CDM Smith
8381 Dix Ellis Trail, Suite 400
Jacksonville, Florida 32256
tel: 904-731-7109
fax: 904-519-7090

September 10, 2015

Mr. Michael Bogin
Florida Department of Environmental Protection
Northeast District
Waste & Air Resource Management
8800 Baymeadows Way West, Suite 100
Jacksonville, FL 32256

Subject: City of Jacksonville
Trail Ridge Landfill 2015 Financial Assurance
Facility ID 33628

Dear Mr. Bogin:

On behalf of the City of Jacksonville and Waste Management Inc. (WMI), CDM Smith is pleased to submit the enclosed financial assurances information for the City of Jacksonville Trail Ridge Class I Landfill for 2015. Please find enclosed the following documents.

- 2015 Trail Ridge Landfill Phases 1-5 and Phase 6 Closure and Long-Term Care Cost Estimate
- FDEP form 62-701.900 (28), Closure Cost Estimating Form for Solid Waste Facilities
- Certified unit costs provided by Southeast Environmental Contracting, INC.

Please contact me directly at 904-527-6726 or SterlingLM@cdmsmith.com if you require any additional information.

Sincerely,

Lisa M Sterling

Lisa M. Sterling, P.E.
Project Manager
CDM Smith Inc.

cc: Greg Mathes, WMI (w/enclosure)
Lee Alford, COJ (w/enclosure)
Patrick Victor, (w/o enclosure)
FILE

Trail Ridge Landfill Phases 1 – 5 and Phase 6 Closure and Long-term Care Cost Estimate

1.0 General Information

The City is the owner of the TRLF, a Class I Landfill that is located at 5110 US Highway 301,Duval County, Florida. This facility currently operates under FDEP Solid Waste Operations Permit No. 0013493-017-SO (issued May 11, 2012). The facility has two distinct areas, the older Phases 1 through 5 that were constructed in 1990 and are still in operation today, and the newer Phases 6 through 14 that were permitted in 2014. Phases 1-5 consist of approximately 144 acres of lined landfill and access road, stormwater conveyances, buffer, scale house and maintenance shed. Of the 144 acres of lined landfill, 46.3 acres have been closed and certified. An additional 26.3 acres of Phase 4 are in the process of being closed but at the time of this report had not completed closeout certification activities. Of the newly permitted Phases 6-14, only Phase 6 is currently proposed for construction and is scheduled to be completed by March 2016. Phase 6 will include 30.5 acres of lined landfill, stormwater conveyance, and maintenance area. The entire facility is enclosed by chain-link and barbed-wire fence with a single point of entry from US Highway 301 on the east side of the site.

The proposed closure area of the site is 128.2 acres and the entire area of the landfill considered for long-term care is about 174.5 acres. The closure cost estimate is based on the drawings submitted with The Phase 6 through 14 solid waste permit application (CDM Smith 2014). These drawings include proposed details such as typical final cover, typical stormwater let down pipe, and typical side slope cross sections. The Florida Department of Environmental Protection (FDEP) Permit Number for the expansion and aforementioned drawings is DEP File No. 0013493-025-SO-01 and 0013493-036-SC-01.

The expected life of Phases 1through 6 at Trail Ridge Landfill is approximately 8.5 years.

2.0 Type of Financial Assurance Document

The completed Form 62-701.900(28) is included as **Attachment 1**.

3.0 Estimated Closing Cost

The total closure area is 128.2 acres. This includes 97.7 acres left to close in the existing Phases 1-5 and 30.5 acres for the new Phase 6 cell. It is assumed that all work will be completed by a third party. The unit costs used in this financial assurances estimate were obtained using August 2015 costs from Southeast Environmental Contracting, Inc. to represent the fair market values of material, equipment and labor currently. A copy of this unit cost letter is included in **Attachment 2**.

3.1 Proposed Monitoring Wells

No monitoring wells are proposed for closure.

3.2 Slope and Fill (Bedding Layer between Waste and Barrier Layer)

The 2015 unit cost estimate for placement and spreading was $2.00 per cubic yard (cy). (Attachment 2). The bedding layer has a thickness of 12 inches and consists of common fill material. The volume of fill for Phases 6 and Phases 1-5, is an estimated 207,000 cy for the entire 128.5 acres of closure.

The total cost for slope and fill is estimated to be $414,000.

3.3 Cover Material (Barrier Layer)

The Phases 6 final cover detail, Details B and C on Sheet CD-8 of the solid waste permit application (CDM Smith 2014), shows that the final closure barrier layer on the side slopes shall be a 1-foot minimum compacted clay (at K = 6.67 x 10-5 cm/sec). The area of clay is estimated to be 86.7 (68.2 acres Phases 1-5 + 18.5 acres Phase 6).

The final closure barrier for the landfill top shall be 40 mil textured HDPE along with geonet and 1 foot of protective sand. The area of geomembrane, sand, and geonet is estimated to be 41.5 (29.5 acres Phases 1-5 + 12 acres Phases 6).

Total estimated quantities are outlined below:

- Clay: 86.7 acres x 1 ft = 1,800,000 ft^3 (140,000 cy)
- Geomembrane: 41.5 acres (201,000 sy)
- Geocomposite: 41.5 acres (201,000 sy)
- Sand: 41.5 acres x 1 ft = 1,810,000 ft^3 (67,000 cy)

The August 2015 unit rate cost for clay is $29.50 per cy (Attachment 2). The cost for the 140,000 cy of clay is estimated to be $4,130,000.

The August 2015 unit rate cost for 40 mil HDPE Liner was $6.10 per sy (Attachment 2). The cost for the 201,000 sy of geomembrane is estimated to be $1,226,100.

The August 2015 unit rate cost for geonet was $5.75 per sy (Attachment 2). The cost for the 201,000 sy of geonet is estimated to be $1,155,750.

The August 2015 unit rate cost for sand was $22.00 (Attachment 2). The cost for the 67,000 cy of sand is estimated to be $1,474,000.

The total estimated cost of cover material is $7,895,850.

3.4 Top Soil Cover

The August 2015 unit cost estimate for placement and spreading was $16.10 per cubic yard (cy.) (Attachment 2). The Phases 6 final cover detail, Details B and C on Sheet CD-8 (CDM Smith 2014), shows the 24-inch top soil layer for the sideslopes and 12-inch top soil layer for the top slope. The material for the protective soil layer is assumed to be obtained from off-site sources. The estimated cost includes the cost of offsite material, delivery and spreading. The volume of fill was estimated to be 280,000 cy for 86.7 acres of side slope areas and 67,000 cy of material for top 41.5 acres of slope area, for an estimated 347,000 cy for the entire 128.2 acres of closure.

Total estimated cost for top soil cover is $5,586,700.

3.5 Vegetative Layer

The August 2015 unit cost estimate for sodding was $2.80 per cubic yard (cy). (Attachment 2). The upper vegetative layer shall be sodded along the top and side slopes. The area to be sodded is 128.2 acres (620,000 sy).

Total cost for vegetative layer is estimated to be $1,736,000.

3.6 Stormwater Control System

The stormwater control system will divert rainfall off the closed landfill area to the existing perimeter swale system. The stormwater control system includes swales, terrace underdrains, and letdown structures.

The August 2015 unit cost estimate for HDPE piping used for letdown structures was $119.50 per linear foot (lf) (Attachment 2). The stormwater letdown piping begins as 24-inch corrugated HDPE pipe and reduces to 18-inch corrugated HDPE pipe draining from the top of the proposed build-out up to the terrace (details on Sheet CD-7). There are a total of 4 letdown structures within the Phases 6 expansion area. Each letdown structure associated with Phase 6 is estimated to be 650 ft in length. Combined with the 7,000 lf of letdown structures in Phases 1-5, the total estimated length of stormwater letdown drains is 10,000 ft.

Total cost for letdown structure piping is estimated to be $1,195,000.

The August 2015 unit cost estimate for terrace drains was $8,436 each (ea) (Attachment 2). Typical terrace drains are shown on Detail E on Sheet CD-7. There are a total of 4 letdown structures within the Phases 6 expansion area. Each letdown structure crosses 4 terraces (at elevations 260 ft, 220 ft, 180 ft, and 140 ft) as shown on sheet C-31 for a total of 16 letdown structures in Phases 6. Combined with the 89 terrace drains in Phases 1-5, the total number of terrace drains is estimated to be 105.

Total cost for terrace drains is estimated to be $885,780.

The August 2015 unit cost estimate for underdrains on intermediate terraces $24.00 per lf (Attachment 2). Typical underdrains are shown on Detail C on Sheet CD-7. The drain consists of 6-inch perforated HDPE pipe wrapped in a filter sock. The perimeter of each terrace was calculated to estimate the length of underdrain along intermediate terraces. Combined with the 48,400 lf of underdrain in Phases 1-5, the total length of underdrain is estimated to be 51,000 lf.

Total cost for terrace drains is estimated to be $1,224,000.

The total cost of storm water control system for the entire closure area is estimated to be $3,304,780.

3.7 Passive Gas Control – Not Used

3.8 Active Gas Extraction Control

The LFG system consisting of horizontal and vertical gas wells is shown on Sheet C-34 and details are shown on Sheet CD-12.

Condensate from the LFG collection system will be collected in local condensate sumps throughout the landfill and conveyed via pneumatic pump to the existing leachate collection system. The estimated cost for each condensate collection sump is $16,220(Line 1, Active Gas System, Attachment 2). Including the 5 condensate sumps remaining in Phases 1-5 and the 3 sumps anticipated for Phase 6, the total number of condensate sumps for full build-out is estimated to be 8. A 10% safety factor will be applied to get a conservative amount of 9 condensate sumps. The cost for 9 condensate sumps is $145,980.

The Trail Ridge Landfill currently uses one flare and one back-up flare in cases where LFG is not utilized by Trail Ridge Energy, LLC. The Phase 6 gas production fits within the existing capacity of the TRLF flare system.

Horizontal wells will be installed at 40 ft and 90 ft of waste. Six-inch horizontal well collection laterals will be installed as shown on sheet CD-12. Piping cost is estimated to be $48.60 per ft for pipes 6 to 10 inches in diameter (Line 3, Active Gas System, Attachment 2) inclusive of fittings. The total length for Phase 6 is estimated to be 25,400 ft based on linear feet of first row collectors, second row collectors, and lateral connections. Including the 5,200 lf in Phase 1-5, the cost for 30,600 lf of 6- to 10-inch piping is estimated to be $1,487,160.

Vertical and horizontal wells will be manifolded to deliver LFG to onsite treatment as shown on Sheet C-34. Piping cost is estimated to be $74.40 per ft for pipes 12 to 18 inches in diameter (Line 4, Active Gas System, Attachment 2) inclusive of fittings. Including the 5,200 lf in Phase 1-5, the total length is estimated to be 15,000 ft based on linear feet of manifold piping. The cost for 12- to 18-inch piping is estimated to be $1,116,000.

The estimated cost, per the quote in Attachment 2, is $125 per lf of vertical well drilling (Line 5, Active Gas System, Attachment 2). Including the 7,280 lf of vertical wells remaining for Phases 1-5 and the 5,040 lf anticipated for Phase 6, the total vertical well drilling for the site is 12,300 lf. The cost for 36 vertical LFG wells at 140 ft depth is $1,537,500.

Control valves will be installed throughout the LFG system to separate gas collection zones and isolate specific collection areas. The estimated costs for 6- to 10-inch control valves and 12- to 18-inch control valves are $4,632 and $7,440 per valve respectively (Attachment 2). No additional 6- to 10-inch valves are estimated for Phases 6. Including the 26 valves estimated for Phases 1-5, a total of 32, 12- to 18-inch control valves is projected for full landfill build-out. The cost for 26, 6- to 10 inch control valves is $120,432. The cost for 32, 12- to 18-inch control valves is $238,080.

Each vertical well will be equipped with a well head assembly as shown on Sheet CD-12. The estimated cost for each well head assembly is $852 (Line 8, Active Gas System, Attachment 2). Based on the 36 vertical wells previously estimated, the total number of well heads anticipated is 88 for Phases 1-5 and Phase 6. The cost for well head assemblies will be $74,976.

The total cost of the active gas system is estimated to be $4,720,128.

3.9 Security System

The entire TRLF is enclosed by a chain link fence with gated entrances to the Facility. No additional fencing or gates are estimated.

3.10 Engineering

The engineering cost associated with closure of each acre of the TRLF is estimated to be $5,200/acre based on the lump sum estimates for Phases 1-5.

This is estimated as:

- Closure Plan Report at a Lump Sum cost of $89,150.00.
- Final Survey at a Lump Sum cost of $76,420.00.
- Certification of Closure at a Lump Sum cost of $25,500.00.
- Construction Drawings at a Lump Sum cost of $318,400.00.
- Total lump sum closure cost for 97.7 acres is $509,470.00.

Phase 6 closure will be part of the site's close-as-you-go approach; therefore, total expected closure costs for 128.2 acres is estimated to be $509,470.

3.11 Professional Services

Professional services include on site quality assurance and quality control, on-site RPR, laboratory testing, and miscellaneous administrative services associated with construction management. Recent closure costs for Closure Phases 3 and 4 were used as a basis for estimating on-site engineering costs. The administrative costs are estimated as $1,388,500A breakdown of all the hours and rates is provided on the Financial Assurance Cost Estimate Form in Attachment 1.

3.12 Contingency

The total for items 1 through 11 above is estimated to be $25,645,428. A contingency of 15% is assumed and is$3,846,814, raising the Closing Cost Sub-Total to $29,492,242.

3.13 Site-Specific Costs

Site-specific costs associated with TRLF are below and shown in Attachment 1. Unit costs for the waste tire facility and special waste are based on costs provided by Waste Management Inc Operations.

- Mobilization is estimated to be $744,853 lump sum.
- Waste Tire Facility (1600 tons @ $100/ton) is estimated to be $160,000.
- Cost of handling special waste is estimated to be $63,700.00.
- Erosion control is estimated to be 1% of construction cost, or $298,000.
- Bonds are estimated to be 1.2% of construction cost, or $357,600.

The total for the site-specific costs is estimated to be $$1,624,023.

The total Closing Cost for the 128.2 acres at TRLF is estimated to be $31,116,265.71.

4.0 Annual Cost for Long-Term Care

This portion of the form is to calculate the annual long-term care for the entire 174.5 acres of Phases 1 through 6 at TRLF for the long-term care period of 30 years. The actual number of monitoring wells and/or sampling points and the sampling frequencies are consistent with the currently available approved water quality and gas monitoring plans for the site. The sampling and analysis procedures used by the laboratory, including sampling equipment, decontamination, field measurements, and sample shipment, shall be performed in accordance with Chapter 62-160, FAC. The laboratory is registered with the Florida Department of Health and utilizes the procedures and methods approved by the Florida Department of Health.

4.1 Groundwater Monitoring

Phase 6 will install additional groundwater detection wells and groundwater background wells. With the expansion, other groundwater monitoring wells established for Phases 1 through 5 will be abandoned. Consequently, the total number of groundwater monitoring wells will be 6 background wells, 6 detection wells, and 21 compliance wells (2 temporary side gradient detection wells will be installed during operation and construction but will not be present for long-term care).

Semi-annual sampling will be conducted 2 times per year for the 21 shallow background, detection, and compliance wells. Five intermediate background and detection wells will be sampled semi-annually for a reduced set of field parameters. A semi-annual monitoring report will be developed for each sampling event. An estimated total unit price for semi-annual monitoring of each well (includes sampling, lab analysis and reporting) of $1,500 per sampling event was provided by Waste Management Inc. Total annual cost for semi-annual sampling, monitoring and reporting for 21 wells is $63,000.

During the active life of the facility, a technical report will be prepared every two years that summarizes and interprets groundwater quality and water level information collected during the past two years. This report cost is estimated to be $5,200 every two years. The annual cost of the biennial report will be $2,600.

The groundwater monitoring well permits will be renewed every 5 years (0.2 annual recurrence). Since the available FDEP form does not allow editing of the groundwater monitoring frequency, the permitting task was amortized and is represented as 1.65 renewals per quarter for a total of 33 wells over a 5-year period (1.65 wells/quarter x 4 quarters/year x 5 years. The cost of each permit renewal including permit renewal fee and professional services is $660, resulting in an annual permit renewal cost of $4,356.

Total annual cost for groundwater monitoring is $69,956.

4.2 Surface Water Monitoring

There are 2 surface water monitoring locations for Phases 1-5 and 5 surface water monitoring stations proposed for Phases 6-14, including 1 background, 3 stormwater pond outlet, and 1 downgradient location. Based on the cost of semi-annual monitoring with $425.00 per sampling event, the total cost of 7 surface water monitoring stations is $5,950 per year.

4.3 Gas Monitoring

According to historical annual monitoring costs, Trail Ridge Landfill's gas monitoring cost per year is as follows.

- Quarterly gas monitoring: $60.00/well
- Semi-annual gas monitoring reporting: $830.00

Estimated lump sum cost of gas monitoring for 30 monitoring wells is $8,860.00 per year.

4.4 Leachate Monitoring

Leachate monitoring cost is estimated based on historical annual costs of $3,720.00.

4.5 Leachate Collection/Treatment System Maintenance

A lump sum amount of $38,300 is estimated for cleaning and video inspection of the leachate collection underdrains. This cost includes cleaning and video inspection for the primary leachate collection system. For a total of 10 leachate collection pipes (2 underdrains per phase), a unit cost of $4,000 is calculated. This unit cost was applied to Phases 6 leachate collection pipes. A total of 12 underdrains (Ph 1-5: 10 pipes, Ph 6: 2 pipes) would result in $48,000 in annual maintenance costs.

4.6 Leachate Disposal

The disposal costs for leachate at the Jacksonville Electric Authority regional WWTP on average is $75.00/kgal according to WMI historical figures. The total estimated leachate for Phase 1-5 and Phase 6 annually that will be disposed annually is 3,064 Kgal. Estimated total treatment cost of leachate is $229,800 per year.

4.7 Groundwater Monitoring Well Maintenance

The maintenance of the groundwater monitoring wells is estimated as based on repair or replacement of 10 percent of all wells. With 21 total wells on-site for Phases 1-5 and Phase 6, the total anticipated replacement through the life of these phases will be two wells. On annual basis and a long-term care period of 30 years, the annual frequency of well maintenance is 0.07. The total estimated cost of groundwater monitoring is $385.

4.8 Gas System Maintenance

The maintenance of the groundwater landfill gas system is estimated to be $32,000 per year for all maintenance based on historical operations provided by Waste Management Inc.

4.9 Landscape Maintenance

The cost of mowing is estimated to be $360.00 per acre per year. The cost is estimated to be $63,000/year.

The cost of fertilizing is estimated to be $320.00 per acre per year. The cost is estimated to be $56,000/year.

The total cost for landscaping is estimated to be $118,660/year.

4.10 Erosion Control & Cover Maintenance

It is estimated that approximately 0.5% of the landfill surface area out of the 174.5 acres requires re-sodding per year. This is approximately 0.9 acres (4,000 sy) of sod per year. At a cost of $2.80/SY (Attachment 2) sod replacement is estimated to cost $11,200 per year.

It is estimated that approximately 0.5% of the landfill surface area out of the 174.5 acres requires re-grading per year. This is approximately 0.9 acres of re-grading per year. At a cost of $9,800/acre (Attachment 2) re-grading is estimated to cost $8,526 per year.

It is estimated that approximately 0.25% of the landfill surface area out of the 174.5 acres requires liner repair per year. This is approximately 0.4 acres (2,000 sy) per year. At a cost of $6.10/sy (Attachment 2) liner repair is estimated to cost $12,200 per year.

It is estimated that approximately 0.25% of the landfill surface area out of the 174.5 acres requires clay replacement every year. This is approximately 0.4 acres. At a depth of 1 foot this results in 1,000 cy of clay for replacement. At a cost of $29.50/cy (Attachment 2) clay replacement is estimated to cost $29,500 per year.

Total cost for erosion control and cover maintenance is estimated to be $56,926 per year.

4.11 Stormwater Management System Maintenance

The cost estimate for Stormwater Management System maintenance is estimated on a Lump Sum basis as $16,320/year. This is based on clearing 2,480 linear feet of ditch at a cost of $4.00/lf (Attachment 2) and a lump sum cost of $6,400 for conveyance maintenance.

4.12 Security System Maintenance

The cost estimate for security maintenance is estimated on a Lump Sum basis as $5,000/year for typical costs associated with on-site fencing.

4.13 Utilities

Utility costs are estimated on a Lump Sum basis as $50,000/year.

4.14 Leachate Collection/Treatment System Operation

One on-site technician is estimated to be needed 210 hours per year for leachate collection and treatment systems operations and one PE Supervisor is estimated to be needed for 24 hours per year. The labor rate is estimated to be $100 per hour and $150 per hour for the technician and supervisor respectively. Staff for leachate collection and treatment systems operations is estimated as $24,600/year.

4.15 Administrative

The administrative costs are estimated as $28,920/year. A breakdown of the hours and rates is provided on the Financial Assurance Cost Estimate Form.

4.16 Contingency

Total of items 1 through 14 above is $703,597. A contingency of 10% is assumed and estimated to be $70,359/year.

4.17 Site Specific Cost

There are no estimated site-specific costs for this facility.

Total annual long-term care is estimated as $773,956.70per year.

Over the 30-year long-term care period, the total long-term care cost is estimated to be $23,218,701.

Attachment 1
FDEP Form #62-701.900(28)

Print Form | Reset Form

Florida Department of Environmental Protection

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

DEP Form # 62-701.900(28), F.A.C.
Form Title: Closure Cost Estimating Form For Solid Waste Facilities
Effective Date: January 6, 2010
Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: Trail Ridge Class I Landfill WACS ID: 33628
Permit Application or Consent Order No.: _____ Expiration Date: _____
Facility Address: 5110 U.S. Highway 301, Baldwin, Florida 32234
Permittee or Owner/Operator: Trail Ridge Landfill, Inc.
Mailing Address: Same as Facility Address

Latitude: 30 ° 13 ' 27N " Longitude: 82 ° 02 ' 40W "
Coordinate Method: _____ Datum: NGVD 1929
Collected by: Robert M. Angas Associates Company/Affiliation Subconsultant

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing
Phase 1-5	144	5/18/1992	20 years +/-	3.5 years +/-		
Phase 6	30.5	NA	5 years +/-	NA		

Total disposal unit acreage included in this estimate: Closure: 128.2 Long-Term Care: 174.5

Facility type: ☒ Class I ☐ Class III ☐ C&D Debris Disposal
(Check all that apply) ☐ Other: _____

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

☐ Letter of Credit* ☐ Insurance Certificate ☒ Escrow Account
☐ Performance Bond* ☐ Financial Test ☐ Form 29 (FA Deferral)
☐ Guarantee Bond* ☐ Trust Fund Agreement

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

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

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

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

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

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

Southeast District
400 N. Congress Ave., Ste. 200
West Palm Beach, FL 33401
561-681-6600

III. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☒ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____

Number of Years of Long Term Care Remaining: × _____

Inflation Adjusted Long-Term Care Cost Estimate: = _____

Signature by: ☑ **Owner/Operator** ☐ **Engineer** (check what applies)

_____ Signature	1700 Wiles Rd Address
Tim Hawkins, President Name & Title	Pompano, FL 33073 City, State, Zip Code
9-8-15 Date	thawkins@wm.com E-Mail Address
954 984 2035 Telephone Number	

IV. ESTIMATED CLOSING COST (check what applies)

☐ **Recalculated Cost Estimate** ☒ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY	207,000	$2.00	$414,000.00
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	$414,000.00
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY	140,000	$29.50	$4,130,000.00
Synthetics - 40 mil	SY	201,000	$6.10	$1,226,100.00
Synthetics - GCL	SY			
Synthetics - Geonet	SY	201,000	$5.75	$1,155,750.00
Synthetics - Other (explain) (Sand)	SY	67,000	$22.00	$1,474,000.00
			Subtotal Cover Material:	$7,985,850.00
4. Top Soil Cover:				
Off-Site Material	CY	347,000	$16.10	$5,586,700.00
Delivery	CY			
Spread	CY			
			Subtotal Top Soil Cover:	$5,586,700.00
5. Vegetative Layer				
Sodding	SY	620,000	$2.80	$1,736,000.00
Hydroseeding	AC			
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	$1,736,000.00
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping (Letdown Piping)	LF	10,000	$119.50	$1,195,000.00
Ditches	LF			
Berms	LF			
~~Control Structures~~ Terrace Drains	EA	105	$8,436.00	$885,780.00
Other (explain) (Underdrains)		51,000	$24.00	$1,224,000.00
			Subtotal Stormwater Control System:	$3,304,780.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA			
Pipe and Fittings	LF			
Monitoring Probes	EA			
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	
8. Active Gas Extraction Control:				
Traps	EA	9	$16,220.00	$145,980.00
Sumps	EA			
Flare Assembly	EA			
~~Flame Arrestor~~ 6"-10" Pipes, Fittings	~~EA~~ LF	30,600	$48.60	$1,487,160.00
~~Mist Eliminator~~ 12"-18" Pipes, Fittings	~~EA~~ LF	15,000	$74.40	$1,116,000.00
~~Flow Meter~~ Well Drilling	~~EA~~ LF	12,300	$125.00	$1,537,500.00
~~Blowers~~ 6"-10" Control Valve	EA	26	$4,632.00	$120,432.00
~~Collection System~~ 12"-18" Control Valve	LF	32	$7,440.00	$238,080.00
Other (explain) Wellhead Assembly		88	$852.00	$74,976.00
			Subtotal Active Gas Extraction Control:	$4,720,128.00
9. Security System:				
Fencing	LF			
Gate(s)	EA			
Sign(s)	EA			
			Subtotal Security System:	
10. Engineering:				
Closure Plan Report	LS	1	$89,150.00	$89,150.00
Certified Engineering Drawings	LS	1	$318,400.00	$318,400.00
NSPS/Title V Air Permit	LS	1		
Final Survey	LS	1	$76,420.00	$76,420.00
Certification of Closure	LS	1	$25,500.00	$25,500.00
Other (explain)				
			Subtotal Engineering:	$509,470.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services	Contract Management		Quality Assurance		
P.E. Supervisor	250	$150	100	$150	$52,500.00
On-Site Engineer			8,900	$80.	$712,000.00
Office Engineer	100	$128	400	$115	$58,800.00
On-Site Technician	250	$60.	2,400	$60.	$159,000.00
Other (explain)	1	$8,8	1	$12,	$21,600.00

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	$384,600.00	$384,600.00
			Subtotal Professional Services:	$1,388,500.00

	Subtotal of 1-11 Above:	$25,645,428.00
12. Contingency 15 % of Subtotal of 1-11 Above		$3,846,814.20
	Subtotal Contingency:	$3,846,814.20
	Estimated Closing Cost Subtotal:	$29,492,242.20

Description	**Total Cost**
13. Site Specific Costs	
Mobilization	$744,852.93
Waste Tire Facility 1,600 Tons @ $100/Ton	$160,000.00
Materials Recovery Facility	
Special Wastes Erosion Control (1% of Construction Cost)	$63,700.00
~~Leachate Management System Modification~~	$297,941.17
Other (explain) Bonds (1.2% of Construction Cost)	$357,529.41
Subtotal Site Specific Costs:	$1,624,023.51

TOTAL ESTIMATED CLOSING COSTS ($): $31,116,265.71

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☒ 30 Years ☐ Other, ___ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all entries left blank.

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12			
Quarterly Permit Renewal	4	1.65	$660.00	$4,356.00
Semi-Annually	2	21	$1,500.00	$63,000.00
Annually Cost of Biennial Tech Report	1	1	$2,600.00	$2,600.00
			Subtotal Groundwater Monitoring:	$69,956.00
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2	7	$425.00	$5,950.00
Annually	1			
			Subtotal Surface Water Monitoring:	$5,950.00
3. Gas Monitoring [62-701.400(10)]				
Monthly	12			
Quarterly	4	30	$60.00	$7,200.00
Semi-Annually	2	1	$830.00	$1,660.00
Annually	1			
			Subtotal Gas Monitoring:	$8,860.00
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
Other (explain) _____	1	1	$3,720.00	$3,720.00
			Subtotal Leachate Monitoring:	$3,720.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF			
Sumps, Traps	EA			
Lift Stations	EA	12	$4,000.00	$48,000.00
Cleaning	LS	1		
Tanks	EA			

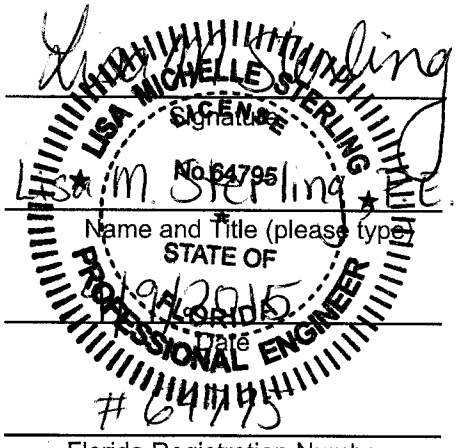
Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY			
Sludge Removal	CY			
Aeration Systems				
Floating Aerators	EA			
Spray Aerators	EA			
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon	3,064	$75.00	$229,800.00
			Subtotal Leachate Collection / Treatment Systems Maintenance:	$277,800.00
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF			
Replacement	EA	0.07	$5,500.00	$385.00
Abandonment	EA			
			Subtotal Groundwater Monitoring Well Maintenance:	$385.00
7. Gas System Maintenance				
Piping, Vents	LF			
Blowers	EA			
Flaring Units	EA			
Meters, Valves	EA			
Compressors	EA			
Flame Arrestors	EA			
Operation	LS	1	$32,000.00	$32,000.00
			Subtotal Gas System Maintenance:	$32,000.00
8. Landscape Maintenance				
Mowing	AC	174.5	$360.00	$62,820.00
Fertilizer	AC	174.5	$320.00	$55,840.00
			Subtotal Landscape Maintenance:	$118,660.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	4,000	$2.80	$11,200.00
Regrading	AC	0.87	$9,800.00	$8,526.00
Liner Repair	SY	2,000	$6.10	$12,200.00
Clay	CY	1,000	$29.50	$29,500.00
			Subtotal Erosion Control and Cover Maintenance:	$61,426.00
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	$16,320.00	$16,320.00
			Subtotal Storm Water Management System Maintenance:	$16,320.00
11. Security System Maintenance				
Fences	LS	1	$5,000.00	$5,000.00
Gate(s)	EA			
Sign(s)	EA			
			Subtotal Security System Maintenance:	$5,000.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	$50,000.00	$50,000.00
			Subtotal Utilities:	$50,000.00
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR	24	$150.00	$3,600.00
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR	210	$100.00	$21,000.00
Materials	LS	1		
	Subtotal Leachate Collection/Treatment Systems Operation:			$24,600.00
14. Administrative				
P.E. Supervisor	HR	48	$160.00	$7,680.00
On-Site Engineer	HR	20	$120.00	$2,400.00
Office Engineer	HR	20	$150.00	$3,000.00
OnSite Technician	HR	120	$100.00	$12,000.00
Other _____		48	$80.00	$3,840.00
			Subtotal Administrative:	$28,920.00
			Subtotal of 1-14 Above:	$703,597.00
15. Contingency	10	% of Subtotal of 1-14 Above		$70,359.70
			Subtotal Contingency:	$70,359.70

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
			Subtotal Site Specific Costs:	
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	$773,956.70
			Number of Years of Long-Term Care:	30
			TOTAL LONG-TERM CARE COST ($):	$23,218,701.00

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.



Signature

Lisa M. Sterling, PE
Name and Title (please type)

9/9/2015
Date

#64795
Florida Registration Number
(please affix seal)

8381 Dix Ellis Trail, Suite 400
Mailing Address

Jacksonville, FL 32258
City, State, Zip Code

SterlingLM@cdmsmith.com
E-Mail address (if available)

904-527-6726
Telephone Number

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant

2700 Wiles Road
Mailing Address

Tim Hawkins, Pres.
Name and Title (please type)

Pompano, FL 33073
City, State, Zip Code

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

954 984 2035
Telephone Number

Attachment 2
Certified Unit Costs

SEC
SOUTHEAST ENVIRONMENTAL CONTRACTING, INC.

5667 VAL DEL ROAD
HAHIRA, GA 31632

(229) 794-3330
FAX (229) 794-3332

earl@southeastenvironmental.com

8/27/2015

CDM Smith
Yanni Polematidis, P.E.
8381 Dix Ellis Trail, Suite 400
Jacksonville, Florida 32256

Subject: Trail Ridge Landfill Financial Assurances – 2015

Mr. Polematidis,

Per our discussion, below are the unit costs that SEC can perform the work for closure and long-term care activities. These are unit costs are based on the fair market value for material, equipment and labor for the work to be performed for TRLF.

	Item	Unit		
Final Cover				
	Placement and Spread Intermediate Cover	Cy	$	2.00
	Clay (Offsite)	Cy	$	29.50
	Synthetics - 40 Mil HDPE Liner	Sy	$	6.10
	Synthetics - Geonet	Sy	$	5.75
	Synthetics - Geotextile (8 oz)	Sy	$	2.75
	Sand Layer (1 x 10^-3 cm/sec) (1' thick)	Cy	$	22.00
	Top Soil (2' thick)	Cy	$	16.10
	Sod (Bahia)	Sy	$	2.75
	Earthworks (import fill)	Cy	$	17.20
	30" HDPE Pipe	Lf	$	344.50
	Terrace Side Drains	Ea	$	8,436.00
	Underdrain	Lf	$	24.65
	Sand Layer (1 x 10^-3 cm/sec) (1' thick)	Cy	$	26.50
Side Slope Closure				
	Rework of initial cover	AC	$	9,000.00
	12" Clay Layer	SY	$	19.60
	24" Top Soil (Offsite)	SY	$	15.50
	Sod(Bahia)	SY	$	2.80
	Grass Overseed	SY	$	0.05
	30" HDPE Downcomer Pipe (SDR 32.5)	LF	$	298.00
	18" Side Drains	LF	$	99.00
	6" Underdrain	LF	$	24.00
	Sand Cement Rip Rap	EA	$	9.70
	18-inch HDPE (SDR 32.5) - downcomer	LF	$	99.00
	24-inch HDPE (SDR 32.5) - downcomer	LF	$	140.00
	6-inch HDPE (SDR 32.5) - downcomer	LF	$	24.00

Seep Wells				
	Seep Wells			
	Excavation for Seep Wells	Cy	$	60.00
	Seep/Rock Well	Ea	$	13,100.00
	Pneumatic Pump	Ea	$	5,750.00
Active Gas System				
	Traps	Ea	$	16,220.00
	Flare Assembly	Ea	$	262,500.00
	6"-10" Pipe and Fittings	Lf	$	48.60
	12"-18" Pipes and Fittings	Lf	$	74.40
	Wells	Lf	$	125.00
	6"-10" Control Valve	EA	$	4,632.00
	12"-18" Control Valve	Ea	$	7,440.00
	Well Head Assembly	Ea	$	852.00
	Sumps	Ea		
	2" HDPE (SDR 32.5 pipe)	Lf	$	18.80
Erosion Control and Maintenance				
	Regrade Area	Ac	$	8,000.00
	Repair Final Cover	Sy	$	7.65
	Import Clay	Cy	$	28.50
	Ditch Cleaning	Lf	$	4.00
Civil				
	Regrade Area/Compaction	Ac	$	9,800.00
	Repair Final Cover	Sy	$	7.65

Please let me know if you have any additional questions and feel free to reach me at 229-794-3330.

Sincerely,

Earl Homes
President
Southeast Environmental Contracting, Inc.
www.southeastenvironmental.com