720 NW 43rd St, Ste 103~~
~~Gainesville, Florida, 32606~~

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~~JULY OCTOBER APRIL~~ November 2019 2020



~~Done from Dr. Shrawan Singn and Pradeep Jain Pp~~ performed ~~Under-under~~ the
~~Supervision-supervision~~ of

~~Lisa J. Baker~~ Pradeep Jain, P.E.
Florida PE #68657

This item has been electronically signed and sealed by Pradeep Jain, PE, on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on
any electronic copies.

**ENTERPRISE RECYCLING AND DISPOSAL FACILITY
ENGINEERING REPORT
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SECTION 3 ENGINEERING REPORT

3.1 GENERAL

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This Engineering Report ~~has been revised as is~~ part of a minor modification application to the comprehensive Florida Department of Environmental Protection (FDEP or Department) permit renewal intermediate modification application for the Enterprise Road Class III Recycling and Disposal Facility (Facility). The minor permit modification is to include the lined leachate aeration system associated with Pond 3 (FDEP IW Permit No. FLA936723). The Engineering Report is designed to meet the requirements of Rule 62-701, F.A.C. and Pasco County's Land Development Code (LDC) and includes the following major components (and their respective location within this Engineering Report):

- Operations Plan ~~Minor~~-Modification Permit Plan Set, by Locklear & Associates, Inc. (Section 4);
- Figures (Appendix 3-C);
- An evaluation of the applicability of bottom liner and leachate collection system requirements (Section 2, Part G, G-1);
- Updated report evaluating geotechnical site conditions (Section 2, Part I, I-1);
- Updated Groundwater Monitoring Plan (Section 5);
- An analysis of slope stability (Section 2, Part I, I-2);
- Updated Closure and Reclamation Plan (Section 7);
- Updated financial assurance cost estimates (Section 7 Appendix 7-A);
- Updated Operations Plan (Section 3 Appendix 3-A);
- Updated Contingency Plan (Section 3 Appendix 3-B).

3.2 SITE LOCATION AND DESCRIPTION

The facility receives approximately ~~1500-2,215~~ tons per day of Class III waste, which includes Construction and Demolition debris, from Pasco County and other surrounding Counties (including Pinellas, Hernando, Hillsborough and Polk). The Facility was originally permitted by the Department on October 5, 2001.

The subject site is located in Sections 5 and 8, Township 25 South, Range 22 East, in Pasco County, Florida, as shown on the United States Geological Survey (USGS) quadrangle map presented in Figure 3-1 in Appendix 3-C. More specifically, the Facility is located at the northwest corner of the intersection of Enterprise Road and Auton Road, southeast of Dade City, Florida (Figure 3-1 in Appendix 3-C). The site occupies approximately 160 acres of land on the north side of Enterprise Road. The square property is approximately 2,640 feet on a side and is located in the southwest quarter of Section 5 and the northwest quarter of Section 8.

There are no airports within 5 miles of the site, see Figure S-4 (Appendix 3-C).

3.2.1 Prohibition Compliance

In order to comply with Rule 62-701.300, F.A.C., the Facility will abide by the following:

- The Facility will not dispose of solid waste at the proposed site until proper permitting is obtained.
- Disposal of solid waste will not occur in areas that are: unable to provide support for the waste; geological formation or subsurface features that would allow unimpeded discharge to surface water or groundwater; are within 500 feet of an existing potable water well (Figure S-1 in Appendix 3-C); are within a dewatered pit; are in a frequently flooded area; are in a body of water; are within 200 feet of a surface water body that discharges offsite (Figure S-2 in Appendix 3-C); are on a right of way; are within 1,000 feet of an existing community potable water; or are within 3,000 ft. of Class I surface waters (Figure S-3 in Appendix 3-C).
- Open burning will not occur on the site unless the burning takes place in a permitted air curtain incinerator.
- Hazardous wastes, PCB's, biohazardous wastes, special wastes, liquids, and oily wastes will not be disposed of at the Facility. Random load checks and the use of spotters at the working face will ensure that these wastes are not placed for disposal at the Facility.

3.3 SURROUNDING LAND USES AND ZONING

Figure 3-2 in Appendix 3-C presents an aerial photograph map depicting the surrounding land uses and designated FDOT FLUCCS codes in the site vicinity. Open land, pastureland, row crop, tree crop, and upland hardwood forest land uses surround the site. A few scattered residences also surround the site. All adjoining properties are zoned AC. Parcel 05-25-22-0000-00500-0000 to the northwest of the facility has a mining permit and is not part of the landfill operations. To the north is the East Pasco County Class I Sanitary Landfill, which is closed. To the east is an old borrow pit and agricultural land. South of the site is agricultural land and orange groves, and to the west are orange groves. Figure 3-2B in Appendix 3-C presents an aerial photograph map with future land use classifications.

Current site zoning designation, AC with a conditional use, is consistent with the Class III Landfill use. Revised Figure S-1 depicts the locations of five (5) water wells proximate to the landfill limit. The well north of future cell 17 has been abandoned. The on-site non-potable Supply Well is operated and maintained by the facility and only utilized to flush on-site toilets. The well approximately 1000' south of the southeast corner of the facility is identified as "irrigation" by SWFWMD. The 500-foot setback from the approved landfill footprint to potable wells complies with the setback requirements of Rule 62-701.300(2)(C), F.A.C.

3.4 TOPOGRAPHY

The USGS 7.5 minute quadrangle map shown in Figure 3-3 in Appendix 3-C shows the land surface

of the subject site has elevations ranging from 85 feet to 175 feet National Geodetic Vertical Datum (NGVD). Natural land surface generally slopes to the northeast on the northern half of the property and southeast on the southern half of the site. A 2018 site-specific topographic survey is shown on Sheets 1 and 2 of the Operations Plan ~~Minor~~-Modification Permit Plan Set provided in Section 4.

3.4.1 100-Year Flood Prone Areas

Figure S-5 depicts a 100-year flood prone area map from the U.S. Federal Emergency Management Administration for the subject vicinity. As shown, the site is not within and would not be impacted by an estimated 100-year storm flood.

3.5 SOILS

According to the Soil Survey of Pasco County, Florida, published by the U.S. Department of Agriculture Soil Conservation Services (USDA-SCS), the majority of the subject site and surrounding areas are covered by fine sands. A copy of the USDA-SCS Soils Survey Map showing the mapped areas of the major soil types at the subject site and its vicinity is presented in Figure 3-5 Soil Survey Map.

USDA-SCS soil type 12- Astatula fine sands encompass a small portion in the northeast portion of the site. Astatula sands are nearly level to gently sloping, and excessively drained mainly in the sandhills. Seasonal high water table (SHWT) is typically at a depth ~~of greater than~~ 72 inches in Astatula soil. The permeability is very rapid throughout the soil. Both the available water capacity and natural fertility of the Astatula soil are low.

USDA soil type 32 - Lake fine sands comprise the majority of the soils found on the property. These soils are nearly level to gently sloping and excessively well drained. They occur along ridgetops and on low hillsides in the uplands. Permeability is rapid throughout the soil and the water table is below a depth of 120 inches. The available water capacity is very low in all layers and the natural fertility and organic matter content are both low.

USDA soil type 72 - Orlando fine sands are found in a small area in the northeast portion of the property. These soils are nearly level to gently sloping and well drained. The water table is typically at a depth greater than 72 inches with permeability of the soil rapid throughout. The available water capacity is low in the surface layer and very low in the other layers.

3.6 LANDFILL SITE IMPROVEMENTS

Portions of the 160-acre landfill site are also currently being operated as orange groves. The following site improvements have been installed to meet landfill operational requirements.

3.6.1 Entrance Facilities

An office trailer (gatehouse) is located onsite for the gate attendant. This trailer has hand washing and toilet facilities. Potable bottled water is supplied to the trailer. Electric and telephone services are available to the trailer office. Site entrance improvements also include an all-weather entrance

roadway, scales and perimeter road as shown in Operations Plan-Minor Modification Permit Plan Set provided in Section 4.

3.6.2 Roads

The primary haul route servicing the Facility is Enterprise Road. Enterprise Road is serviced by Clinton Avenue and C.R. 35A.

Enterprise Road has been improved to an all-weather access roadway from C.R. 35A to the entrance of the Facility. All on-site roads are maintained by the Applicant to allow for all weather access. Access roads to the working face are constructed from on-site soils and/or recovered materials such as concrete and asphalt. This is done on an as needed basis

3.6.3 Effective Barrier

A 6-foot high security fence has been constructed along the south and east boundaries. The security fence consists of a 6-foot high-galvanized chain link fence, hereafter referred to as the "security fence." A five-foot wire fence runs along the north and west property boundaries. The chain link fence has been installed in accordance with the permit issued October 2001. Three (3) foot square "NO TRESPASSING" signs with 5-inch letters have been installed at no less than 500-foot spacing and at all corners to notice unauthorized access. The only point of access into the facility will be through the gate at the entrance. This gate will be locked during closed hours.

An 8-foot high landscape berm has been constructed along the site's frontage to Enterprise and Auton Roads, see Operations Plan Minor Modification Permit Plan Set provided in Section 4.

3.6.4 Weighing or Measuring Incoming Waste

A scale system is used to keep records of materials received at the Facility. The scales are calibrated every six (6) months. Vehicles are weighed when they enter the Facility, and based upon the tare weight of the vehicle, the waste tonnage will be determined. Prior to unloading debris, the tonnage or volume of waste materials received will be determined and the appropriate fee assessed.

3.6.5 Vehicle Traffic Control and Unloading

Generally, truck traffic will be controlled on a first-in, first-out basis, as directed by the spotter at the working face. There is adequate space for truck staging at the site's entrance gate (7-8 trucks) to mitigate any queuing onto Enterprise Road. The Facility will discourage any truck staging prior to landfill opening. Signs will be posted at the entrance gate and on interior roads to guide truck traffic.

3.7 EXCAVATION OPERATIONS AND CELL CONSTRUCTION

On-site soils will be excavated according to the Pasco County Class I Mining Permit. The soils will be excavated and removed for various uses, including construction, roadways, and in landfilling

operations. The County permit allows an excavation up to within a 200-foot setback from the property boundary and an excavation slope of 6H:1V. The Class I Mine will be "reclaimed" as a Class III landfill. The 6H:1V excavation slopes are associated with the mining of the existing soil. Once the landfill is ready to accept waste, the mine side slopes will be excavated to 2H:1V side slopes (cell slopes). Waste will be placed against this excavated slope and then built above existing grade. The Operations Plan ~~Minor~~-Modification Permit Plan Set (Section 4) show the phasing of the cell construction and filling operation at the Facility.

Excavation slopes will not exceed 6H:1V pursuant to the Pasco County permit; however, once an excavation phase is complete and construction commences on a new cell, the slopes will be excavated to 2H:1V. A portion of the excavated soils from the mining operation will be used as landfill construction material. Excavated soils will be reserved to provide adequate cover material for the landfill operation. Cell construction will follow the sequence described in Section 3.8.

As new cells are excavated and constructed, the cells will be over excavated to approximately three-feet below the approved excavation base grade to allow for the construction of a 3' clay layer. If limerock is encountered during construction, the following actions will be taken: **Where limerock is encountered at or below the elevation of the cell clay layer:**

- In the event that limerock is encountered during clay layer excavation or construction activities, the excavation / construction activities shall cease and the Department shall be notified by email within 24 hours of discovery.
- Excavation / construction activities related to determining location, elevation, and extent of limestone or to remediation in accordance with these procedures will resume no sooner than 24 hours after notice, unless otherwise directed by the Department
- Written notification will be submitted within 7 days of discovery.
- The written notification shall include the location, elevation, and extent of limestone noted on a plan sheet, a description of the materials encountered, and a description of the completion of excavation / clay backfill in the identified area or the anticipated timeframe for completion of these activities.
- The limerock will be over-excavated (5-feet laterally beyond limerock boundary and 3-feet vertically below the bottom of the compacted clay layer) and the area backfilled with clay meeting the specifications in the FDEP Operation/Construction permit and Engineering Report.
- Excavation / construction activities will resume no sooner than 24 hours after notice, unless otherwise directed by the Department

Where limerock is encountered during mining operations at elevations above the elevation of the cell clay layer and do not extend into the clay layer:

- Document on the limerock observation log the location, elevation, and extent of limestone noted on a plan sheet, and a description of the materials encountered
- Submit limerock observation log to FDEP within 7 days of discovery
- Where limerock is encountered within 10-feet of the design elevation of the top of compacted clay layer, in addition to the procedures noted above, over excavate 1-foot

vertically and laterally around the exposed limerock and backfill with compacted clay to temporarily prevent infiltration during mining operations.

If limerock encountered during mining operations at elevations above the cell clay layer extends to or below the elevation of the cell clay layer, the procedures identified above under the heading *"Where limerock is encountered at or below the elevation of the cell clay layer"* shall be followed.

Stockpiled clay, obtained from on-site excavation, will be sampled for laboratory proctor testing for use as cell floor and cell side slope material to construct a three-foot thick clay barrier layer. Material with acceptable permeability and proctor test results will be placed onto the constructed cell floor in lifts, and compacted by multiple passes with a 40,000 lb., D-6 Dozer, or equivalent.

A three-foot thick clay layer will also be placed on the 2H:1V side slopes of the exterior excavation side slopes of each cell to complete the continuous clay barrier layer. Due to the steepness of the slope, clay placement and compaction will require an iterative process consisting of several horizontal lifts, stepped up progressively until the base elevation of the landfill is reached. In order to achieve the required compaction and hydraulic conductivity, as well as to achieve a constant three feet of clay along the slope, each lift along the cell wall will need to exceed three feet wide and be wide enough for the compacting equipment. Soil in excess of three feet wide on the slopes may be removed after compaction and compliance testing have been approved. Acceptable test results mean the results of the laboratory proctor and permeability tests indicate that the permeability of the material meets the requirements of the construction permit (1×10^{-8} cm/s), and the optimum moisture content is not too high for the equipment to manage. [Soil liner construction quality assurance shall be in compliance with 62-701.400\(8\).](#) Optimum moisture content for the on-site stockpiles has been approximately 13 to 20 percent.

The dozer will compact the material in the bottom of the excavation and up the side slopes into the dozer track marks. After each lift is compacted with the dozer, a 12-ton, 84-inch vibratory sheeps-foot roller, or equivalent, will be used to roll the material. The daily activities will be recorded, including any tie-in locations, thickness of each compacted lift, verification of the compaction and moisture content testing, verification of equipment used for compaction, and verification of dozer tracks at the tie-in surfaces (no smooth surfaces). Field logs and photographs documenting the field work will be provided to the Department. A topographic survey will confirm the top of excavation and top of clay grades.

Excavation will be such that 2H:1V slopes will only be encountered on the outer edge boundaries of each cell. A 3H:1V working face slope, beginning at the 2H:1V slope face, will be used for landfilling the waste.

Leachate generated from all cells currently flows to a toe drain extending east to west along the northern perimeter of Cells 16 and 17. ~~Leachate generated will flow north to the proposed toe drain extension. The existing toe drain will be extended along the northern perimeter to the northwest corner of Cell 17.~~ The toe drain flows west to east and terminates in a manhole located between Cell 16 and Pond 3. The toe drain will "daylight" approximately 3 feet above the bottom of the manhole. A dedicated pump with float control system will be used to transfer leachate from the manhole to [the lined section of the Pond 3.](#) ~~The lined section of the pond will be used to aerate~~

~~(naturally or through surface aerators) the leachate, before discharging leachate it over into the unlined section of the pond. Leachate treatment through aeration and disposal over the unlined section will be used as needed the primary leachate treatment and disposal approach. During intervals in which leachate cannot be pumped to the lined pond due to constraints such as the lack of capacity or the maintenance issues Pond 3, leachate will be collected and hauled off-site to a permitted wastewater treatment facility for treatment and disposal.~~

3.8 METHOD OF CELL SEQUENCE

Angelo's Aggregate Materials is currently (as of ~~January 2019~~ March 2020) filling in Cells ~~1—7, 15 and 17~~ 6 of the Class III Landfill. The cell ~~construction and filling~~ sequence operations will be as follows:

Phasing Sequence 1

~~Fill Cell 17 to an elevation roughly equivalent to the current elevation of Cell 16, (approximately 137 ft. NGVD). Filling in Cell 17 will start in the east and move to the west for each lift. Lift thickness may vary but will generally be less than 10 to 12 feet. As shown in Operations Plan Minor Modification Permit Plan Set~~
~~Continue filling Cells 1-7, 15 and 16 in 10—12-foot lifts to waste elevation of 172'~~
~~Maximum slope is 3H:1V from base grade to waste elevation 167'; 1% to 2% grade from waste elevation 167' to 172'—~~
~~Sideslope berms and stormwater appurtenances are to be constructed at final closure.~~
~~Construct Cell 17 in accordance with permitted design.~~

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Phasing Sequence 2

~~Fill Cells 16 and 17 to an elevation roughly equivalent to the current elevation of Cells 1-7, and 15. Filling will start in the east and move to the west for each lift. Lift thickness may vary but will generally be less than 10 to 12 feet. As shown in Operations Plan Minor Modification Permit Plan Set~~
~~Continue filling Cells 1-7, 15 and 16 in 10—12-foot lifts to waste elevation of 172'~~
~~Begin filling Cell 17 with 4—6 feet lift north of the temporary stormwater and leachate diversion swale until cell is floored out. Remove temporary swale and fill with 4—6 feet lift.~~
~~Continue filling Cell 17 in 10—12 foot lifts from base grade to waste elevation 147'. Maximum slope is 3H:1V from base grade to waste elevation 147'.~~
~~A 10-ft wide stormwater bench is to be constructed at elevation 137'.~~
~~Sideslope berms and stormwater appurtenances are to be constructed at final closure.~~

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Phasing Sequence 3

~~Fill vertically over the entire permitted footprint. Filling will start with side slopes where feasible. Filling may occur on the top deck simultaneously with side slope filling to allow for select loads to be placed on the side slopes. Filling of the top deck will start on the east and move west for each lift. Lift thickness may vary but will~~

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generally be less than 10 to 12 feet. Filling will continue such that the final waste grades (slopes and elevations) shown in Sheets C1.00 and C1.10 of the Permit Plan Set are not exceeded. As shown in Operations Plan Minor Modification Permit Plan Set

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Construct overall landfill vertical expansion to include maximum sideslope of 3H:1V from base grade to waste elevation 137', 187' and 212'; 1% to 2% grade from waste elevation 217' 212' to 212' 217'
10 ft wide stormwater benches to be constructed at waste elevations 137' and 187'.

Phasing Sequence 4 ————— As shown in Operations Plan Minor Modification Permit Plan Set
Construct final closure cover system over Cells 1, 2, 3, 4, 5, 6, 6B, 7, 15, 16 and 17 in accordance with the revised overall landfill vertical expansion closure design.

Construct sideslope berms (2% min. to 4% max.) and stormwater appurtenances.
Construct landfill gas vents.

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Lift height includes cover material. Due to the landfill bottom elevation, some lifts may not be a full 10 feet in height.

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As each sequence is active, the following procedures will be followed.

- The access road to the working face will be constructed and graded as necessary.
- Waste will be compacted as it is placed. General lift height will be 10 feet and will come within three (3) feet of the final elevation to provide for final cover.
- The working face will remain approximately 100 feet in length.
- Avoid channelizing stormwater flows
- Use mulch, grass, and maintain intermediate covers
- Weekly cover of six (6) inches of soil will be placed on the working face.
- Intermediate cover of 12 inches of soil will be placed in areas that will not receive waste within 180 days. The cover may be removed immediately prior to placement of new waste.

3.8.1 Vertical Expansion / Conceptual Closure

The landfill is permitted to be completed to a maximum height of 220 feet, NGVD. The final grading plan is shown on Drawing C2.00 of the Operations Plan Minor Modification Permit Plan Set provided in Section 4. The Conceptual Closure Plan includes permitted Cells 1-7 and 15, 16 and 17.

The Conceptual Closure Plan includes construction of tack-on berms on at the stormwater benches terraces (tack-on) as shown on the plans. that will. The terraces (tack-on) are graded to direct

stormwater to ~~drop inlets and downcomer pipes~~ filter point mat spillways spaced approximately every 400 – 500 feet along the ~~benches~~ terraces (tack-on). The terraces (tack-on) include an 8-inch perforated pipe toe drain system with an 8-inch solid HDPE header pipes located at each spillway. The ~~downcomer-spillway~~ pipes will discharge through an energy dissipater to the existing stormwater system. The facility's overall stormwater management system is governed by the mining operations and ERP Permits. Grades and elevation vary based on ongoing mining operations and topography. A detailed design that will tie the conceptual closure plan into the facility's stormwater management system will be submitted at the time of closure.

The top (~~12% min.~~ to ~~24% max.~~ grade) and side slope (~~4H:1V and 3H:1V~~) designs provide for proper drainage and minimize rainfall infiltration into the landfill surface.

3.8.2 Erosion Control

The following engineering controls will be used to minimize erosion at the working face:

- Regrade a maximum of 100 linear feet of the outer edge slopes at a time to 2H:1V. The purpose of this recommendation is that a relatively small area will be subjected to surface erosion at any given time.
- Construct a berm if rainfall is expected along the top of the slope during the regrading to redirect any rainfall runoff away from the working face of the slope. The area along the berm should be graded so as to allow rapid runoff along the top of the slope. Ponding of water near the top of the slope should not be allowed, since seepage through the slope may initiate slope erosion.
- ~~As soon as possible following the construction of the clay layer, begin to fill against the Cell 7 2H:1V slope with the landfill material.~~
- Avoid channelizing stormwater flows
- Vegetative cover will be placed on top of the intermediate cover for erosion control purposes. All or part of the intermediate cover may be removed before placing additional waste or installing final cover.

3.8.3 Life Expectancy

The cell capacity and lifespan estimate for Cells 1 – 7, 15, 16 and 17 and vertical expansion have been estimated using the October 2018 topographic survey performed by Pickett and Associates (~~Sheets 1 and 2 of Section 4 in the Operations Plan Minor Modification Plan Set~~); and recent and projected tonnages.

Using the October 2018 topographic survey as a base, a three-dimensional AutoCAD model of Cells 1 – 7, 15, 16 and 17 with vertical expansion at closure was generated, using the following assumptions:

- For ~~all cells except Cell 16 and Cell 17~~ Cells 1-7, 15, 16 and 17, 3H:1V side slopes from base grade to waste elevation ~~212~~122'; 4H:1V from waste elevation ~~122' to 167'~~; 12% ~~MIN~~ to 42% ~~MAX~~ grade from waste elevation ~~212~~167' to ~~217~~172'
- ~~For Cell 16 and Cell 17, 3H:1V from base grade to waste elevation 122'; 4H:1V from waste elevation 122' to 147'.~~
- ~~10-foot inset for benches at waste elevations 122-ft and 147-ft NGVD~~
- ~~36 inches of cover over the 67.0-acre 2D surface was subtracted from the maximum volume~~ Volume from CAD = Top of Waste Surface (-) Topo Survey

The airspace volume remaining as of October 2018 was calculated to be approximately ~~259,312, 6,324,221~~6,536,314 yd³ after accounting for the final cover volume of 322,829 yd³.

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The following design parameters were used to compute landfill design life remaining:

- **Density:** An in-place density of 1,350 lb/yd³ (0.675 tons/ yd³) was used for the design life estimate and is a typical density for Class III waste.
- **Waste acceptance rate for 2019:** ~~2.215 tons/work-day; 286 work-days/year~~ a waste acceptance rate of 1500 tons per day was used based on facility records.

The remaining life in Cells 1 – 7, 15, 16 and 17 and vertical expansion was calculated to be ~~41-51~~40 years from the ~~survey submittal~~ date, or 2025~~9~~.

3.9 WASTE COMPACTION AND APPLICATION OF COVER

Waste received will be segregated based on compactability. Bulky, incompressible items, such as concrete, asphalt, and tree debris, will be separated and stockpiled for future processing. Tree debris may be separated from the waste and periodically mulched on-site. The remaining debris is disposed of in designated cells using onsite equipment to place the debris and a Caterpillar 826 Compactor, or equivalent, to weekly compact the waste. Initial cover material is planned to be excavated from onsite areas and placed weekly in approximately 6-inch layers on the compacted lifts to control vectors, reduce rain infiltration and provide a more stable working face area. An intermediate cover of one (1) foot of compacted soil will be applied if final cover or an additional lift is not to be applied within 180 days of cell completion. Cell closure will occur when all permitted cells are filled. For final buildout grade and closure details, see Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4, respectively. The Conceptual Closure Plan includes permitted Cells 1-7, 15, 16, 17 and vertical expansion. Fill grades shall be such that final cover elevations are not exceeded on all slopes.

Final cover consisting of 18 inches of compacted soil barrier layer and 18 inches of soil that will sustain vegetative growth, as specified in the Closure and Reclamation Plan provided in Section 7. Cell closure shall generally conform to the lines and maximum grades specified on the Plan Set (Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4 and the requirements of Rule 62-701.600 F.A.C., Rule 62-701.400 (7), F.A.C., and Rule 62-701.400(8), F.A.C.). Pesticides when deemed necessary to control rodents, insects and other vectors shall be used as specified by

the Florida Department of Agriculture and Consumer Services. Uncontrolled and unauthorized scavenging shall not be permitted at the landfill site. Controlled recycling may be permitted by the Landfill Manager. Temporary storage of soil fill or recycling materials may occur within the inactive, or closed cell areas.

3.10 DESIGN OF GAS, LEACHATE AND STORMWATER CONTROLS

3.10.1 Gas Monitoring and Control

The type of materials to be disposed of in the Class III Landfill are not expected to generate significant amounts of methane or other gases since the landfill's design prevents groundwater contact. Therefore, no active gas control systems or venting is proposed. However, because some biodegradable waste may be accepted, a passive gas control system is proposed, see Section 3.10.1.5. The Landfill Manager will conduct daily and weekly inspections of the landfill and will check for objectionable odors or gas around the perimeter of the site. The Manager will notify the FDEP of any exceedances and immediately take corrective actions. Corrective actions will include placement of additional cover material or mulch, or lime containing materials such as crushed concrete that is documented to abate the odors. Quarterly gas point monitoring is currently conducted. The facility only accepts Class III debris for disposal and accepts no putrescible household wastes. Surface water and groundwater contact with the Class III wastes will be prevented by the approved facility design. Other best management practices to prevent odors include: 1) closure of each cell as it is completed; 2) weekly soil cover application; and, 3) immediate corrective actions to abate any detected onsite odors.

3.10.1.1 Gas Probe Locations

Gas monitoring points are spaced approximately 600 linear feet apart surrounding the landfill. Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4 presents these locations of the gas probes surrounding the landfill. Gas Probes (GP) ~~6-4~~ through 15 are existing, GP 1 through ~~5-3~~ and 16 are proposed and will be installed as part of future cell construction completion or certification at closure. GP-4 was installed slightly north of the property boundary. GP-4 will be properly abandoned and replaced with GP-4R, which will be installed approximately 50 feet south of GP-4. The remaining gas probes are to be installed in accordance with the following schedule in Table 3.10:

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Table 3.10 Gas Probe Installation Schedule	
Gas Probe	Cell Construction Completion
GP-1	Future Cell 10 or closure
GP-2	Future Cell 11 or closure
GP-3	Future Cell 12 or closure
GP-16	Future Cell 9 or closure
<u>GP-4R</u>	<u>To be scheduled immediately</u>

One remaining gas probe on the eastern portion of the property is currently located immediately adjacent to the disposal area rather than at the property boundary as required by Rule. Probes GP-

6, -7, -8, -11, -12 and -13 were abandoned and replaced with GP-6R, -7R, -8R, -11R, -12R and -13R along the property boundary in 2013 and 2017.

3.10.1.2 Gas Probe Design

Figure 3-14 presents the gas probe design for the subject landfill site. These gas probes are designed to be surface sealed and to provide a greater permeability than the surrounding sediments to act as collector points for any methane gas, if present. Based on the landfill design, all of the gas probes are designed to be approximately 20-foot in depth with an 18-foot open screen for the monitoring point, or to depth of adjacent waste. These depths will allow the screened interval to intercept the full cross-section of the landfilled waste that could potentially generate methane.

The groundwater table may be encountered at depths of approximately 50-foot, or more below land surface (bls) across most of the site. Accordingly, gas probes are not designed to intercept the groundwater table. The gas probes are constructed of Schedule-40 polyvinyl chloride plastic pipe (PVC). The PVC casing and screen will be flush-threaded and have a screen slot size large enough to accommodate easy methane extraction from the monitoring point. The sand/bentonite slurry proposed for a surface seal will be a blend of 4 parts of sand to one part of granular bentonite. The sand and the bentonite will be mixed dry and hydrated immediately prior to placing it in the annular space of the borehole. The gas probe points are proposed to be installed by hollow-stem auger to construct an eight-inch borehole to be filled with pea gravel. The pea gravel will meet the requirements of FDOT standard size No. 10 aggregate washed pea gravel. Each gas probe will be protected by a surface mounted well protector and locked for security purposes. Each gas probe will terminate at the surface with a PVC ball valve to accommodate easy monitoring of methane levels, with a portable meter. The ball valve will remain closed between monitoring events and pre-purge measurements will be recorded. In the event of a positive gas measurement, the post-purge measurement will also be recorded.

3.10.1.3 Methane Gas Measurement

In accordance with the requirements of the current FDEP permits, methane gas levels are monitored at each of the active gas monitoring points quarterly, with results submitted to the FDEP. A lower explosive limit (LEL) meter will be used to measure methane levels from each of the gas probes. LEL meters, such as the MSA Model 260 or GEM 500 or equivalent, will be used to conduct this monitoring. These meters are capable of measuring percent volume of methane in air and the percent LEL level of the methane by volume. The meter will be calibrated in accordance with manufacturer's specifications prior to each methane monitoring event. Attachment 4 of the Operations Plan provided in Appendix 3-A presents the proposed gas monitoring probe survey form to be used to conduct the quarterly monitoring at the subject site. This form will document at the time of each gas probe reading, air temperature in degrees Fahrenheit, methane levels in percent volume in air and percent LEL. The reporting action level for methane in air will be considered 5 percent by volume in air as measured by the lower explosive limit. The reporting action limit for methane in structures is 25% of the LEL, or 1.25% methane by volume. The results of each quarterly gas probe survey will be submitted to the Department on the presented form within two weeks of each monitoring event. These events are

planned to be coordinated with the semi-annual groundwater monitoring at the subject site.

3.10.1.4 Gas Contingency Plan

The following Contingency Plan will be implemented if any of the measured gas monitoring points methane levels are detected above the 100% LEL of greater than 5 percent methane in air, or if 25% of the LEL or higher is measured in a structure. If this level of methane or greater is detected in any of the probes, the Facility operator will institute measurement of methane in nearby, at, or below grade structures, i.e., stormwater collection points, or any maintenance or office buildings within 100 feet of the subject gas probe on a weekly basis until these levels go below the 100% LEL at the subject probe. If methane levels measured in any on-site building exceed 25% of the LEL, building windows and/or doors will be opened for ventilation and all personnel evacuated until methane readings are maintained below 25% of the LEL for methane. The monitoring report for any event that detects methane above the LEL will also report methane levels from nearby structures, as indicated above, until the levels go below the methane LEL level or until corrective actions are conducted to reduce methane levels. The FDEP will be notified within seven days of any gas monitoring levels that exceed the reporting action levels.

3.10.1.5 Passive Gas Vents

Within 90 days of closure of each landfill cell, a passive landfill gas vent will be installed at the highest point of the cell to prevent explosions, fires and damages to vegetation from methane gas buildup. Sheet ~~C3.00~~C2.00 in Section 4 shows the location of the 12 gas vents and Figure 3-16 presents the design of a typical vent. The facility's gas emissions are expected to be far below the threshold of a Title V or an NSPS permit.

3.10.2 Leachate Control

Any leachate that may be produced at the landfill will be controlled with the use of a continuous 3-foot thick clay layer (1×10^{-8} cm/s) on the bottom of the cells. The clay layer beneath each individual cell forms a continuous barrier layer that is graded to direct leachate to the toe drain extending east to west along the northern perimeter of Cell 16 and Cell 17. The toe drain slopes from west to east and terminates in a manhole between Cell 16 and Pond 3. The toe drain "daylights" approximately 3 feet above the bottom of the manhole. A dedicated pump with float control system is used to transfer leachate from the manhole using a 3-inch diameter SCH 40 PVC pipe to the lined section of the Pond 3. A submersible pump from Liberty Pumps The site is currently using (-LEH100-Series 1 HP) is currently submersible pump from Liberty pump, which caused to pump leachate from the manhole to the lined section of the pond. As if needed, site may replace the current pump may be replaced with LE100-Series 1-HP submersible pump from Liberty pPumps or equivalent. The pump sizing calculations for leachate transport through a 3-inch diameter leachate forcemain is are shown presented in the Attachment A.

Leachate will be treated through natural or active aeration in the lined section of the pond and through natural attenuation after discharging the treated leachate over into the unlined section of the Pond 3. A site layout showing leachate forcemain and the location of lined pond is presented in Attachment B. Aeration in the lined section and natural attenuation in the unlined section is -as

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~~needed the primary leachate treatment and disposal approach. During intervals in which leachate cannot be pumped to Pond 3, leachate will be collected and hauled off-site to a permitted wastewater treatment facility for treatment and disposal when it cannot be pumped to the lined pond due to constraints such as the lack of capacity or the maintenance issues. Leachate that is discovered to be hazardous, will be managed as hazardous waste.~~

The controlled method of screening waste also supplements the leachate control. Because the Applicant privately owns the Enterprise Class III Landfill facility, most of the haulers, waste generators, and sources of waste are known to Angelo's and the scale house attendants. For those haulers that are unfamiliar to the Applicant, the scale house attendants question the haulers more intensely to determine the contents of their loads. The spotters and operators add additional monitoring at the active disposal location. The addition of video surveillance to the monitoring process of incoming wastes helps to identify fires or smoking loads. Combined methods of screening waste ~~is~~^{are} an effective method to reduce any possible threat to public health or the environment.

~~During intervals in which leachate cannot be pumped to Pond 3, leachate will be collected and hauled off-site to a permitted wastewater treatment facility for processing and disposal. Leachate collected in the wetwell will be pumped using the wetwell's submersible pump system into a 10,000-gallon, fiberglass storage tank (27' long with 8' diameter). A 2" DIA PVC pipe and hose will tie into the existing 2" diameter SCH 40 PVC pipe leading to Pond 3. The pipes leading to both the storage tank and Pond 3 will be valved to control discharge to either location. The storage tank will be located approximately 20' southeast of the wetwell along the east side of the perimeter road. The level within the storage tank will be checked using a sounding rod by site staff each work day. An optional sight gauge may be installed on the tank in the future to measure liquid level. When the level in the storage tank reaches liquid level of 5.4' (6,000 gallons) a tanker truck will be brought to the site to remove the leachate from the storage tank. The tanker truck operator will use the truck pump to remove the leachate from the tank. Records for leachate hauling including date, company, incoming (empty) weight, outgoing (truck plus leachate), and net leachate hauled will be kept on site at the scalehouse.~~

3.10.3 Stormwater Controls

The approved Stormwater Management Plan for the landfill consists of berms, swales, and ponds constructed within the 200-foot landscape buffer zone to divert, collect and contain stormwater runoff from the completed site. These stormwater facilities are designated to retain the 100-year, 24-hour storm volume as required by Pasco County and the FDEP. During excavation, construction and waste disposal a 6-foot berm adjacent to active and filled cells retains stormwater from the filling area and diverts stormwater from the excavation area and pumped to stormwater Pond 3. The remaining portion of the temporary stormwater pond will be filled as part of the construction of Cell 17. Pond 3 has been permitted through the Industrial Wastewater division of FDEP. Additional details concerning the stormwater management system are provided in Drawing Sheet C3.00 ~~and C3.10.~~

3.11 EROSION CONTROL

The perimeter swales and ponds surrounding the landfill prevent stormwater from leaving the property. The series of berms described in Section 3.10.3 above will help prevent erosion.

Additionally, landfill side slopes will be constructed at 3H:1V from base grade to an elevation of 220' - 212' NGVD and will receive intermediate cover to be maintained until final landfill closure that will occur when all existing and proposed cells are filled. See the Reclamation and Closure Plan provided in Section 7 for further details.

3.12 FINAL GRADE PLAN

~~The filling sequence of the landfill is shown on Sheets C1.00 through C3.10. The final grading plan is shown on Drawing C2.00 of the Operations Plan Minor Modification Permit Plan Set provided in Section 4. The excavated areas will be certified to the approved bottom grades prior to accepting any waste material. The finished elevation after all fill material has been placed and final cover provided is designed to reclaim excavated areas.~~

3.13 SETBACKS AND VISUAL BUFFERS

The following setbacks (buffers) shall be used:

1. Minimum of 200 feet from the property boundary to landfill footprint.
2. Minimum of 500 feet setback from surrounding potable residential wells to landfill footprint.

Buffer areas maintain visual screening of the landfill by the following methods.

1. 8-foot high berms along the frontage of Enterprise and Auton roads.
2. Landscaping and trees to provide visual buffers within setback areas
3. Existing trees within the setbacks will be maintained.

3.14 FOUNDATION ANALYSIS

A Geotechnical analysis was conducted on the landfill site to evaluate if the base and geologic setting are capable of providing structural support. Universal Engineering Sciences, Inc. completed the Geotechnical Report revised December 12, 2018. Slope stability and settlement analysis provided in Section 2, Appendix I-2 was completed by Civil Design Services, Inc. and revised December 21, 2018. These revisions included the Cell 17 and Cells 1-7, 15 and 16 vertical expansion. The report concludes that the landfill base will adequately support the Class III landfill wastes without excessive settlement. It also states that the potential for sinkhole development on the site is low. In the event a sinkhole is discovered on-site, or within 500-feet of the site, the Department will be notified within 24 hours. A reclamation plan of action will be submitted to the Department within seven days.

3.15 CERTIFICATION

Laboratory testing and observation of cell floor conditions during cell construction completion shall consist of the following:

- In-place density testing for each 12-inch thick soil lift, based on laboratory proctor test results for the construction material, will be recorded by a properly trained technician. These are to be conducted at the location of each permeability test.
- Thickness testing of each lift will be recorded at a minimum frequency of two tests per acre, per lift.
- Confirmation hydraulic conductivity testing of Shelby tube or drive cylinder samples of the compacted cell floor material will be performed at a minimum frequency of one test per lift, per acre.
- Observance for unstable areas such as limestone, sink holes and soft ground will be performed for each cell.

If the test data from a cell floor section does not meet the requirements of the anticipated conditions of the hydrogeological and geotechnical reports and the requirements of the facility construction permit, additional random samples may be tested from that cell section. If the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable. If not, that cell will be reworked or reconstructed so that it will meet these requirements. Field test methods, including rejection criteria and corrective measures, shall coincide with 62-701.400(8).

Upon completion of construction of any cell within the disposal facility, the certification of construction completion will be provided to the FDEP on form 62-701.900(2), F.A.C. The applicant will provide the completed form to the FDEP, along with the quality assurance test results described above, and arrange for an inspection prior to acceptance of Class III wastes into the constructed disposal area.

3.16 OPERATIONS PLAN

The Landfill's Operations Plan is included as Appendix 3-A.

3.17 CONTINGENCY PLAN

The Landfill's Contingency Plan is included as Appendix 3-B.

Appendix 3-A
OPERATIONS PLAN

ENTERPRISE ROAD CLASS III RECYCLING AND DISPOSAL FACILITY
MINOR PERMIT MODIFICATIONS TO MINOR INTERMEDIATE MODIFICATION PERMIT
APPLICATION
LANDFILL OPERATIONS PLAN

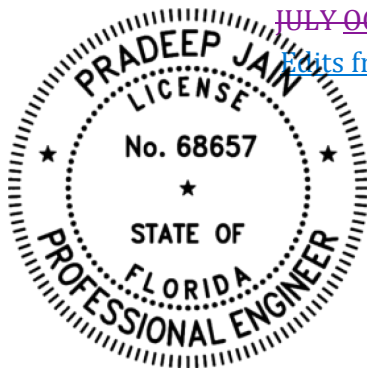
Prepared for:

ANGELO'S AGGREGATE MATERIALS, LTD
855 28th Street South
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Prepared by:

LOCKLEAR & ASSOCIATES, INC.
4140 NW 37th Place, Suite a
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~~JULY OCTOBER~~ November ~~APRIL 2019~~ 2020

Edits from Dr. Shrawan Singn and Pradeep Jain performed under the
supervision of

Lisa J. Baker Pradeep Jain, P.E.
Florida PE # ~~74652~~ XXXXX68657

This item has been digitally signed and sealed by Pradeep Jain, PE, on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any
electronic copies.

**ENTERPRISE RECYCLING AND DISPOSAL FACILITY
OPERATIONS PLAN
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ATTACHMENTS

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ATTACHMENT 2	RANDOM LOAD INSPECTION FORM
ATTACHMENT 3	FACILITY TRAINING LOG
ATTACHMENT 4	GAS MONITORING SURVEY FORM
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1.0 DESIGNATION OF RESPONSIBLE PERSON(S) AND REFERENCES

Mr. ~~Edward Choquis~~~~John Arnold~~, P.E. is designated by Angelo's Aggregate Materials, LTD. (Applicant) as the individual responsible for operation and maintenance of the Enterprise Road Class III Recycling and Disposal Facility (Facility) in accordance with Rule 62-701.500, F.A.C. All correspondence and inquiries concerning the Facility permits and operation should be addressed to him at:

Mr. ~~John Arnold~~~~Edward Choquis~~, P.E.
Angelo's Aggregate Materials, LTD.
855 28th Street South
St. Petersburg, Florida 33712
Telephone: (~~352813~~) ~~46777-0000~~~~1719~~

Updated plan sheets ~~and figures~~ are provided in Sections ~~3 and 4~~. ~~Section 3 figures were unchanged and therefore are referenced and not provided as part of this application.~~

2.0 LANDFILL SITE IMPROVEMENTS

The 160 acre landfill site is also permitted by Pasco County to be a Class I mine (Pasco County Petition #CU04-26, approved 9/23/2004). The following site improvements have been installed to continue operation of the Class III Landfill.

2.1 Facilities

An office trailer (gate house) is located onsite for the gate attendant. This trailer has hand washing and toilet facilities. Bottled potable water is used to provide drinking water for the trailer. Electric and telephone services are available to the trailer office. Site entrance improvements also include an all-weather entrance roadway, scales and perimeter road as shown on the Operations Plan ~~Minor~~ Modification Plan Set provided in Section 4.

2.2 Primary Haul Routes

The primary haul routes used to reach the Facility are U.S. 301, S.R. 52, C.R. 35A, U.S. 98, and Clinton Avenue. These routes lead to Enterprise Road, which is used to access the facility.

Enterprise Road was improved by the Applicant to an all-weather, paved access roadway from C.R. 35A to Auton Road. Enterprise Road is a Pasco county owned roadway that is maintained by the county. The Facility has an all-weather, paved access roadway that will be maintained by the Applicant to provide adequate access at all times.

2.3 Effective Barrier

The existing Facility property previously had a five-foot high wire fence along the perimeter of the site. A 6-foot security fence has been constructed along the south and east boundaries. The security fence consists of a 6-foot high galvanized chain link fence, hereafter referred to as the "security

fence.” The five-foot wire fence still exists along the north and west property boundaries. The chain link fence has been installed in accordance with permit issuance in October, 2001. Three (3) foot square “NO TRESPASSING” signs with five-inch letters has been installed at no less than 500-foot spacing and at all corners to notice unauthorized access. The only point of access into the landfill site will be through the ticket gate at the entrance. This gate will be locked during closed hours.

An 8-foot high landscape berm has been constructed along the frontages of Enterprise and Auton roads as a visual and noise buffer.

3.0 OPERATING HOURS

The landfill will have the following operating hours:

Day	Hours of Operation
Monday through Friday	7:00 am to 6:00 pm
Saturday	7:00 am to 12:00 pm

Operational hours may be extended periodically to meet special requests of customers, but at no time will normal operating hours extend beyond 7:00 A.M. to 7:00 P.M. Monday through Saturday. Waste will not be accepted during non-daylight hours.

4.0 CONTINGENCY OPERATIONS

If a natural disaster occurs at the facility rendering it unusable, the waste accepted at the Facility would be rerouted to another permitted landfill. If a storm occurs within the surrounding community, storm debris waste will also be accepted at the facility, providing additional staff if required. In terms of equipment breakdown, there will be two operating pieces of equipment for all stages of landfill operation. Currently, Angelo's has on-site two compactors [Cat 826 (2)], two loaders (Cat 950, Cat 980), two dozers (Cat D5, Cat D8), four excavators [John Deere 450 (2), Komatsu PC1100, Komatsu PC300], and two articulated dump trucks (Volvo). If both should breakdown, replacements can be rented or substituted from onsite or offsite within 24 hours.

The site access roads will be constructed to allow passage of vehicles under all expected weather conditions. See Appendix 3-B of the Engineering Report for the Contingency Plan.

5.0 WASTE STREAM QUALITY CONTROL PLAN

5.1 Visual Inspection

~~An estimated 1500~~Approximately 2,215 tons of Class III waste material is currently received at the facility daily. Materials brought onto the Enterprise Road Class III RDF site will be inspected three times. The first inspection takes place at the site entrance. The site will only accept Class III debris (which includes construction and demolition debris by definition); therefore, any vehicles hauling unacceptable waste can be turned away by the attendant at the ticket gate. The gate attendant will

question all waste carriers as to the character and origination of their wastes. A mirror is installed overhead and angled to allow gate inspection of all loads after they are untarped. A video camera has been installed over the scale location that allows the gate attendant to visually screen all carrier loads prior to disposal, mainly to identify fire or smoking loads. For loads that are not accepted, a Rejected Load Form will be completed.

The second inspection is a visual inspection that will occur at the working face by a certified, trained spotter. The spotter stationed at the working face will be responsible for spotting trucks bringing in disposal loads. The spotter will show the drivers where to unload, and will also inspect the trucks to make sure unacceptable materials are not unloaded. The spotter will have the authority to ensure that unacceptable materials are reloaded on the truck the material was brought in on.

The third inspection will occur as the waste is spread by the equipment operator. Any unacceptable wastes observed will be placed in the appropriate container located at the working face. The equipment operator may also serve as the spotter and will perform both visual inspections - as the waste is unloaded and as the waste is spread.

The facility will deploy and use spotters based on the volume of waste disposed at the working face. No more than two loads will be allowed to dump simultaneously per spotter at the working face.

5.2 Documentation of Waste Received

Documentation includes recording the name of the company disposing of the waste, driver's signature/information, all vehicle identification numbers, quantity of waste (tons), and type of waste (to meet FDEP and Pasco County's requirements). All vehicles entering the landfill will be weighed. The type of material and location from which the waste was generated will be recorded. This provides a record for tracing ownership of individual loads. See Landfill Operating Records, Section 19.2 for more details.

5.3 Contingency for Unacceptable Materials

If unacceptable waste materials are delivered to the landfill, the truck will be refused entry after inspection at the gate. If the unacceptable waste materials are observed by a spotter while unloading, they will be reloaded onto the delivery vehicle. Should the vehicle leave before the unacceptable waste has been discovered, Enterprise Road Class III RDF personnel will place the unacceptable material into an appropriate container located at the working face. A maximum of 20 cubic yards of covered dumpster storage for Class I waste will be provided near the active face of the landfill, as shown on the Operations Plan ~~Minor~~-Modification Permit Plan Set provided in Section 4. These containers are transported by Central Carting Disposal (or other qualified vendor) to a disposal facility permitted to accept Class I material. The covered storage containers will control vectors and odors and Class I waste will be removed within 30 days of discovery. If the storage containers cannot be secured to control vectors and odors, the putrescible waste will be stored no longer than 48-hours.

Unacceptable nonputrescible, non-hazardous wastes, such as batteries, paint, chemicals or similar items that are inadvertently accepted will be removed when observed and stored in a roll-off container or pile at the working face and removed daily to a lockable storage unit. A maximum of 40 cubic yards of stored unacceptable, nonputrescible, non-hazardous wastes may be provided near the active face of the landfill, as shown on the Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4. These materials will be removed from the site at least every 30 days (sooner if required) by a qualified vendor and taken to their facility for processing and proper disposal. Class I material is removed by Republic Services; Fluorescent bulbs and other related hazardous materials are removed by US Ecology. This plan should meet the inspection needs for the site to prevent disposal of unacceptable wastes.

If suspect regulated hazardous wastes are identified by operators or spotters by random load inspection or discovered deposited at the landfill, the FDEP will be notified promptly, as well as the hauler and generator of the wastes, if known. The area where the hazardous wastes are stored will immediately be secured from public access. If the generator or hauler cannot be identified, Enterprise Road Class III RDF will assume the cleanup, transportation and disposal of the waste at a permitted hazardous waste management facility.

5.4 Acceptable and Unacceptable Class III Landfill Waste Materials

The Enterprise Road Class III RDF will accept only those solid wastes as defined in Rule 62-701.200 (14), F.A.C. as Class III wastes, except as allowed otherwise by permit.

Acceptable Class III waste materials include the following:

- Land clearing debris
- Demolition debris
- Glass
- Carpet
- Cardboard
- Asbestos
- Plastic
- Automobiles and parts without visible contamination from petroleum products or other chemicals
- Construction debris
- Non-Treated Wood Pallets
- Unpainted, painted and untreated wood scraps from manufacturing
- Waste Tires (Processed)*
- Paper
- Furniture other than appliances
- Yard trash

- * Processed waste tires are acceptable for disposal in the Class III Landfill provided that they have been cut into sufficiently small parts. The processed waste tire parts may be disposed of or used as initial cover at a permitted landfill. For use as initial cover, a sufficiently small part means that 70 percent of the waste tire material is cut into pieces of 4 square inches or less and 100 percent of the waste tire material is 32 square inches or less. For purposes of disposal, a sufficiently small part means that the tire has been cut into at least eight substantially equal pieces. Any processed tire which is disposed of in a landfill and which does not meet the size requirement above must receive initial cover, as defined in subsection 62-701.200(53), F.A.C., once every week.

The following is a compilation of unacceptable Class III waste materials:

- Putrescible Household Waste
- Paint (liquid)
- Any toxic or hazardous Materials (i.e., batteries, solvents, oils, etc.)
- Contaminated soils
- Electronics
- Refrigerators, freezers, air conditioners (white goods)
- Biomedical waste
- Automobiles or parts that are contaminated with petroleum products or other chemicals.
- Septic tanks and pumping
- Whole waste tires (except at the waste tire processing facility)
- CCA Treated wood

The site has a visible sign at the site entrance on Enterprise Road as provided in Attachment 1. The sign identifies the accepted wastes, hours of operation, landfill classification, and site's 24-hour emergency contact and telephone number. Industrial or excavated waste will be considered for acceptance on a case by case basis, only with prior consent of the Department.

5.5 Random Load Inspection

In accordance with Rule 62-701.500(6) a., F.A.C., the owner or operator will implement a load-checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill. The load checking program will consist of the following minimum requirements:

1. The landfill operator will examine at least three random loads of solid waste delivered to the landfill per week. The waste collection vehicle drivers selected by the inspector will be directed to discharge their loads at a designated location in the landfill. A detailed inspection of the discharged material will be made for any unauthorized wastes. The landfill operator will assure the random inspections will be distributed between both loads originating from the transfer facility and other private waste haulers delivering waste to the landfill.
2. If unauthorized wastes are found, the facility will contact the generator, hauler, or other party responsible for shipping the waste to the landfill to determine the identity of the waste sources.

The following procedures will be followed when inspecting the load:

- A. The load will be "broken apart" by both the spotter and equipment operator to allow for a thorough inspection.
- B. The inspectors will be searching and removing de minimis amounts of unauthorized waste contained in the load.

- C. If the load contains more than de minimis amounts of unauthorized materials, they will immediately be reloaded onto the customer's vehicle for removal from the site. In the event that the transporter will not remove the unacceptable materials, the materials will be loaded into an appropriate container and removed from the site. The customer/generator will be contacted and notified of the site policies as well as charged for the off-site disposal services.
- D. In all cases, if more than minimal unacceptable wastes are found during the inspection, the customer will be notified to assure the prevention of future occurrences.

All inspection will be documented on the site's "Random Load Inspection Form," signed by the inspector, and kept in a current Log Book, see Attachment 2. Log books will be maintained at the landfill for at least 3 years. Inspections will be performed by trained site personnel.

5.6 Asbestos Waste Disposal

Asbestos-containing materials (ACM's) will be accepted for disposal in accordance with 40 CFR Part 61.154. Arrangements for disposal of ACM's between the Facility and the waste generator/hauler will be recorded in the operations record as to the quantity and date of shipment to the landfill. The loads are accepted at pre-arranged times during operational hours.

To ensure that all waste deposited at the Facility meets state and local requirements, all facility personnel will receive training from their supervisor on the identification of unacceptable materials, which is any waste other than properly labeled and bagged ACM. Unregulated, non-friable asbestos containing materials are not required to be bagged, but all other requirements are unchanged.

Each load of ACM arriving at the facility must be accompanied by a completed Waste Shipment Record (WSR) in accordance with 40 CFR 61.150. Each load will be inspected to ensure that it is properly bagged, that bags are intact and properly sealed, and that the required warning labels and generator labels are affixed. Bags will not be opened prior to disposal.

ACM arriving at the Facility for disposal will be visually screened by facility personnel a minimum of two times. The first screening will be at the scales, controlling access to the Facility, where the truck drivers will be questioned as to the contents of the load and the shipping documents will be reviewed. The gate attendant will direct the drivers to the appropriate disposal area.

The second screening will be at the working face where a trained inspector/spotter will again question the driver and make a visual examination of the load prior to dumping and as it is dumped. This examination will ensure the ACM is properly bagged, the bags are intact and properly sealed, and that the warning labels and generator labels are affixed.

Facility personnel will direct the waste hauler to the designated ACM disposal location in each cell, to be determined by the Operator. The ACM will be covered with 6-inches of soil at the end of any day that ACM is accepted. This designated ACM location will be recorded and updated by the annual

topographic survey in accordance with 40 CFR 61.154. ACM disposal records will be maintained for the life of the landfill and disposal locations documented in the Closure Report.

5.7 Incidental Recycling Operations

The Class III landfill does have a separate, dedicated materials recycling area. However, if recyclable wastes are incidentally received, such as metals, concrete rubble, asphalt, and wood wastes, the facility will separate them in stockpiles or in roll-off containers. Concrete and asphalt will be periodically transported to an appropriate location for crushing. Yard and wood wastes may be chipped for use onsite or be placed in roll-off containers for shipment to a wood recycler. These materials will be removed from the site approximately every 6 months. However, if the storage capacity is exceeded, the materials will be removed sooner. Incidental recyclable materials that are identified at the disposal area will be placed in containers located near the working face, as follows and as shown on the Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4.

TYPE	MAX. QTY	STORAGE
Ferrous Metal	500 CY	Roll-off or pile
Aluminum	300 CY	Roll-off or pile
Stainless Steel	300 CY	Roll-off or pile
Copper	25 CY	Trash pail, roll-off or pile
Asphalt	300 CY	Roll-off or pile
Concrete / Rubble	300 CY	Roll-off or pile
Recyclable electronics	8 CY	Covered dumpster

Trucks identified at the entrance as carrying primarily recyclable products, (i.e., concrete, metal, wood, paper) will be refused entrance into the landfill.

5.7.1 Reports

A Recovered Materials report will be submitted by type of waste recovered and tonnage to the FDEP and Pasco County Solid Waste Department. These reports will also be compiled into an annual report to the FDEP.

5.8 Wood Acceptance Area

The facility is a registered Source-Separated Organics Processing Facility and in compliance with the requirements specified in Rule 62-709.320 and Rule 62-709.330. Initial inspection will be performed at the scalehouse by the attendant. Wood wastes are stockpiled until processing takes place every 180 days. Personnel trained to identify and remove any unacceptable wastes will be present during processing. Unacceptable wastes, if found, will be removed prior to wood processing.

5.9 CCA Treated Wood Management Plan

The following serves as the CCA-treated wood management plan required by 62-701.730(20), F.A.C. Employees will be trained in the proper management of CCA-treated wood. CCA-treated (chromate-copper arsenate) wood must be stored in the temporary storage container for waste destined to go to a lined facility. CCA-treated wood is not allowed to be disposed of in the Enterprise Class III Recycling and Disposal Facility.

The following is strictly prohibited:

- Disposal of CCA-treated wood in any unlined landfill or disposal facility
- Burning of CCA-treated wood in an open burn or an air curtain incinerator
- Mulching of CCA-treated wood or use of CCA-treated wood in other soil amendment products

There are several ways for employees to identify CCA-treated wood: 1) determining the place of origin, 2) identification by shape – typically large, dimensioned pieces of wood and 3) identification by color. CCA-treated wood has been used in a variety of applications including fencing, docks, outdoor decks and stairs, playground equipment and landscaping. The wood is typically large – dimensioned 4-inches or larger.

The most common method for visually identifying treated wood among lumber, timber and plywood is to look at the color of the wood. Untreated wood and borate-treated wood typically have a light-yellow color. Wood treated with copper varies in color from a very light green to an intense green color depending on the degree of treatment. A higher degree of treatment is typical for marine applications and for structure with a high load-bearing support. Once the wood treated with copper has been in-service and has weathered, the green color is generally converted to a silver color. It still may be difficult to visually distinguish weathered treated wood from weathered untreated wood.

Employees are cautioned against handling CCA-treated wood. Workers handling wood preserved with CCA should be sure to wash their hands before eating or smoking. CCA-treated wood splinters in the hands and fingers of workers are reported to be very problematic and should be removed as soon as possible. It is important to make sure that the entire splinter is removed. Removal may require medical attention.

The most efficient way to minimize CCA-treated wood disposal in the facility is to communicate with landfill customers. Dedicated, separate suitable temporary container for CCA-treated wood at demolition and construction job sites can be used. At the scale house, personnel will question transporters on the type of wood and direct customers to dispose CCA-treated wood at a Class I landfill. Personnel will also perform a visual inspection at the scale house if necessary, especially for loads originating from the construction and demolition of fences and decks.

The facility shall incorporate CCA-treated wood into its spot-checking program. Spotters visually inspect and determine if any dimensioned wood is in the load, such as railroad ties and fence posts or building materials. If CCA-treated wood is found, the load will be diverted to a Class I landfill for disposal. Tipped loads will be spread and inspected for the presence of CCA-treated wood. CCA-treated wood will be adequately protected from rain to prevent leaching of contaminants.

6.0 WEIGHING OR MEASURING INCOMING WASTE

A scale system is used to weigh incoming waste. The scales will be calibrated every six (6) months. Vehicles will be weighed when they enter the disposal site, and based upon the tare weight of the vehicle, the waste tonnage will be determined. Prior to unloading debris, the tonnage or volume of the waste material disposed will be determined and the appropriate fee assessed. Weigh tickets will be kept on-site for a minimum of 5 years.

6.1 Fee Schedule

The fee schedule for disposal varies depending on the client, type of waste and volume received.

Waste Type	Unit	Fee per Unit
Class III	CY	Variable

This fee schedule will be periodically revised according to the prevailing market for waste disposal. The Operator will notify clients immediately in writing of all fee schedule changes.

7.0 VEHICLE TRAFFIC CONTROL AND UNLOADING

Generally, truck traffic will be controlled by first-in, first-out, as directed by the spotter located at the working. There will be adequate space for truck staging at the site's entrance (7-8 trucks) to mitigate any queuing onto Enterprise Road. Enterprise Road Class III RDF will discourage any truck staging prior to landfill opening. Signs will be posted at the entrance gate and on interior roads to guide mining truck traffic vs. landfill truck traffic to their appropriate areas of the site.

8.0 METHOD OF CELL SEQUENCE AND LIFE EXPECTANCY

8.1 Cell Sequence

Angelo's Aggregate Materials is currently (as of ~~January 2019~~ March 2020) filling in Cells ~~1 – 7, 15~~ and 16 of the Class III Landfill. The ~~cell construction and~~ filling sequence operations will be as follows:

Phasing Sequence 1	<u>Fill Cell 17 to an elevation roughly equivalent to the current elevation of Cell 16 (approximately 137 ft, NGVD). Filling in Cell 17 will start in the east and move to the west for each lift. Lift thickness may vary but will generally be less than 10 to 12 feet. As shown in Operations Plan Minor Modification Permit Plan Set</u>
	<u>Continue filling Cells 1-7, 15 and 16 in 10 – 12-foot lifts to waste elevation of 172'</u>
	<u>Maximum slope is 3H:1V from base grade to waste elevation 167'; 1% to 2% grade from waste elevation 167' to 172</u>
	<u>Sideslope berms and stormwater appurtenances are to be</u>

~~constructed at final closure.~~

~~Construct Cell 17 in accordance with permitted design.~~

Phasing Sequence 2

~~Fill Cells 16 and 17 to an elevation roughly equivalent to the current elevation of Cells 1-7, and 15. Filling will start in the east and move to the west for each lift. Lift thickness may vary but will generally be less than 10 to 12 feet. As shown in Operations Plan Minor Modification Permit Plan Set~~

~~Continue filling Cells 1-7, 15 and 16 in 10 – 12-foot lifts to waste elevation of 172'~~

~~Begin filling Cell 17 with 4 – 6 foot lift north of the temporary stormwater and leachate diversion swale until cell is floored out. Remove temporary swale and fill with 4 – 6 foot lift.~~

~~Continue filling Cell 17 in 10 – 12 foot lifts from base grade to waste elevation 147'. Maximum slope is 3H:1V from base grade to waste elevation 147'.~~

~~A 10-ft wide stormwater bench is to be constructed at elevation 137'.~~

~~Sideslope berms and stormwater appurtenances are to be constructed at final closure.~~

Phasing Sequence 3

~~Fill vertically over the entire permitted footprint. Filling will start with side slopes where feasible. Filling may occur on the top deck simultaneously with side slope filling to allow for select loads to be placed on the side slopes. Filling of the top deck will start on the east and move west for each lift. Lift thickness may vary but will generally be less than 10 to 12 feet. Filling will continue such that the final waste grades (slopes and elevations) shown in Sheets C1.00 and C1.10 of the Permit Plan Set are not exceeded. As shown in Operations Plan Minor Modification Permit Plan Set~~

~~Construct overall landfill vertical expansion to include maximum sideslope of 3H:1V from base grade to waste elevation 137', 187' and 212'; 1% to 2% grade from waste elevation 212' to 217'~~

~~10-ft wide stormwater benches to be constructed at waste elevations 137' and 187'.~~

Phasing Sequence 4

~~As shown in Operations Plan Minor Modification Permit Plan Set~~

~~Construct final closure cover system over Cells 1, 2, 3, 4, 5, 6, 6B, 7, 15, 16 and 17 in accordance with the revised overall landfill vertical expansion closure design.~~

~~Construct sideslope berms (2% min. to 4% max.) and stormwater appurtenances.~~

~~Construct landfill gas vents.~~

~~Lift height includes cover material. Due to the landfill bottom elevation, some lifts may not be a full 10 feet in height.~~

~~As each sequence is active, T~~the following procedures will be followed:

- The access road to the working face will be constructed and graded as necessary
- Waste will be compacted as it is placed. General lift height will be 10 feet and will come within three (3) feet of the final elevation to provide for final cover.
- The working face will remain approximately 100 feet in length
- Avoid channelizing stormwater flows
- Use mulch, grass, and maintain intermediate covers
- Weekly cover of six (6) inches of soil will be placed on the working face
- Intermediate cover of 12 inches of soil will be placed in areas that will not receive waste within 180 days. The cover may be removed immediately prior to placement of new waste
- During excavation, construction and waste disposal a 6-foot berm adjacent to active and filled cells retains stormwater from the filling area and diverts stormwater from the excavation area and pumped to stormwater Pond 3. ~~The remaining portion of the temporary stormwater pond will be filled as the construction of Cell 17 is completed.~~

8.2 Erosion Control

The following engineering controls will be used to minimize erosion at the working face:

- Regrade a maximum of 100 linear feet of the outer edge slopes at a time to 2H:1V. The purpose of this recommendation is that a relatively small area will be subjected to surface erosion at any given time.
- Construct a berm if rainfall is expected along the top of the slope during the regrading to redirect any rainfall runoff away from the working face of the slope. The area along the berm should be graded so as to allow rapid runoff along the top of the slope. Ponding of water near the top of the slope should not be allowed, since seepage through the slope may initiate slope erosion.
- ~~As soon as possible following the construction of the clay layer, begin to fill against the 2H:1V slope with the landfill material.~~
- Avoid channelizing stormwater flows

Vegetative cover will be placed on top of the intermediate cover for erosion control purposes. All or part of the intermediate cover may be removed before placing additional waste or installing final cover

8.3 Life Expectancy.

The capacity and lifespan estimates are provided in Section 3.8.3 of the Engineering Report.

9.0 WASTE COMPACTION AND APPLICATION OF COVER

Waste received will be segregated based on compatibility. Bulky, incompressible items, such as concrete and tree debris, will be separated and stockpiled for future processing. Tree debris is separated from the waste and periodically mulched for on-site uses. The remaining debris is disposed of in designated "cells" using a CAT 826G Compactor, or equivalent to place, spread the waste daily and compact the debris weekly. Initial cover material is planned to be excavated from onsite areas and placed weekly in approximately 6-inch layers on the compacted lifts to control vectors, reduce rain infiltration and provide a more stable working face area. The facility may also use a 50/50 mixture of mulch and soil as cover in accordance with Policy Memo # SWM-05.4 dated April 25, 2001. An intermediate cover of one (1) foot of compacted soil will be applied if final cover or an additional lift is not to be applied within 180 days of cell completion. Cell closure will occur when all permitted cells are filled. For final buildout grade and closure details, see Operations Plan ~~Minor~~ Modification Plan Set provided in Section 4. The Conceptual Closure Plan includes permitted Cells 1-7 and 15, 16, and Cell 17 and vertical expansion.

Cell closure will generally conform to the lines and grades specified in the Landfill Conceptual Closure Plan. The grading plan will conform to the rules and regulation specified in 62-701.600, as well as 62-701.400(7) and 62-701.400(8), Florida Administrative Code. Pesticides when deemed necessary to control rodents, insects and other vectors will be used as specified by the Florida Department of Agriculture and Consumer Services. Uncontrolled and unauthorized scavenging will not be permitted at the landfill site. Controlled recycling may be permitted by the Site Manager responsible for the operation of the landfill facility. Temporary storage of soil fill or recycling materials may occur in the closed cell areas.

10.0 OPERATION OF GAS, LEACHATE AND STORMWATER CONTROLS

10.1 Gas Monitoring and Control

The type of materials to be disposed in the Class III Landfill are not expected to generate significant amounts of methane or other toxic gases since the landfill's design prevents groundwater contact therefore, a passive gas control system is proposed. The Landfill Manager will conduct daily and weekly inspections of the landfill and will check for objectionable odors or gas by driving around the perimeter of the site, record the results, and notify the FDEP and County of any positive detection and immediately take corrective actions. Corrective actions will include placement of additional soil cover, or mulch, or lime containing materials such as crushed concrete that is documented to abate the odors. Quarterly gas monitoring is currently conducted.

Within 30 days of being notified by the Department that objectionable odors per Rule 62-701.200(77), F.A.C. have been confirmed off-site, the Facility will submit to the Department for approval an odor remediation plan. The plan will describe the nature and extent of the problem and

the proposed long-term solution, which will be implemented within 30 days of approval. The plan will include procedures to implement a routine odor monitoring program to determine the timing and extent of objectionable odors and a means of evaluating the effectiveness of the remedy.

The facility only accepts Class III debris for disposal and accepts no putrescible household wastes. Surface water and groundwater contact with the Class III wastes will be prevented by the approved facility design thus preventing possible odor operation. Other best management practices to prevent odors include: 1) closure of each cell as it is completed; 2) weekly soil cover application; and, 3) immediate corrective actions to abate odors.

A system of passive gas vents will be installed to manage landfill gas. The location of the gas vents is shown on the Operations Plan ~~Minor~~ Modification Permit Plan Set provided in Section 4. The construction details of the vents are shown on Figure 3-16, Appendix 3-C of the Engineering Report. The vents will be installed during the final closure and installation of the final cover over each landfill cell.

A system of 16 gas monitoring points will be installed to monitor gas at the site, see Operations Plan ~~Minor~~ Modification Plan Set provided in Section 4. The construction details of a typical gas probe are shown on Figure 3-14, Appendix 3-C of the Engineering Report.

10.1.1 Methane Gas Measurement

In accordance with the requirements of the current FDEP permits, methane gas levels are monitored at each of the active gas monitoring points quarterly, with results submitted to the FDEP. A lower explosive limit (LEL) meter will be used to measure methane levels from each of the gas probes. LEL meters, such as the MSA Model 260 or GEM 500 or equivalent, will be used to conduct this monitoring. These meters are capable of measuring percent volume of methane in air and the percent LEL level of the methane by volume. The meter shall be calibrated in accordance with manufacturer's specifications prior to each methane monitoring event. Attachment 4 of the Operations Plan provided in Appendix 3A of the Engineering Report presents the proposed gas monitoring probe survey form to be used to conduct the quarterly monitoring at the subject site. This form will document at the time of each gas probe reading, air temperature in degrees Fahrenheit, methane levels in percent volume in air and percent LEL. The reporting action level for methane in air will be considered 5 percent by volume in air as measured by the lower explosive limit. The reporting action limit for methane in structures is 25% of the LEL, or 1.25% methane by volume. The results of each quarterly gas probe survey will be submitted to the Department on the presented form within two weeks of each monitoring event. These events are planned to be coordinated with the semi-annual groundwater monitoring at the subject site.

10.1.2 Gas Contingency Plan

The following Contingency Plan will be implemented if any of the measured gas monitoring points methane levels are detected above the 100% LEL of greater than 5 percent methane in air, or if 25% of the LEL or higher is measured in a structure. If this level of methane or greater is detected in any of the probes, the Facility operator will institute measurement of methane in nearby, at, or below grade structures, i.e., stormwater collection points, or any maintenance or office buildings

within 100 feet of the subject gas probe on a weekly basis until these levels go below the 100% LEL at the subject probe. If methane levels measured in any on-site building exceed 25% of the LEL, building windows and/or doors will be opened for ventilation and all personnel evacuated until methane readings are maintained below 25% of the LEL for methane. The monitoring report for any event that detects methane above the LEL will also report methane levels from nearby structures, as indicated above, until the levels go below the methane LEL level or until corrective actions are conducted to reduce methane levels. The FDEP will be notified within seven days of any gas monitoring levels that exceed the reporting action levels.

10.2 Leachate Control

Any leachate that may be produced at the landfill will be controlled with the use of a continuous 3-foot thick clay layer (1×10^{-8} cm/s) on the bottom of the cells. The clay layer beneath each individual cell forms a continuous barrier layer that is graded to direct leachate to the toe drain extending east to west along the northern perimeter of Cell 16 and Cell 17. The toe drain slopes from west to east and terminate in a manhole between Cell 16 and Pond 3. The toe drain "daylights" approximately 3 feet above the bottom of the manhole. A dedicated pump with float control system is used to transfer leachate from the manhole to lined section of the Pond 3.

Leachate will be treated through natural or active aeration in the lined section of the pond and through natural attenuation after discharging once the treated leachate is discharged into the unlined section of the Pond 3. Aeration in the lined section and natural attenuation in the unlined section is as needed the primary leachate treatment and disposal approach. During intervals in which leachate cannot be pumped to the lined section of Pond 3, leachate will be collected and hauled off-site to a permitted wastewater treatment facility for treatment. Leachate that is discovered to be hazardous, will be managed as hazardous waste.

~~As described above, the leachate collection system is designed, constructed, and maintained to prevent clogging of the system. In the unlikely event the IW pond becomes unable to accept leachate, an alternate disposal facility is available for transport and disposal of the leachate.~~

In accordance with Rule 62-701.500(8)(h), F.A.C., a video inspection or high-pressure water cleaning of the leachate and detection system collection pipes, laterals and headers for the landfill will be performed every 5 years as part of the permit renewal process.

The controlled method of screening waste also supplements the leachate control. Because the Applicant privately owns the Enterprise Class III Landfill facility, most of the haulers, waste generators, and sources of waste are known to Angelo's and the scale house attendants. For those haulers that are unfamiliar to the Applicant, the scale house attendants question the haulers more intensely to determine the contents of their loads. The spotters and operators add additional monitoring at the active disposal location. The addition of video surveillance to the monitoring process of incoming wastes helps to identify fires or smoking loads. Combined methods of screening waste is an effective method to reduce any possible threat to public health or the environment.

During intervals in which leachate cannot be pumped to Pond 3, leachate will be collected and

hailed off-site to a permitted wastewater treatment facility for processing and disposal. Leachate collected in the wetwell will be pumped using the wetwell's submersible pump system into a 10,000-gallon, fiberglass storage tank (27' long with 8' diameter). A 2" DIA PVC pipe and hose will tie into the existing 2" diameter SCH 40 PVC pipe leading to Pond 3. The pipes leading to both the storage tank and Pond 3 will be valved to control discharge to either location. The storage tank will be located approximately 20' southeast of the wetwell along the east side of the perimeter road. The level within the storage tank will be checked using a sounding rod by site staff each work day. An optional sight gauge may be installed on the tank in the future to measure liquid level. When the level in the storage tank reaches liquid level of 5.4' (6,000 gallons) a tanker truck will be brought to the site to remove the leachate from the storage tank. The tanker truck operator will use the truck pump to remove the leachate from the tank. Records for leachate hauling including date, company, incoming (empty) weight, outgoing (truck plus leachate), and net leachate hauled will be kept on site at the scalehouse.

10.3 Stormwater Control

The approved Stormwater Management Plan for the landfill consists of berms, swales, and ponds constructed within the 200-foot landscape buffer zone to divert, collect and contain stormwater runoff from the completed site. These stormwater facilities are designated to retain the 100-year, 24-hour storm volume as required by Pasco County and the FDEP. During excavation, construction and waste disposal a 6-foot berm adjacent to active and filled cells retains stormwater from the filling area and diverts stormwater from the excavation area and pumped to stormwater Pond 3. The remaining portion of the temporary stormwater pond will be filled as the construction of Cell 17 is completed. Pond 3 has been permitted through the Industrial Wastewater division of FDEP. Additional details concerning the stormwater management system are provided in Drawing Sheet C3.00 and C3.10.

The site manager will perform weekly inspections of the storm water management system. Any areas in need of maintenance will be repaired within seven days.

11.0 SIGNS

Signs will be posted at the entrance to the Facility site which will list the following information:

- The operating entity;
- Hours of operation;
- No scavenging allowed;
- No hazardous waste accepted;
- List of acceptable and unacceptable waste; and,
- 24-hour phone number of emergency contact.

The scalehouse attendant will direct each driver to the area appropriate to unload wastes. Signs will also be posted to direct trucks to either the borrow pit or the landfill working face.

12.0 DUST ABATEMENT PLAN

The Facility will provide a water tanker to water the landfill access roads if and when dust becomes a problem. This will also be done whenever the County receives complaints about dust or when a dust problem is observed during a County or State inspection.

13.0 DUST, LITTER, AND VECTOR CONTROL PLAN

The nature of the waste to be disposed in the landfill does not typically create litter and vector problems. Daily placement of waste and/or compaction will be the primary means utilized to control litter and vectors. The facility personnel will perform daily inspections of the facility and the access road to assure litter is controlled. As needed, laborers will pick up blowing debris and dispose of it in appropriate containers and/or on site. Temporary fencing to contain litter at the working face of the landfill may be used as needed. These litter controls will also be implemented whenever the County or State receives a complaint from adjacent landowners or a litter problem is observed during an inspection.

If vectors (rodents, insects, and domestic animals) become a nuisance at the Facility, the Operator may obtain the services of a licensed pest management company to review the operations and recommend control measures.

14.0 FIRE PROTECTION AND FIRE FIGHTING FACILITIES

Fires that originate in landfills are primarily extinguished by soil application. Supplemental fire protection will be furnished by the Dade City Fire Department (Station No. 1). The Fire Department will be notified immediately of all landfill fires. An emergency contact list will be posted at the scalehouse with contact phone numbers.

During a fire, incoming trucks will be directed toward another area of the landfill so that a temporary active face can be established. Once the fire is extinguished, appropriate cover will be applied to the waste and operations will continue at the original active face. If the fire is extensive and a temporary active face cannot be established, incoming trucks will be redirected to another landfill.

Onsite fire prevention facilities will include:

- Fire extinguishers mounted in the cab of all heavy equipment and in the office/ scalehouse;
- Telephones to notify personnel of a fire;
- Onsite equipment (dozer) and fill dirt to extinguish fires on working face; and
- Site water truck

Soil for firefighting purposes will be borrowed from the closest unexcavated area of the site to the fire. Details of all firefighting episodes will be recorded in the landfill operating record.

14.1 Hot Loads and Spills

Any hot load (of authorized material) found will be dumped on an area at least 500 feet away from the active working face. The load will immediately be covered with soil if a fire is imminent. Once the fire is extinguished, the load will be pushed and spread using a dozer, allowing for the load to be inspected by a spotter. The waste will not be disposed of until it has cooled completely, and the fire hazard has been mitigated.

In the event of a fire at the working face, waste acceptance will cease until the fire has been completely extinguished and additional cover material compacted in the area of the fire. If the fire is located elsewhere in the landfill, waste acceptance operations may continue at the manager's discretion.

Since liquid disposal is prohibited in a Class III landfill, spills from waste vehicles are not anticipated. In the case of a fuel spill or leak, the contaminated soil will be collected to the extent possible, contained in a drum or roll off container, and taken offsite within thirty (30) days for proper disposal or treatment.

15.0 LANDFILL PERSONNEL

The scalehouse attendant and certified landfill operator will be onsite during all operating hours. In addition, there will be a minimum of one (1) other person (spotter) onsite, for a total of three (3). The state certified landfill operator will be assigned to manage the daily landfill operations. The personnel will be stationed at the landfill ticket gate and active disposal face. Additional personnel will be assigned to the landfill operation as the demand necessitates. Two spotters are generally located at the working face at all times that waste is accepted. However, there are up to eight spotter-trained or in-house trained spotter employees on-site each day and therefore; additional trained employees can be relocated to the working face as necessary to inspect the incoming waste. Certificates for current trained personnel are attached as Attachment 6 to this plan.

At least one (1) spotter will be at the working face at all times the facility is accepting waste. The spotter will direct vehicle traffic around the working face and will direct drivers where to empty their vehicles. The loads will be inspected as described in Section 5.0. If the load is acceptable, the waste will be spread and compacted as necessary. If the load is unacceptable, the spotter will direct the driver to reload the waste into the vehicle, if possible. If the driver is unable to reload the material, on-site personnel will reload the material for the driver using onsite equipment. The spotter will also discourage scavenging by the public.

The equipment operator spreading waste at the working face may also act as a spotter in accordance with the following:

1. The heavy equipment operator must be trained as a spotter;
2. When unauthorized waste is discovered, the heavy equipment 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;

3. Each load of waste must be visually inspected for unauthorized waste prior to being compacted or loaded into a transfer vehicle.

A typical work schedule is as follows:

Day	Operating Hours	Scalehouse Attendant	Certified Operator	Spotter(s)	Equipment Operator*
M-F	7 am – 6 <u>5</u> pm	1 (7 am – 6 <u>5</u> pm)	1 (7 am – 6 <u>5</u> pm)	Min. 1 (7 am – 6 <u>5</u> pm) For 2 or more (7 am – 4 pm), (12 pm – 6 <u>5</u> pm)	Min. 1 (7 am – 6 <u>5</u> pm)
S	7 am – <u>12</u> pm	1 (7 am – 3 <u>pm1</u> pm)	1 (7 am – 3 <u>1</u> pm)		Min. 1 (7 am – 2 <u>12</u> pm)

* - Equipment Operator may also serve as a spotter

15.1 Training Plan

The Facility will implement an employee training plan to properly train their landfill operators and spotters to operate the landfill in accordance with this Operations Plan, state and local regulations, and accepted disposal practices and to properly manage any hazardous or prohibited materials which are received at the landfill.

A trained operator will be at the site during all times that the landfill receives waste. All facility operators will be trained at an approved FDEP training course. Each operator will submit proof of training and documentation to the FDEP upon receipt of their certificates.

Landfill operators must have at least one year of work experience in landfill operation and a high school diploma; or have at least two (2) years' experience at a Class I, II, or III landfill. Each operator will complete at least 24 hours of initial training in an FDEP-approved training course, and will pass an examination as part of that training. Sixteen (16) hours of continuing training will be completed within three (3) years of each operator's initial training from an approved course documented by the form in Attachment 3. A list of FDEP approved training courses for operators and spotters are included in Attachment 5.

The Facility spotters will complete an initial eight (8) hour FDEP-approved course and four (4) hours of continuing training every three (3) years. Records documenting each employee's training course completion and schedule will be maintained and kept at the landfill office at all times.

Interim operators must become trained operators within one year of employment as an interim operator and interim spotters must become trained spotters within 3 months of employment as an interim spotter.

16.0 COMMUNICATIONS FACILITIES

The landfill scalehouse will have both telephone and facsimile facilities. In addition, all landfill operating areas (gate house, working face etc.) will have radio communication or cell phones with the base station at the gate house.

17.0 EQUIPMENT INVENTORY

Equipment currently planned for use at the landfill site includes:

- A. Two compactors [Cat 826 (2)], two loaders (Cat 950, Cat 980), two dozers (Cat D5, Cat D8), four excavators [John Deere 450 (2), Komatsu PC1100, Komatsu PC300], and two articulated dump trucks (Volvo) D-8 Caterpillar bulldozer, CAT 826 G Compactor; two 2.5 eud loaders, water truck, 590 John Deer backhoe, or equivalent are sufficient for adequate operation of the facility. A wood chipper/grinding machine (Hogzilla), or equivalent, will be moved to the site periodically (approximately once every six months) to process wood wastes as needed. Additional equipment, such as a grader or water truck may be rented as needed.
- B. Arrangements will be made to provide alternate equipment within 24 hours following an equipment breakdown.

Equipment rental companies that may be used to obtain reserve equipment include the following:

Ring Power - Brooksville, Florida
Contact: 352-796-4978

Flagler Equipment - Tampa, Florida
Contact: 813-630-0077

- C. There will be safety devices present on equipment to shield and protect the operators from potential hazards during operation.

17.1 Equipment Maintenance

The Facility will conduct routine heavy equipment and vehicle maintenance onsite. Maintenance includes fueling of heavy equipment with diesel fuel, lubrication, oil changes and, antifreeze changes. Tire repairs will be handled by an outside service company.

A permanent equipment fueling facility will be installed and registered in accordance with F.A.C. 62-761. Pasco County will be copied on the registration.

Oil and antifreeze changes will be contained by large drip pans to catch the waste oils. These wastes will then be transferred either to a 250-gallon waste oil skid tank or to a 55-gallon drum for waste antifreeze, which will be located in a containment area. The containment area is a covered metal storage shed. Enterprise RDF plans to enter into contracts with licensed recyclers to periodically pick up the waste oil and antifreeze. Records of these pickups will be maintained by Enterprise

RDF. All virgin lubricants will be stored undercover within the gate house building or suitable enclosure.

18.0 SAFETY DEVICES

All operating equipment which will be utilized at the landfill site will be fitted with rollover protection and fire extinguishers. All landfill personnel will be required to wear safety helmets, safety shoes, eye protective glasses, gloves, and safety vests. The onsite heavy equipment will meet OSHA safety requirements. First aid equipment will be kept in the office trailer and in the operating equipment.

19.0 RECORDS, PERMITS AND REPORTS

A copy of any Florida Department of Environmental Protection (FDEP) and Pasco County approved engineering drawings, permits and supporting information, and topographic survey will be kept at the facility for reference and inspections. Permits will be posted at site per ordinance. A waste type and quantity intake (in tons) log will be kept daily, compiled monthly and a report will be submitted annually to Pasco County and the FDEP.

An annual estimate of the remaining life and capacity in cubic yards of the landfill will be reported annually to the FDEP.

19.1 Water Quality Monitoring

The Facility will conduct the required initial and semi-annual groundwater monitoring at the sites' monitoring wells as described in the Facility's Groundwater Monitoring Plan. Semi-annual reports of this monitoring will be submitted to Pasco County and FDEP in accordance with this plan. Quarterly monitoring will also be conducted and reported at specific wells per Pasco County conditions.

19.2 Landfill Operating Records

The operating record for the landfill will document daily as a minimum the following activities:

- Self-inspections of landfill conditions, safety equipment and unacceptable waste received, any odor detected;
- Records used to develop permit applications;
- Change in construction, operation or closure permits and supporting designs;
- Water quality sampling events, analytical reports, well installation or repair;
- Employee training;
- Random load checks;

- Facility construction, major maintenance, or demolition;
- Other activities that significantly affect facility operations.

Self-inspections of the landfill conditions are conducted daily, and more extensive inspections are included weekly. Daily inspections include general inspection of site access, site security, and conditions of intermediate cover. Weekly inspections include more detailed inspections of the conditions of the surface water and stormwater management systems and groundwater monitoring wells.

The Operating Record will be kept at the landfill and be accessible to the landfill operators to maintain and for FDEP or Pasco County inspection at reasonable times.

Operational records will be maintained for the design life of the landfill, with the exception of weigh tickets which will be kept at least 5 years. Water quality monitoring information, maintenance records, and permit reports will be maintained for a minimum of 10 years. Background water quality records will be maintained for the design period of the landfill.

20.0 EROSION CONTROL

The site's inherent design as an excavation pit will prevent stormwater from leaving the property. Stabilization by seeding and mulching of the final fill areas will occur as the fill operations progress from cell to cell.

21.0 FINAL GRADE PLAN

Interim grades of the cells are shown on the plans (Operations Plan ~~Minor~~ Modification Plan Set in Section 4) and in the cross-sections. Permitted mining activities will continue in accordance with the site's Class I mining permit. The final elevations after construction of future cells is planned to reclaim excavated areas back to the grade which existed prior to the site being opened as a mine with allowance for positive drainage. The Landfill Conceptual Closure Plan is provided in the Operations Plan ~~Minor~~ Modification Permit Plan Set.

22.0 CLOSURE AND LONG-TERM CARE

The site's Reclamation and Closure Plan details the procedures to properly close and maintain the landfill during the 30-year post-closure period. A Closure Report will be prepared for the landfill that details the site-specific limitations for land use based on geotechnical stability (settlement), potential gas migration, and site access. Long-term maintenance of erosion controls, storm water controls and monitoring devices is discussed in the Closure Plan (Section 7).

23.0 CERTIFICATION

Laboratory testing and observation of cell floor conditions during cell construction completion will consist of the following:

- In-place density testing for each 12-inch thick soil lift, based on laboratory proctor test results for the construction material, will be recorded by a properly trained technician. These tests will be conducted in the location of each permeability test.
- Thickness testing of each lift will be recorded at a minimum frequency of two tests per acre, per lift.
- Confirmation hydraulic conductivity testing of Shelby tube or drive cylinder samples of the compacted cell floor material will be performed at a minimum frequency of one test per lift, per acre.
- Observance for unstable areas such as limestone, sinkholes and soft ground will be performed for each cell.

If the test data from a cell floor section does not meet the requirements of the anticipated conditions of the hydrogeological and geotechnical reports and the requirements of the facility construction permit, additional random samples may be tested from that cell section. If the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable. If not, that cell will be reworked or reconstructed so that it will meet these requirements. Field test methods, including rejection criteria and corrective measures, shall coincide with 62-701.400(8).

Upon completion of construction of any cell (or cell increment) within the disposal facility, the Applicant will provide the FDEP with the necessary reports, documents, and form 62-701.900(2), F.A.C. demonstrating that the approved construction is complete and in accordance with the submitted plans. The operator will provide the completed form to the FDEP in accordance with Rule 62-701.320(9) a., F.A.C., along with the quality assurance test results described above.

24.0 HISTORY OF ENFORCEMENT ACTION

In 2000, OGC Case No. 00-0009 was opened against the applicant for the Frontier Recycling facility (now Angelo's Recycling Facility) in Largo, Florida. A model consent order was used to resolve the issues of the case. The DEP's database did not include information regarding the subject of the enforcement.

In 2004, OGC Case No. 04-0887 (solid waste) and No. 04-0426 (stormwater) were opened against the applicant for Angelo's Recycling facility in Largo, Florida. ARM requested a minor permit modification to resolve the solid waste enforcement case. Formal enforcement was not taken to resolve the stormwater case. Instead, it was handled through submittal of a new permit application.

In 2006, OGC Case No. 06-0783 was opened against the applicant for the Enterprise Class III Landfill and Recycling Facility in Pasco County, Florida. ARM performed the corrective actions that were required to bring the facility into compliance and the assessed civil penalties were paid.

In 2007, OGC Case No. 07-1985 was opened against the applicant for the Angelo's C&D Recycling Waste Processing Facility in Apopka, Florida. ARM performed the corrective actions that were required to bring the facility into compliance and the assessed civil penalties were paid.

In 2007, Warning Letter #WL07-0019SW51SWD was issued to Angelo's Aggregate Materials, Ltd. for the Enterprise Class III Landfill. The Warning Letter was settled June 5, 2008 for total fines of \$18,397. In the "Proposed Settlement of Warning Letter WL07-0019SW51SWD", the Department acknowledged that Angelo's would not be considered "irresponsible" under FDEP Rule 62-701.320, FAC, as a result of the enforcement action.

In 2007, Warning Letter # WL07-0008SW52SWD was issued to Angelo's Aggregate Materials, Ltd. for the Recycling Waste Processing Facility in Largo, FL. The Warning Letter was settled April, 2009 for total fines of \$24,986. In the "Proposed Settlement of Amended Warning Letter WL07-0008SW52SWD", the Department acknowledged that Angelo's would not be considered "irresponsible" under FDEP Rule 62-701.320, FAC, as a result of the enforcement action.

ATTACHMENT 1
FACILITY ENTRANCE SIGN

ATTACHMENT 2
RANDOM LOAD INSPECTION FORM

ATTACHMENT 3
FACILITY TRAINING LOG

ATTACHMENT 4
GAS MONITORING SURVEY FORM

ATTACHMENT 5
LIST OF APPROVED COURSES

ATTACHMENT 6
TRAINING CERTIFICATES

ATTACHMENT 7
SOURCE-SEPARATED ORGANICS PROCESSING
FACILITY REGISTRATION

ATTACHMENT A
PUMP SIZING CALCULATIONS

INNOVATIVE WASTE CONSULTING SERVICES, LLC		
3720 NW 43rd ST., Suite 103, Gainesville, FL 32606, USA		
PROJECT: Angelo's Aeration Pond Design		Leachate Pump Sizing
DESIGNED BY: A. Kanneganti	CHECKED BY: S.Singh	DATE: 09/09/2020

OBJECTIVE

Estimate the size of the pump to be installed in the wetwell for leachate conveyance from wetwell to aeration pond.

METHODOLOGY

In order to select an appropriate pump to handle the leachate generated from the landfill, the following two parameters are required:

1. Leachate Flow Rate

The HELP model-estimated peak daily leachate collection rate of the site is approximately 6,900 gpd (L&A, 2016). For a conservative sizing, it was assumed that the selected pump should be able to discharge at least 6,900 gallons of leachate in two hours.

2. Hydraulic Head loss

Total hydraulic head loss is the sum of head loss due to changes in elevation and major and minor frictional losses. Major frictional head loss primarily occurs due to the frictional forces between the pipe wall and the fluid, while the minor head losses are caused by valves, bends, tees, and various other pipe fittings. Major head loss can be calculated using Darcy-Weisbach Equation 1.

$$H_{L \text{ major}} = f \frac{Lv^2}{2gd} \quad \text{Equation 1}$$

where,

$H_{L \text{ major}}$ = major frictional head loss (ft);
 f = frictional factor (-);
 L = length of pipe (ft);
 v = flow velocity (ft/s);
 d = pipe diameter (ft);
 g = acceleration of gravity (ft/s²).

The flow velocity was calculated using Equation 3:

$$v = \frac{Q_{\text{peak}}}{A} \quad \text{Equation 2}$$

where,

Q_{peak} = required pumping rate based on the peak daily flow rate estimated using the HELP model (ft³/s);
 A = cross-sectional area of the pipe (ft²).

The friction factor was iteratively calculated using the Colebrook White equation (Equation 4):

$$\frac{1}{\sqrt{f}} = -2.0 \log \left(\frac{\epsilon/d}{3.7} + \frac{2.51}{Re \sqrt{f}} \right) \quad \text{Equation 3}$$

where,

f = friction factor (-);
 Re = Reynolds Number (-);
 ϵ = pipe roughness (ft);
 d = pipe diameter (ft).

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The Reynolds number used in Equation 4 was calculated using Equation 5.

$$Re = \frac{3160 \times Q_{peak}}{k \times d} \quad \text{Equation 4}$$

where,

- Re = Reynolds Number (-);
 Q_{peak} = required pumping rate based on the peak daily flow rate estimated using the HELP model (gallons per minutes)
d = pipe diameter (in);
k = kinematic viscosity of fluid (centistokes).

The minor head loss can be calculated using Equation 5; however, in the absence of information on all individual devices (e.g. valves, bends, tees) and fittings to be used in the pumping system, the minor frictional head loss ($H_{L \text{ minor}}$) was assumed as 10% of $H_{L \text{ major}}$.

$$H_{L \text{ minor}} = K_L \frac{v^2}{2g} \quad \text{Equation 5}$$

where,

- $H_{L \text{ minor}}$ = minor frictional head loss (ft);
 K_L = minor loss coefficient (-).

The total head loss was estimated, as shown in Equation 6:

$$H_{total} = H_{major} + H_{minor} + H_{elevation} \quad \text{Equation 6}$$

The selected pump shall be able pump HELP Model estimated maximum daily leachate flow rate in two hours at the total head loss estimated using equation 6.

CALCULATIONS

Inputs

Parameter	Unit	Value	Description	Reference
L	ft	1,150	-	As designed
Q_{peak}	ft ³ /s	0.128	The flow rate was estimated based on the HELP model estimated peak daily leachate collection rate	L&A (2016)
	Gallons per minute	57.5		
d	ft	0.25	Pipe inside diameter	3" SDR 17, ISCO (2018)
A	ft ²	0.049	Pipe cross-sectional area	
g	ft/s ²	32.2		
ε	ft	0.000005	Pipe roughness for smooth polyethylene pipe	PPI (n.d.)
μ	centistokes	0.9	Dynamic viscosity of water at 25°C	PPI (n.d.)
$H_{elevation}$	ft	21		As designed

Outputs

INNOVATIVE WASTE CONSULTING SERVICES, LLC		
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PROJECT: Angelo's Aeration Pond Design		Leachate Pump Sizing
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Parameter	Unit	Value	Equation
Re		67,296.3	Equation 4
f		0.0197	Equation 3 (iteratively calculated)
H _{Lmajor}	ft	9.56	Equation 1
H _{Lminor}	ft	0.956	10% of H _{Lmajor}
H _{total}	ft	31.52	Equation 6

CONCLUSION

A submersible wastewater pump that is capable of pumping a minimum of 57.5 gpm at a head of 31.52 feet will be used in the wetwell to pump leachate to the aeration pond. Liberty submersible pump (100-series 1 HP), as shown in Appendix A, or an equivalent will be used for pumping leachate from the wetwell to the aeration trench. The current wetwell pump is rated to pump at a higher head than estimated above.

REFERENCES

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- PPI (n.d.). Chapter 6-Design of PE Piping System of Handbook of PE Pipe, Published by Plastics Pipe Institute. <https://plasticpipe.org/pdf/chapter06.pdf>. Accessed on 9/3/2020.
- L&A (2016). Response to Third Request for Additional Information. Prepared by Locklear and Associates Inc. and submitted to the Florida Department of Environmental Protection, August 2019.

APPENDIX-A

INNOVATIVE WASTE CONSULTING SERVICES, LLC

3720 NW 43rd ST., Suite 103, Gainesville, FL 32606, USA

PROJECT: Angelo's Aeration Pond Design

Leachate Pump Sizing

DESIGNED BY: A. Kanneganti

CHECKED BY: S.Singh

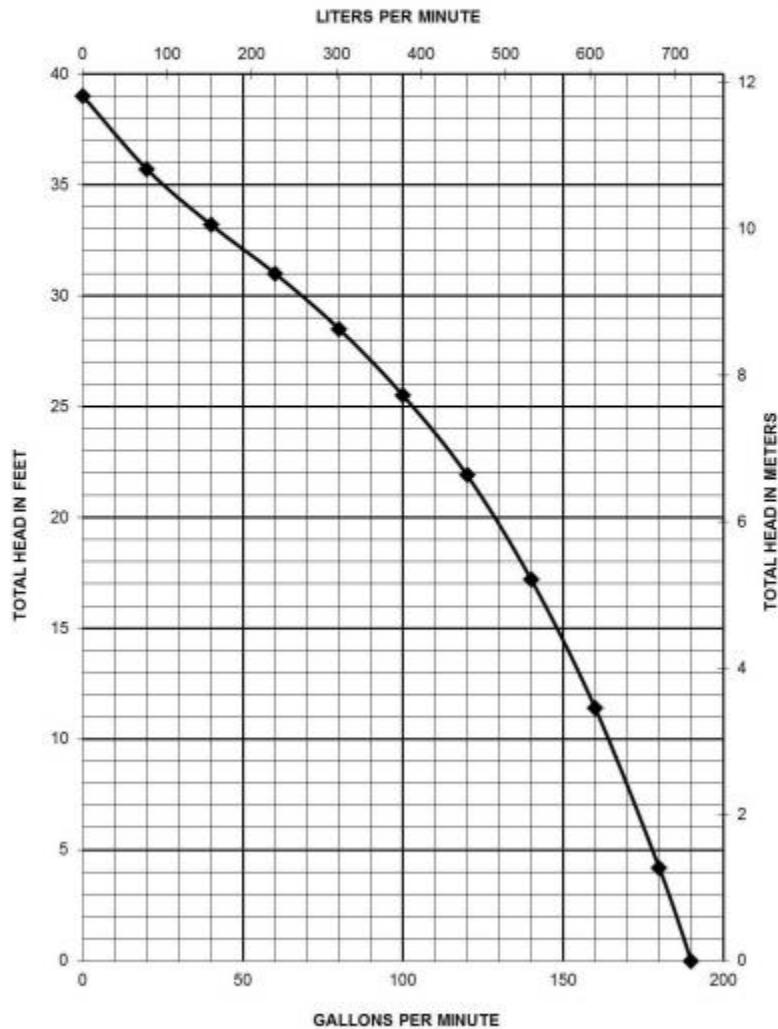
DATE: 09/09/2020

Liberty Pumps®

Pump Specifications

LE100-Series

1HP Submersible Sewage Pump



LE100-P1 R8/5/2014

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Liberty Pumps®

ATTACHMENT B
SITE LAYOUT

11/4/2020 1:26:19 PM

A	NOVEMBER 2020	REVISION LOCATION OF THE NEW LEACHATE POND AND SUPPLY WELL	AK	PJ
LTR	DATE	REVISIONS	BY	APPRD.

DESIGNED AK, SS

DRAWN AK

CHECKED PJ



INNOVATIVE WASTE
CONSULTING SERVICES, LLC
3720 NW 43rd ST. SUITE 103
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ANGELO'S
AGGREGATE
MATERIALS, LTD.
855 28th STREET SOUTH,
PETERSBURG, FL 32606-6091
PHONE: (727) 581-1544
FAX: (727) 586-5676

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DIGITALLY SIGNED
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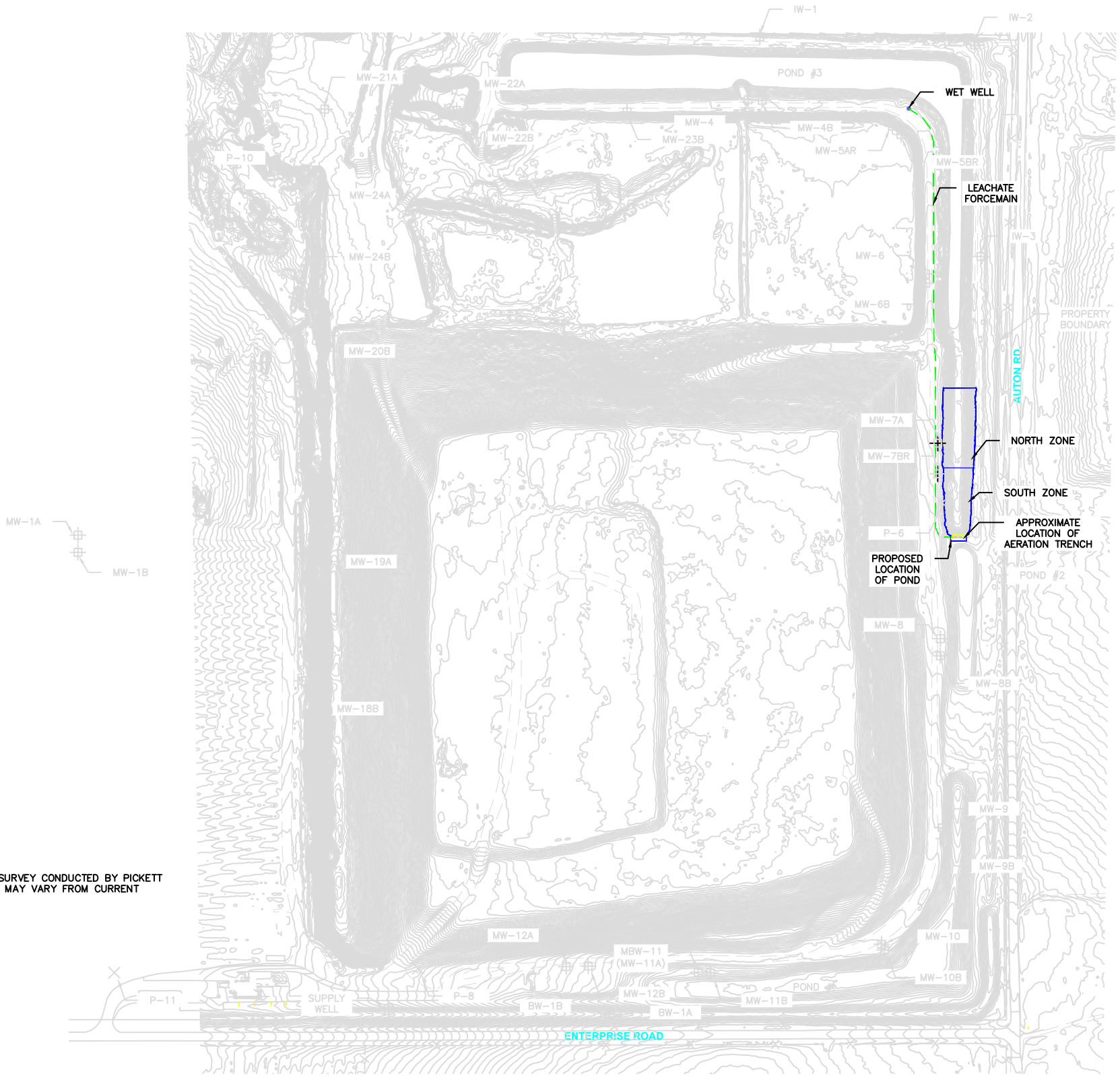
LEACHATE AERATION
POND DESIGN

SITE LAYOUT

DATE: SEPTEMBER 2020

SCALE: AS SHOWN

DWG No: 1 OF 1



LEGEND	
	GROUNDWATER MONITORING WELL
	PIEZOMETRIC WELL
	SUPPLY WELL

