



WEST PASCO CLASS III LANDFILL
FINANCIAL ASSURANCE
CLOSURE AND LONG-TERM CARE ESTIMATES

Facility I.D. Number 45799
Permit No. 26254-003-SO/T3

Prepared for:

Pasco County Utilities
14230 Hays Road
Spring Hill, FL 34610

Prepared by:

JMG Engineering, Inc.
238 East Davis Blvd., Suite 206
Tampa, FL 33606

August 2018

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JMG Engineering, Inc. has prepared this Financial Assurance Closure and Long-Term Care Cost Estimate document for the Class III Construction and Demolition Debris landfill cells located at the West Pasco Solid Waste Facility (WACS No. 45799) in accordance with Rule 62-701.630, F.A.C. The cost estimates were completed using FDEP Form 62-701.900 (28) and signed by the authorized representative of the Owner of the facility and signed and sealed by the Engineer of Record. These forms are provided in Part 2 of this report.

Accompanying the cost estimate forms is a Cost Estimate Report provided in Part 3. The Report includes general information regarding the cost estimates, the assumptions and calculations used in preparing the cost estimates, and the unit cost references associated with each line item. The source information for the cost references and contractors' quotes used in Part 3 is provided in Part 4. JMG either requested unit costs from third party vendors/contractors, or used unit costs from RS Means construction cost estimating manuals and adjusted the unit cost for the Tampa, Florida area.

Unit cost estimates for closure and long-term care of the facility are being calculated in accordance with the February 2015 revisions to FDEP 62-701.630(3)(d).

PART 2

FINANCIAL ASSURANCE COST ESTIMATE FORMS



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: West Pasco Class III Landfill WACS ID: 45799
 Permit Application or Consent Order No.: 26254-003-SO/T3 Expiration Date: 11/22/2033
 Facility Address: 14230 Hays Road, Spring Hill, FL 34610
 Permittee or Owner/Operator: Pasco County Utilities
 Mailing Address: same

Latitude: 28° 22' 30" Longitude: 82° 34' 00"
 Coordinate Method: _____ Datum: _____
 Collected by: _____ Company/Affiliation: _____

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
Cell 1	5	Jun 1990	11.92	0	N/A	N/A
Cell 2	5	May 2002	15.52	0	N/A	N/A
Cell 3	5	not in use			N/A	N/A
Cell 4	5	Jul 1990	0.4		N/A	N/A
				38 Total		

Total disposal unit acreage included in this estimate: Closure: 20 Long-Term Care: 20

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.
Tempe 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 adjustment 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 Deflator 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:

x

=

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:

x

=

Number of Years of Long Term Care Remaining:

x

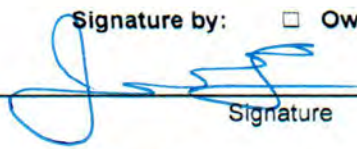
Inflation Adjusted Long-Term Care Cost Estimate:

=

Signature by: ☐ Owner/Operator

☒ Engineer

(check what applies)


Signature

238 East Davis Blvd., Suite 206

Address

Jason Gorrie, P.E., BCEE

Name & Title

Tampa, FL 33606

City, State, Zip Code

8/26/2018

Date

jason@jmg-eng.com

E-Mail Address

(813) 605-0706

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 exp

2. Cost estimate must be certified by a professional engineer.

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

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

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells (Do not include wells already in existence.)				
	EA	0	\$0.00	
Subtotal Proposed Monitoring Wells:				
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY	33,880	\$4.50	\$152,460.00
Compaction	CY	33,880	\$0.89	\$30,153.20
Off-Site Material	CY	33,880	\$12.90	\$437,052.00
Delivery	CY			
Subtotal Slope and Fill:				\$619,665.20
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY	101,640	\$5.50	\$559,020.00
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain)				
Subtotal Cover Material:				\$559,020.00
4. Top Soil Cover:				
Off-Site Material	CY			
Delivery	CY	50,820	\$12.90	\$655,578.00
Spread	CY	50,820	\$5.00	\$254,100.00
Subtotal Top Soil Cover:				\$909,678.00
5. Vegetative Layer				
Sodding	SY	101,640	\$2.75	\$279,510.00
Hydroseeding	AC			
Fertilizer	AC			
Mulch	AC			
Other (explain)				
Subtotal Vegetative Layer:				\$279,510.00
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping	LF			
Ditches	LF			
Berms	LF			
Control Structures	EA			
Other (explain)				
Subtotal Stormwater Control System:				

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	_____	_____	_____
Sumps	EA	_____	_____	_____
Flare Assembly	EA	_____	_____	_____
Flame Arrestor	EA	_____	_____	_____
Mist Eliminator	EA	_____	_____	_____
Flow Meter	EA	_____	_____	_____
Blowers	EA	_____	_____	_____
Collection System	LF	_____	_____	_____
Other (explain) _____	_____	_____	_____	_____
Subtotal Active Gas Extraction Control:				_____
9. Security System:				
Fencing	LF	_____	_____	_____
Gate(s)	EA	_____	_____	_____
Sign(s)	EA	1	\$2,000.00	\$2,000.00
Subtotal Security System:				\$2,000.00
10. Engineering:				
Closure Plan Report	LS	1	\$60,000.00	\$60,000.00
Certified Engineering Drawings	LS	1	\$60,000.00	\$60,000.00
NSPS/Title V Air Permit	LS	1	_____	_____
Final Survey	LS	1	\$30,000.00	\$30,000.00
Certification of Closure	LS	1	\$40,000.00	\$40,000.00
Other (explain) <u>bidding svcs</u>	LS	1	\$30,000.00	\$30,000.00
Subtotal Engineering:				\$220,000.00

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	<u>Contract Management</u>		<u>Quality Assurance</u>		
P.E. Supervisor	_____	_____	_____	_____	_____
On-Site Engineer	_____	_____	_____	_____	_____
Office Engineer	_____	_____	_____	_____	_____
On-Site Technician	_____	_____	_____	_____	_____
Other (explain) 1	1	\$200.00	_____	_____	\$200,000.00
<u>Contract Management</u>					

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1	\$50,000.00	\$50,000.00
Subtotal Professional Services:				\$250,000.00

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.
(Check Term Length) ☐ 5 Years ☐ 20 Years ☒ 30 Years ☐ Other, ___ Years

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

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

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

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

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12	_____	_____	_____
Quarterly	4	_____	_____	_____
Semi-Annually	2	13	\$278.61	\$7,243.86
Annually	1	_____	_____	_____
Subtotal Groundwater Monitoring:				\$7,243.86
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12	_____	_____	_____
Quarterly	4	_____	_____	_____
Semi-Annually	2	_____	_____	_____
Annually	1	_____	_____	_____
Subtotal Surface Water Monitoring:				_____
3. Gas Monitoring [62-701.400(10)]				
Monthly	12	_____	_____	_____
Quarterly	4	_____	_____	_____
Semi-Annually	2	_____	_____	_____
Annually	1	_____	_____	_____
Subtotal Gas Monitoring:				_____
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	\$350.00	\$350.00
Subtotal Leachate Monitoring:				\$350.00
Annual TCLP analysis _____				

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
<u>Maintenance</u>				
Collection Pipes	LF	_____	_____	_____
Sumps, Traps	EA	_____	_____	_____
Lift Stations	EA	_____	_____	_____
Cleaning	LS	1	\$9,000.00	\$9,000.00
Tanks	EA	_____	_____	_____

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
<u>Impoundments</u>				
Liner Repair	SY	_____	_____	_____
Sludge Removal	CY	_____	_____	_____
<u>Aeration Systems</u>				
Floating Aerators	EA	_____	_____	_____
Spray Aerators	EA	_____	_____	_____
<u>Disposal</u>				
Off-site (Includes transportation and disposal)	1000 gallon	450	\$4.04	\$1,818.00
Subtotal Leachate Collection / Treatment Systems Maintenance:				\$10,818.00
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF	_____	_____	_____
Replacement	EA	0.5	\$4,500.00	\$2,250.00
Abandonment	EA	0.5	\$600.00	\$300.00
Subtotal Groundwater Monitoring Well Maintenance:				\$2,550.00
7. Gas System Maintenance				
Piping, Vents	LF	_____	_____	_____
Blowers	EA	_____	_____	_____
Flaring Units	EA	_____	_____	_____
Meters, Valves	EA	_____	_____	_____
Compressors	EA	_____	_____	_____
Flame Arrestors	EA	_____	_____	_____
Operation	LS	1	_____	_____
Subtotal Gas System Maintenance:				_____
8. Landscape Maintenance				
Mowing	AC	180	\$20.00	\$3,600.00
Fertilizer	AC	_____	_____	_____
Subtotal Landscape Maintenance:				\$3,600.00
9. Erosion Control and Cover Maintenance				
Sodding	SY	9,000	\$2.75	\$24,750.00
Regrading	AC	0.125	\$9,600.00	\$1,200.00
Liner Repair	SY	_____	_____	_____
Clay	CY	_____	_____	_____
Subtotal Erosion Control and Cover Maintenance:				\$25,950.00
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1	\$1,800.00	\$1,800.00
Subtotal Storm Water Management System Maintenance:				\$1,800.00
11. Security System Maintenance				
Fences	LR	1	\$1,290.00	\$1,290.00
Gate(s)	EA	_____	_____	_____
Sign(s)	EA	_____	_____	_____
Subtotal Security System Maintenance:				\$1,290.00

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1	\$6,000.00	\$6,000.00
			Subtotal Utilities:	\$6,000.00

13. Leachate Collection/Treatment Systems Operation

Operation

P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR	24	\$105.00	\$2,520.00
OnSite Technician	HR	200	\$60.00	\$12,000.00
Materials	LS	1		
Subtotal Leachate Collection/Treatment Systems Operation:				\$14,520.00

14. Administrative

P.E. Supervisor	HR	24	\$160.00	\$3,840.00
On-Site Engineer	HR	40	\$120.00	\$4,800.00
Office Engineer	HR	40	\$105.00	\$4,200.00
OnSite Technician	HR	80	\$60.00	\$4,800.00
Other <u>surveyor</u>	HR	40	\$95.00	\$3,800.00
Subtotal Administrative:				\$21,440.00

Subtotal of 1-14 Above: \$95,561.86

15. Contingency	10	% of Subtotal of 1-14 Above		\$9,556.19
Subtotal Contingency:				\$9,556.19

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
Subtotal Site Specific Costs:				

ANNUAL LONG-TERM CARE COST (\$ / YEAR): \$105,118.05

Number of Years of Long-Term Care: 30

TOTAL LONG-TERM CARE COST (\$): \$3,153,541.38

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.



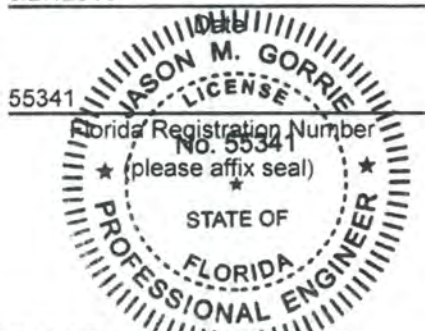
Signature

Jason Gorrie

Name and Title (please type)

8/27/2018

Date



238 East Davis Blvd., Suite 206

Mailing Address

Tampa, FL 33606

City, State, Zip Code

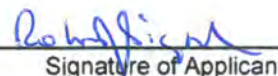
jason@img-eng.com

E-Mail address (if available)

(813) 605-0706

Telephone Number

VII. SIGNATURE BY OWNER/OPERATOR



Signature of Applicant

Robert Sigmond

Name and Title (please type)

rsigmond@pascocountyfl.net

E-Mail address (if available)

19420 Central Blvd., Suite 219

Mailing Address

Land O' Lakes, FL 34637

City, State, Zip Code

(813) 235-6196

Telephone Number

PART 3
COST ESTIMATE REPORT

CLOSURE COST ESTIMATES REPORT

August 2018

Pursuant to Rule 62-701.630(4)(b) F.A.C., unit cost estimates for closure and long-term care of the facility are being calculated in accordance with the February 2015 revisions to FDEP 62-701.630(3)(d), F.A.C. Note that some of the quantities have been obtained from previously calculated and approved Financial Assurance Cost Estimates (FACE).

GENERAL INFORMATION AND ASSUMPTIONS

Surface area of Class III Cells = ~ 20 acres

For Closure Items 2 through 4, assume an overall loss factor of 5% to count for soil losses & testing, geosynthetics losses & testing, and miscellaneous materials uses (such as installation of anchor trenches) during construction.

Geosynthetics:

Area (incorporating 5% loss factor) = 21 acres = 914,760 ft² = 101,640 yd²

Soils:

914,760 ft² x 0.5 ft (6") cover = 457,380 ft³ / 27 = 16,940 yd³

914,760 ft² x 1.0 ft (12") cover = 914,760 ft³ / 27 = 33,880 yd³

914,760 ft² x 1.5 ft (18") cover = 1,372,140 ft³ / 27 = 50,820 yd³

Unit Cost Estimations and Calculations:

All unit costs are explained in the following parts for each item. The RS Means 2017 Heavy Construction Cost Data 31st Annual Edition was used to estimate some unit costs. The cost references third party contractors' quotes, recent construction costs at nearby landfills, and RS Means pages have been provided in Part 4.

CLOSURE COSTS

Item No. 1 Proposed Monitoring Wells

There are 13 existing monitoring wells at the site. No additional monitoring wells are proposed for closure.

Item No. 2 Slope and Fill

The slope and intermediate cover will be maintained during the operation of the landfill. During closure, there will be a need to shape and compact the intermediate cover existing at the time of closure. The currently approved closure design for the landfill is depicted in **Figure 1**. These design concepts were used to generate grading/compaction costs associated with the intermediate cover and cap foundation layer. Soil quantities were increased by an additional 5% to account for shrinkage & bulking losses.

Quantity of 18" soil fill (intermediate cover + cap foundation layer) = 50,820 CY

Off-site soils will be purchased and delivered for closure purposes. Unit cost estimates are based on a third party quotations and on RS Means 2017 Heavy Construction Cost Data 31st Annual Edition.

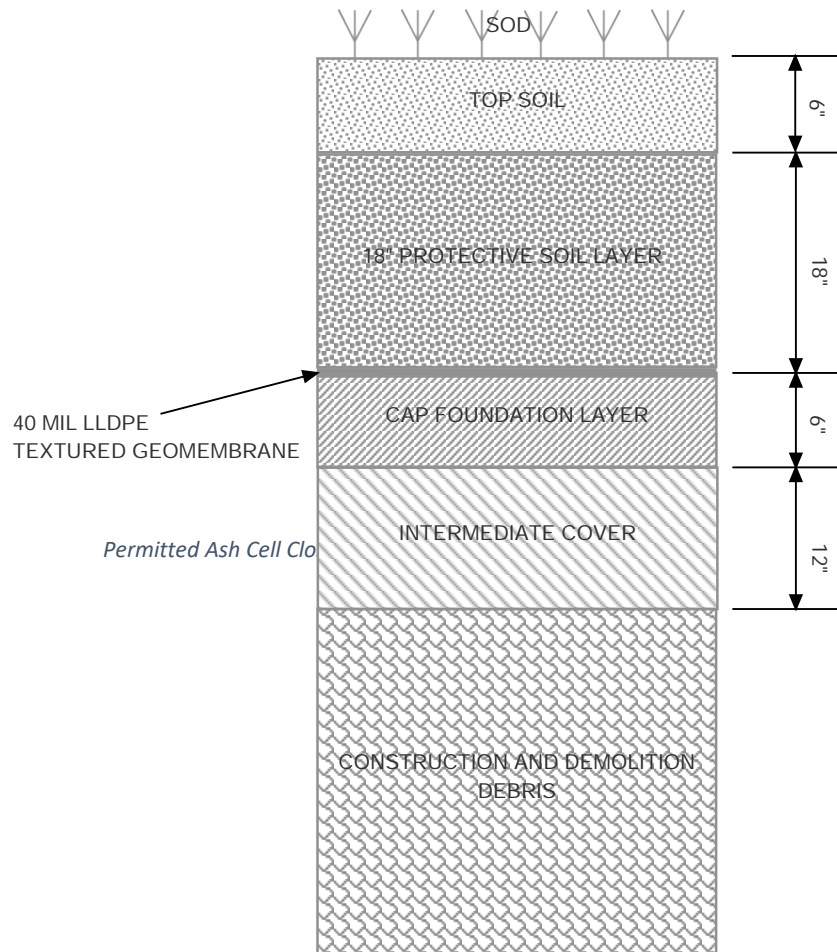


Figure 2
Permitted SW Cell Closure Cap Design

Item No. 3 Barrier Layer

The landfill barrier layers will consist of a layer of 40-mil textured LLDPE (linear low-density polyethylene) geomembrane as depicted in Figure 1.

Quantity of geosynthetics = 101,640 SY

Geosynthetics costs are based on bid pricing by a third party contractor. To verify this cost, third party contractors' quotations for landfill closure projects at similar landfill facilities in Florida were obtained and compared. The estimates used to determine unit cost for the installed geosynthetics are provided in Part 4 of this document.

Item No. 4 Final Cover Material

The quantity for this item was based on 18 inches of soil above the barrier layer. Also, soil quantities were increased by additional 5% to count for shrinkage & bulking losses.

Quantity of 18" protective soil layer = 50,820 CY

Final cover cost is based on bid pricing by a third party contractor and is compared to recent construction activities (March 2015) at the Hillsborough County SCLF. The 2015 bid price included the costs of excavation, transportation, placement, grading and compaction. To verify this cost, third party contractors' quotations for landfill closure projects at similar landfill facilities in Florida were obtained.

Item No. 5 Vegetative Cover

When closed, the landfill will be covered with 6" of top soil capable of supporting vegetative growth. The upper layer will be sodded.

Quantity of top soil (6") placed on top of final cover layer = 16,940 CY

Quantity of soil placed over top soil = 101,640 SY

Sodding cost is based on an April 2015 third party contractors quotations received on landfill closure projects for similar landfill facilities in the Tampa Bay area and from a Pasco County-specific quote provided by Comanco.

- Sodding unit cost from 2015 and 2017 contractor quotes = \$2.75 per SY

Item No. 6 Stormwater Control Systems

The currently approved closure design anticipates that the final contours of the landfill at closure will shed all stormwater to the existing perimeter swale system. An existing stormwater pond located just to the north of the landfill will receive stormwater from the existing swale system. No additional control systems will need to be constructed following closure.

Item No. 7 Passive Gas Control

Because no putrescible waste will be placed in the Class III cells, there is no potential for the generation of landfill gas and no gas control systems are envisioned.

Item No. 8 Active Gas Extraction Control

Because no putrescible waste will be placed in the Class III cells, there is no potential for the generation of landfill gas and no gas control systems are envisioned.

Item No. 9 Security System

Perimeter fencing, gates and signs already exist at the facility. A \$2,000 lump sum is allocated in the cost estimates for additional signs or fence modifications required at the time of closure.

Item No. 10 Engineering

The engineering costs associated with closing the ash cells and the solid waste cells is estimated to be approximately 5% of the closure costs, or approximately \$220,000.

Item No. 11 Professional Services

The cost for professional services related to contract management and quality assurance for closure is estimated to be approximately 6% of the closure costs, or approximately \$250,000.

Item No. 12 Contingency

A contingency of 5% is added to the subtotal of items 1 through 11.

Item No. 13 Site Specific Costs

There are no Site Specific Costs identified at this time

LONG TERM CARE COST ESTIMATE

August 2018

1. Groundwater Monitoring [62-701.510 (6), and (8)(a)]

The West Pasco Class III Landfill has 13 groundwater monitoring wells that are sampled semi-annually. Sampling and analysis is conducted by Pasco County Environmental Services. Included in Part 4 are the unit costs estimates provided by Pasco County Environmental Laboratory to obtain the required groundwater samples and to analyze them for the required constituents. Annual groundwater sampling and analysis is estimated to be **\$7,243.86**.

2. Surface Water Monitoring [62-701.510(4), and (8)(b)]

It is not anticipated that the existing stormwater system will discharge from the site. Accordingly, there is no cost associated with surface water monitoring.

3. Gas Monitoring [62-701.400(10)]

Because the landfill only accepts non-putrescible waste, it is not anticipated to generate significant amounts of landfill gas. Accordingly, there is no cost associated with gas monitoring.

4. Leachate Monitoring [62-701.510(5),(6)(b) and 62-701.510(8)(c).

Currently, leachate is collected and pumped to the adjacent Shady Hills Wastewater Treatment Plant for disposal. The disposal site requires an annual demonstration that the leachate does not exhibit the toxicity characteristic defined at 40 CFR 261.24. The annual cost to conduct a TCLP analysis is approximately \$350.

Annual leachate monitoring is estimated to be **\$350**.

5. Leachate Collection/Treatment Systems Maintenance

Routine maintenance of the leachate collection system is a high-pressure cleaning of all laterals and collection mains every five years. A third-party contractor recently conducted this maintenance at a cost of \$3,200 (see **Part 4**). Though not deemed necessary following the last routine pressure cleaning, it is possible that additional video-inspection *could* become necessary in the future. Therefore, for purposes of estimating long-term care costs, Pasco County will apply a safety factor to this estimate and assume an annual cost of **\$9,000** per year.

Leachate from the landfill is currently collected in 2 lift stations and directly to the adjacent Shady Hills Wastewater Treatment Facility. The current charge-back price that Pasco County Utilities accepts the leachate for is \$4.04/thousand gallons (see **Part 4**).

Once the landfill is in long term care, the amount of leachate generated will be minimal because of the landfill cover. To approximate the amount of leachate that will be generated following installation of the final cover systems, leachate generation rates for the closed East Pasco Class I landfill were reviewed. The East Pasco Landfill was used for this analysis because the closure design is similar to that anticipated for the West Pasco Class III landfill. The portion of the East Pasco Landfill that incorporates a leachate collection system is approximately 80 acres in size. Monthly leachate generation rates for East Pasco show that the average monthly volume of leachate collected in the capped and closed landfill is approximately 150,000 gallons per month. Extrapolating this value out over a 12-month period results in an estimated annual leachate generation rate of 1.8 million gallons for the 80 acre closed landfill, or 22,500 gallons per year per acre. At \$4.04/thousand gallon disposal, this equates to approximately **\$1,818** per year in leachate disposal costs.

6. Groundwater Monitoring Well Maintenance

It is estimated that the construction of a new well, installed to a depth of approximately 30 feet (the average depth of a surficial aquifer monitoring well at the site) is approximately \$4,500. Assuming that all of the existing monitoring wells will at some point during the 30-year long term care period be replaced, total replacement cost will be \$58,500 ($\$4,500 \times 13$ wells). For simplicity, it will be assumed that a new well will be conservatively assumed that a new well will be installed every other year over the 30 year long term care period, resulting in an estimated annual cost of **\$2,250**.

7. Gas System Maintenance

Because the landfill only accepts non-putrescible waste, it is not anticipated to generate significant amounts of landfill gas. Accordingly, there is no cost associated with gas system maintenance.

8. Landscape Maintenance

Pasco County Utilities will contract out the mowing and landscape services necessary at the landfill. **Part 4** provides the latest Bid Tabulation for the Request for Bid associated with the landscape maintenance activities. The prevailing bidder provided a cost of \$20/acre and the estimated acreage will be approximately 20 acres. Assuming a mowing frequency of 9 times per year, the annual cost associated with landscape maintenance is **\$3,600** ($\$20/\text{acre} \times 20 \text{ acres} \times 9 \text{ events/year}$).

9. Erosion Control and Cover Maintenance

It is estimated that approximately 1,000 square yards of the landfill surface area requires re-sodding every year. Assuming a conservative cost for sod of \$2.75 per square foot, the total estimated annual cost for re-sodding is approximately **\$24,750**.

To estimate the amount the amount of cover soil, it is assumed that 6 inches of soil will need to be placed and graded for every 0.125 acres of sod placed each year. This results in a required

volume of $0.125 \text{ acres} \times 0.5 \text{ ft} \times 43,560 \text{ ft}^2/\text{acre} = 2,723 \text{ ft}^3 = 100 \text{ cubic yds}$. Assuming a conservative unit rate of $\$12/\text{yd}^3$, the total annual cost for soil is estimated to be **\$1,200**. Assuming proper maintenance of the cover system, liner repairs are not anticipated.

The estimated total annual cost for cover soil and sod is approximately **\$25,950**

10. Stormwater Management System Maintenance

In order to maintain the stormwater system in its current capacity of precluding off-site discharges, it will be necessary to maintain the drainage swale system by removing vegetation from the swales. To accomplish this, it is assumed that a portion of the annual landscape maintenance costs can be applied to the stormwater system. For purposes of this estimate, it is assumed that annual swale maintenance can be achieved at approximately 50% of the annual landscape maintenance cost, or approximately **\$1,800**.

11. Security System Maintenance

The site security system consists of a 6' chain link fence and multiple rolling chain-link gates. It is estimated that there will be approximately 50 feet of fence that must be replaced each year for the 30 years of long term care, at a cost of approximately \$25 per linear foot. In addition, it is anticipated that 2 gates will need to be replaced at least once in the next 30 years. This results in an annual estimated cost of **\$1,290** ($50 \text{ feet} \times \$25/\text{ft} + \$1,200/30 \text{ years}$).

12. Utility Costs

It is assumed that electricity from the Waste-to-Energy Facility will not be available during the long term care period of the landfill and that electrical power to operate the leachate pumps and other electrical equipment must be purchased from the local electric utility. A review of annual purchases from Withlacoochee Electrical Cooperative (included in Part 4) shows that the site currently purchases approximately \$1,000 worth of electricity monthly. Approximately half of that electricity is consumed by the scalehouse, which will not be in service during closure. Therefore it is assumed that the annual utility costs during closure will be **\$6,000** ($\$500/\text{month} \times 12 \text{ months}$)

13. Leachate Collection/Treatment System Operation

It is assumed that a part-time Operator will be assigned to the landfill throughout the closure period to maintain the leachate collection system and perform daily site security functions. At a fully loaded labor rate of \$60/hr and an anticipated 200 hrs per year of labor, this results in an annual cost of approximately \$12,000 per year. The part time Operator will be assisted by a part time Office Engineer. At a fully loaded labor rate of \$105/hr and an anticipated 24 hrs per year of labor, this results in an annual cost of approximately \$2,520.00 per year. The overall estimated annual operating labor costs are expected to be approximately **\$14,520** per year

14. Administrative

To administer the regulatory obligations of the closed landfill during the long term care period (such as maintaining compliance with the Long Term Care Permit, assessing the condition of the

closed landfill, preparing an annual survey, etc.), a number of Administrative functions are necessary. The total annual estimate for these functions (as broken out on Form 62-701.900(28)) is **\$21,440**.

PART 4
UNIT COST REFERENCES

BID NO. IFB-EC-16-130
 LANDFILL COVER MATERIAL - AA
 5/23/16 2:30 PM

Description	CENTRAL FLORIDA TRANSPORT, LLC		RON MORSE TRACTOR SERVICE LLC	
	COLEMAN, FL		BROOKSVILLE, FL	
Sand Cover Materials Delivered	Cost per Cubic Yard		Cost per Cubic Yard	
to: West Pasco County Class I Sanitary Landfill 14230 Hays Road Spring Hill, Florida	\$ 12.90		\$ 14.50	
Per the specifications, on an as-needed basis.				
Delivery: _____ Calendar				
Days after Receipt of Purchase Order.	3		10	

* The above price is for purchase & delivery of clean fill material.

Closure

2. Slope and Fill
 off-Site Material

4. Top Soil Cover
 Delivery

23 Excavation and Fill

23.23 - Fill

23.20 Hauling

	Crew	Daily Output	Labor-Hours	Unit	Material	2017 Bare Costs Labor	2017 Bare Costs Equipment	Total	Total Incl O&P
25 MPH ave, cycle 4 miles	B-341	216	.037	L.C.Y.		1.69	3.78	5.47	6.70
cycle 6 miles		198	.040			1.84	4.12	5.96	7.30
cycle 8 miles		180	.044			2.02	4.53	6.55	8.05
cycle 10 miles		162	.049			2.25	5.05	7.30	8.95
30 MPH ave, cycle 4 miles		216	.037			1.69	3.78	5.47	6.70
cycle 6 miles		198	.040			1.84	4.12	5.96	7.30
cycle 8 miles		180	.044			2.02	4.53	6.55	8.05
cycle 10 miles		162	.049			2.25	5.05	7.30	8.95
35 MPH ave, cycle 4 miles		234	.034			1.56	3.49	5.05	6.20
cycle 6 miles		216	.037			1.69	3.78	5.47	6.70
cycle 8 miles		198	.040			1.84	4.12	5.96	7.30
cycle 10 miles		180	.044			2.02	4.53	6.55	8.05
cycle 20 miles		126	.063			2.89	6.45	9.34	11.45
cycle 30 miles		108	.074			3.37	7.55	10.92	13.40
cycle 40 miles		90	.089			4.05	9.05	13.10	16.05
40 MPH ave, cycle 6 miles		216	.037			1.69	3.78	5.47	6.70
cycle 8 miles		198	.040			1.84	4.12	5.96	7.30
cycle 10 miles		180	.044			2.02	4.53	6.55	8.05
cycle 20 miles		144	.056			2.53	5.65	8.18	10.05
cycle 30 miles		108	.074			3.37	7.55	10.92	13.40
cycle 40 miles		90	.089			4.05	9.05	13.10	16.05
cycle 50 miles		72	.111			5.05	11.35	16.40	20
45 MPH ave, cycle 8 miles		216	.037			1.69	3.78	5.47	6.70
cycle 10 miles		198	.040			1.84	4.12	5.96	7.30
cycle 20 miles		144	.056			2.53	5.65	8.18	10.05
cycle 30 miles		126	.063			2.89	6.45	9.34	11.45
cycle 40 miles		108	.074			3.37	7.55	10.92	13.40
cycle 50 miles		90	.089			4.05	9.05	13.10	16.05
50 MPH ave, cycle 10 miles		198	.040			1.84	4.12	5.96	7.30
cycle 20 miles		162	.049			2.25	5.05	7.30	8.95
cycle 30 miles		126	.063			2.89	6.45	9.34	11.45
cycle 40 miles		108	.074			3.37	7.55	10.92	13.40
cycle 50 miles		90	.089			4.05	9.05	13.10	16.05

Closure

2. Slope and Fill - Compaction

23.23 Compaction

0010	COMPACTON	B-10Y	3000	.004	E.C.Y.	.20	.20	.40	.52
5000	Riding, vibrating roller, 6" lifts, 2 passes		2300	.005		.25	.26	.51	.68
5020	3 passes		1900	.006		.31	.32	.63	.82
5040	4 passes		4100	.003		.14	.15	.29	.38
5050	8" lifts, 2 passes		5200	.002		.11	.12	.23	.30
5060	12" lifts, 2 passes		3500	.003		.17	.17	.34	.44
5080	3 passes		2600	.005		.23	.23	.46	.60
5100	4 passes	B-10G	2400	.005		.24	.54	.78	.96
5600	Sheepsfoot or wobbly wheel roller, 6" lifts, 2 passes		1735	.007		.34	.75	1.09	1.33
5620	3 passes		1300	.009		.45	1	1.45	1.78
5640	4 passes		5200	.002		.11	.25	.36	.44
5680	12" lifts, 2 passes		3500	.003		.17	.37	.54	.66
5700	3 passes		2600	.005		.23	.50	.73	.89
5720	4 passes	B-10D	10000	.001		.06	.18	.24	.29
6000	Towed sheepsfoot or wobbly wheel roller, 6" lifts, 2 passes		2000	.006		.29	.92	1.21	1.45
6020	3 passes		1500	.008		.39	1.22	1.61	1.94
6030	4 passes		6000	.002		.10	.31	.41	.49
6050	12" lifts, 2 passes								

Jason Gorrie

From: David Scherbaty <dscherbaty@comanco.com>
Sent: Wednesday, December 27, 2017 11:33 AM
To: Jason Gorrie
Subject: Pasco Co. LF Closure Budget Numbers
Attachments: Pasco Co. LF - Closure Budget.pdf

Jason,

It was great talking with you earlier. Per our conversation attached please find some closure budgetary numbers. These numbers assume that the site has an on-site borrow source for the fill below the geomembrane layer and cover material will need to be imported. Geosynthetics will be per the standard Subtitle D closure with a 40-Mil Textured LLDPE and a Geocomposite. Hopefully these numbers help, but please let me know if you need anything else.

Also, if you're around in early January I'd love to get together to discuss any upcoming opportunities that you all might be working on. Please just let me know what your availability is.

Thanks,
David



David Scherbaty | Director of Sales
COMANCO Environmental Corporation
4301 Sterling Commerce Drive | Plant City, FL 33566
Office: 813-988-8829 | Cell: 813-323-3584
E-mail: dscherbaty@comanco.com | web: www.comanco.com

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IV. ESTIMATED CLOSING COST (check what applies)

☐ Recalculated Cost Estimate

☐ New Facility Cost Estimate

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most exp

2. Cost estimate must be certified by a professional engineer.

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

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

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells (Do not include wells already in existence.)				
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY SY		1.00	
Placement and Spreading	CY		4.50	
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY		5.50	
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain)	SY		7.50	
Geocomposite				
			Subtotal Cover Material:	
4. Top Soil Cover:				
Off-Site Material	CY		10.00	
Delivery	CY		4.00	
Spread	CY		5.00	
			Subtotal Top Soil Cover:	
5. Vegetative Layer				
Sodding	SY		2.75	
Hydroseeding	AC			
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping	LF			
Ditches	LF			
Berms	LF			
Control Structures	EA			
Other (explain)				
			Subtotal Stormwater Control System:	

Prepared By: Candia E. Mulhern, Laboratory Manager
Pasco County Environmental Laboratory
Date: 2018 July 20

ANNUAL COST OF ANALYSIS FOR GWM AT West Pasco

SEMI-ANNUAL COSTS

Total Ammonia - N	\$13.00	26	\$338.00
Chlorides	\$6.00	26	\$156.00
Nitrate	\$7.00	26	\$182.00
TDS	\$7.00	26	\$182.00
Iron	\$10.00	26	\$260.00
Mercury	\$20.00	26	\$520.00
Sodium	\$10.00	26	\$260.00
40 CFR Pt. 258, APP I	\$110.00	26	\$2,860.00
*Mileage	\$0.575	492 miles	\$565.80
*Time	\$20.00	48 hours	\$1,920.00
Total Annual Cost			\$7,243.80

*Mileage and Sampling Time vary depending on environmental conditions. The hours and mileage are estimates.

Long Term Care

1. Groundwater Monitoring

Florida Jetclean - Jetclean America

7538 Dunbridge Drive
Odessa, FL 33556
800-226-8013

Invoice

Svc Date	Due Date	Invoice #
6/4/2018	7/4/2018	12989

Bill To
JMG Engineering, Inc. 238 E. Davis Blvd. Unit 206 Tampa FL 33606

Ship To
West Pasco Landfill Class II - Cells 1-4

P.O. No.	Terms	Project Information
Jason Gorrie	Net 30	LCS Pipe Jetclean

Date(s)	Description	Amount
6/4/18	High-pressure water-jetting of 4,540 LF of existing leachate collection pipe across 4 Class III Cells (12 Total Pipes), as instructed, and per approved proposal. *** Report Provided Separately To Jason Gorrie *** <i>Long Term Care S. Leachate Collection/Treatment Cleaning</i>	3,200.00

All work is complete!

Total**\$3,200.00**

- All major credit cards accepted with 4.5% processing fee.
- Please pay against invoice, no statement will be sent.

Closed East Pasco Landfill

	month	leachate generated (gallons)
2015	January-15	161,415
	February-15	124,940
	March-15	186,427
	April-15	147,190
	May-15	205,967
	June-15	192,449
	July-15	356,504
	August-15	198,297
	September-15	126,222
	October-15	193,969
	November-15	148,298
	December-15	141,520
2016	January-16	176,255
	February-16	152,873
	March-16	123,771
	April-16	111,976
	May-16	112,156
	June-16	294,597
	July-16	173,185
	August-16	251,315
	September-16	167,558
	October-16	108,194
	November-16	128,057
	December-16	109,913
2017	January-17	181,247
	February-17	132,662
	March-17	125,753
	April-17	64,413
	May-17	120,773
	June-17	67,979
	July-17	122,779
	August-17	183,196
	September-17	164,691
	October-17	99,420
	November-17	49,663
	December-17	66,996
	January-18	125,978
	February-18	78,849
	March-18	136,362

Long Term Care
Leachate Collection
Treatment
off site disposal

Monthly Average =	149,072
Extrapolated Annual Rate =	1,788,864.31

Jason Gorrie

From: Justin G. Roessler <jroessler@pascocountyfl.net>
Sent: Thursday, August 9, 2018 8:32 AM
To: Jason Gorrie; John Power
Subject: Leachate Costs for Class III

Our wastewater chargeback costs for leachate disposal at shady are \$4.04 per k gal.



Justin Roessler, Ph.D.

Assistant Solid Waste Director
Utilities-Solid Waste
Resource Recovery Facility

Pasco County

P 727-857-2780

F 727-861-3099

14230 Hays Rd.,

Spring Hill, FL 34610

jroessler@pascocountyfl.net

www.pascocountyfl.net

"Serving our community to create a better future."



"Bringing Opportunities Home"

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Long Term Care
S. Leachate Collection /
Treatment
Off-site disposal

A. SOLID WASTE FACILITIES:

Item No.	Description	BID ITEM COSTS							DID NOT ACKNOWLEDGE ADDENDUM 2
		RECEIVED SHEET 5	RECEIVED SHEET 6	RECEIVED SHEET 7	RECEIVED SHEET 8	RECEIVED SHEET 9	RECEIVED SHEET 10	RECEIVED SHEET 11	
1	East Point Cemetery Landfill 135.1 Acres Road Dade City Florida	\$ 20.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 24.00	\$ 20.00	\$ 20.00	
2	East Point Transfer Station 120.0 Acres Road Dade City Florida	\$ 20.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 24.00	\$ 20.00	\$ 20.00	
3	West Point Landfill 142.20 Acres Road Spring Hill Florida	\$ 20.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 24.00	\$ 20.00	\$ 20.00	
4	Approximately 100 Acres Redeveloped Landfill Countryside Acres of Sun Meigs Lane and Cabin Wilson Roadway Fort McCoy Florida	\$ 20.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 24.00	\$ 20.00	\$ 20.00	
5	Approximately 40 Acres	\$ 20.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 24.00	\$ 20.00	\$ 20.00	
SUB TOTAL OF A		\$ 80.00	\$ 40.00	\$ 80.00	\$ 80.00	\$ 96.00	\$ 80.00	\$ 80.00	

Long Term Care
 B. Landscape Maintenance
 Mowing

Withlacoochee River Electric - Average Billings

Long Term Care - Utilities

Locations	2011	2012	2013	2014	2015	2016	2017
EPSL-Office Scalehouse-Singletary	71.80	78.61	80.25	64.91	63.21	64.80	
Resource Recovery Lift Station	21.55	21.79	21.15	24.18	26.07	26.05	
Resource Recovery Scale House	225.30	208.38	165.49	177.29	176.17	207.23	
Class III Maintenance Bldg.	441.43	476.19	472.62	489.37	774.64	847.38	
Class III Scalehouse	216.55	199.92	232.22	275.26	251.27	225.73	
Handcart Road - EPTS	1,009.79	1,011.18	938.48	954.12	758.17	823.08	
Resource Recovery Well House	1,881.88	1,547.15	1,330.11	1,169.45	1,336.45	1,567.51	1,325.46
Leachate Tanks - SW1	123.93	133.92	123.65	147.22	170.51	180.62	111.43
Leachate Tanks - Ash Cell	104.94	94.93	116.28	137.17	75.69	81.01	63.35
Galen Wilson Blvd.	34.81	52.87	44.10	57.25	52.46	41.85	42.68
Auton Road - 4" Well	18.46	18.46	21.83	23.68	23.52	25.64	25.64
Hays Road - Lift Station - Class III	60.94	44.07	31.97	38.25	49.87	60.86	32.39
Hays Road - Lift Station - Class III	55.03	43.60	33.84	38.74	52.73	63.56	53.69
Auton Road - Leachate - Cell #5	-	-	-	-	-	0.00	0.00
MRF Building	-	45.49	413.68	336.06	271.04	0.00	0.00
MRF Trailer	0.00	45.49	64.78	93.93	42.55	25.64	27.52
A-2 Cell	19.11	19.16	19.18	24.52	26.28	26.37	26.37
Resource Recovery Compactors	84.63	70.10	28.83	49.03	0.00	0.00	0.00
Stormwater Pump SW2 (End: Dec 2009)	-	-	-	-	-	0.00	0.00
Stormwater Pump A3	-	-	-	-	-	0.00	0.00
RR- Tires	-	-	-	38.83	42.31	46.42	41.74
RR- Brush	-	-	-	40.52	46.05	54.52	50.05
A-4 Lift Station (Oct. 2010)	-	-	-	158.31	210.09	144.20	82.28
Landfill Equipment Barn (Oct. 2010)	-	-	-	42.69	26.47	26.47	26.57
Storage Trailer CL I (Nov. 2010)	-	-	-	23.85	25.64	25.64	25.64
Class 3 CDO (Dec. 2011)	-	-	-	24.77	26.59	26.57	26.57
W Scale A2 (Hays Rd.) (June 2012)	-	-	-	281.99	287.69	316.52	274.97
Hays W Scale (April 2012)	-	-	-	133.06	151.28	162.78	166.93
East Pasco Compactor 2 (June 2012)	-	-	-	174.85	163.75	179.39	191.85
East Pasco Compactor (Apr. 2012)	-	-	-	248.06	249.46	229.26	237.57
DC Well - EPTS (July 2013)	-	-	-	75.37	75.04	74.88	76.44
Recycling Station - 14230 Hays Rd (Start: Nov 2014)	-	-	-	-	377.45	413.45	411.05
TOTAL	6,381.16	6,123.30	6,151.45	7,356.71	7,847.45	7,983.43	