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3 April 2012

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

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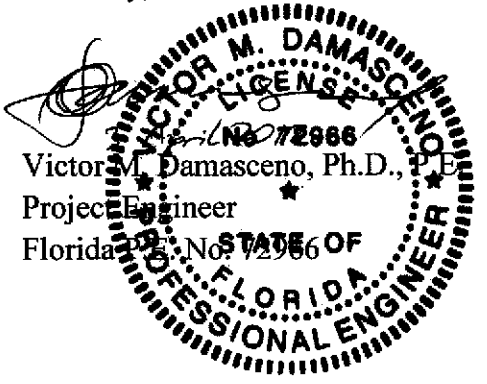
**Subject: Second Request for Additional Information**
**Renewal Permit Application to Operate**
**Phases 1 through 4 at the**
**J.E.D. Solid Waste Management Facility (WACS #89544)**
**Osceola County, Florida**
**Permit Application No. SO49-0199726-022**

Dear Mr. Lubozynski:

Transmitted herewith are four copies of the response to the second request for additional information (RAI) associated with the Renewal Permit Application to Operate Phases 1 through 4 of the J.E.D. Solid Waste Management Facility, located in St. Cloud, Florida. The responses have been prepared and/or compiled by Geosyntec Consultants (Geosyntec) on behalf of Omni Waste of Osceola County, LLC (Omni), a wholly owned subsidiary of Waste Services, Inc. (WSI).

If you or your staff have any questions or need additional information, please feel free to contact the undersigned.

Sincerely,




Victor M. Damasceno, Ph.D., P.E.
Project Engineer
Florida P.E. No. 72966

Copies to: Michael Kaiser, Waste Services Inc. (WSI)
Transmittal_JED 2012 Permit Renewal_RAI02.doc

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3 April 2012



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

Subject: Response to Second Request for Additional Information dated 5 March 2012
J.E.D. Solid Waste Management Facility (WACS #89544)
Class I – Operations Permit Renewal
Osceola County, Florida
(Permit Application No. SC49-0199726-022)

Dear Mr. Lubozynski:

On behalf of Omni Waste of Osceola County, LLC (Omni), Geosyntec Consultants (Geosyntec) has prepared this letter to respond to the Florida Department of Environmental Protection's (FDEP's) second request for additional information (RAI) regarding the Renewal Permit Application to Operate Phases 1 through 4 of the J.E.D. Solid Waste Management Facility (facility), located in St. Cloud, Florida. The permit renewal application was received by FDEP on 10 November 2011 and is referred to in this letter as "Report." This RAI was addressed to Mr. Mike Kaiser of Omni in a letter dated 5 March 2012. This RAI response addresses FDEP's comments 10 and 11.c.

Each FDEP comment has been provided below in italic font followed by the corresponding response in normal font. In this response, deletions to the original document have been shown with a strikethrough and additions have been shown with an underline.

## ARTICLE I. RESPONSE TO FDEP COMMENTS

### *(a) FDEP Comment #10*

*10. The Department has reviewed the detailed cost estimate for Cells 1 through 8, Attachment 5 of the submittal and has the following comments and questions.*

*a. In section IV Estimating Closing Costs, include the closure cost for the waste tire processing facility in item 13. Site Specific Costs.*

*b. In section IV Estimating Closing Costs, include the closure cost of the auto fluff recycler in item 13. Site Specific Costs.*

c. *A 5% contingency was included in both the closure cost and long-term care cost. The Department accepts a contingency of 10% without justification. Provide justification for the lower contingency of 5%.*

d. *In section V Annual Cost for Long-Term Care, item 5 Leachate Collection/Treatment Systems Maintenance, Disposal, the estimated quantity of leachate generated during long-term care is given as 4,000 gallons per year for 74 acres of closed Class I landfill. This estimate seems low. Upon review of the provided cost estimate supporting data, the rate of 184.3 gal/ac/yr is considerably lower than 20% of historically reported generation rates for the site. For reference, the Department has accepted estimated quantities of leachate generated from closed Class I landfills in the range of 26,000,000 gallons per year for 147 acres (176,871 gal/ac/yr) and 10,128,000 gallons per year for 115 acres (88,070 gal/ac/yr). Please reevaluate the estimated amount of leachate which will be generated during the long-term care period. Provide the basis for the values offered. (For example, why was "20 percent of the annual average leachate generation rate for the maximum waste height" considered an appropriate value?)*

e. *In section V Annual Cost for Long-Term Care, item 5 Leachate Collection/Treatment Systems Maintenance, Disposal, the cost for the annual transportation and disposal of 4,000 gallons of leachate is estimated to be $160/yr. This estimate seems low. The 3/12/2009 e-mail from the city of St. Cloud stated how to calculate a monthly disposal bill. Using your estimate of 4,000 gal/year and their method, the monthly cost would be about $108. This would be an annual disposal cost of $1,296. Based upon phone conversations with you, the Department understands that this monthly rate calculation may not be applicable when disposing of leachate on a yearly basis. Also, as stated in "d" above, the Department considers the 4,000 gal/year estimate to be too low. Please reevaluate the estimated cost for the disposal of leachate based on your answer to "d' above.*

**Response # 10:**

a. In February 2010 the FDEP approved a closure cost estimate of $37,700.00 for the newly permitted waste tire storage and processing area. An annual inflation factor of 1.01 has been applied to this estimate for years 2011 and 2012 to account for the inflation adjustment issued by the FDEP. A new cost estimate of $38,457.77 has been included in Item 13, Site Specific Costs of the FDEP Financial Assurance form.

b. In February 2010 the FDEP approved a closure cost estimate of $40,000.00 for the auto shredder recycling operations. An annual inflation factor of 1.01 has been applied to this

estimate for years 2011 and 2012. A new cost estimate of $40,804.00 has been included in Item 13, Site Specific Costs of the FDEP Financial Assurance form.

c. Omni believes the cost estimates presented herein reflect an accurate estimate of closure costs due to the detailed breakdown of the scope of work and use of real project construction cost unit rates that are not older than 3 months. However for ease of review and approval, Omni has increased the contingency to 10% in the FDEP Financial Assurance form.

d. The leachate generated during long-term care, provided in Section V – Annual Cost for Long-Term Care (item 5 Leachate Collection/Treatment Systems Maintenance), has been revised. An average leachate generation rate equal to 8,394.53 gal/ac/year has been estimated. A detailed leachate generation rate analysis is presented as part of the Financial Assurance Notes provided as part of Attachment 1 of this response. Section V of the FDEP Financial Assurance form has been updated accordingly.

e. The estimated cost for the disposal of leachate has been revised and updated as stated in Response "d" above.

**ARTICLE II. WATER QUALITY RELATED ITEMS**

***(a) FDEP Comment #11.c***

*11. The response indicated that the value of 12 ug/L (I) for Mercury in MW-19A in the May 2011 sampling event was a clerical error at the lab. A copy of the revised report was included in the response to the RAI. However, the incorrect value of 12 ug/L is still the result of record in the Department's WACS data base. Please submit the revised version of all May 2011 lab results in ADaPT format to Tallahassee to be uploaded to the WACS data base.*

**Response # 11.c:**

Omni has submitted the revised version of all May 2011 lab results in ADaPT format to the FDEP Tallahassee and Central District offices under separate cover.

**CLOSURE**

If you have any questions or require additional information, please do not hesitate to contact Mr. Mike Kaiser of Waste Services, Inc. at (904) 673-0446, mkaiser@wsii.us, or the undersigned at (813) 558-0990.

Sincerely,

John A. Banks, P.E.
Associate

Victor M. Damasceno, Ph.D., P.E.
Project Engineer
P.E. Number 72966

VICTOR M. DAMASCENO LICENSE No 72966 STATE OF FLORIDA PROFESSIONAL ENGINEER

Attachments

Copies to: Michael Kaiser, WSI

# ATTACHMENT 1

Revised Financial Assurance Cost Estimate for Closure of Cells 1 through 8

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: J.E.D. Solid Waste Management Facility WACS ID: 89544

Permit Application or Consent Order No.: SC49 & SO49-199726-017 & 005 Expiration Date: 8/16/2016 -1/11/2012

Facility Address: 1501 Omni Way, Saint Cloud, Florida 34773

Permittee or Owner/Operator: Omni Waste of Osceola County, LLC (a wholly owned subsidiary of WSI, Inc.)

Mailing Address: 1501 Omni Way, Saint Cloud, Florida 34773

Latitude: 28 ° 03 ' 32 " Longitude: 81 ° 05 ' 46 "

Coordinate Method: DGPS Datum: WGS84

Collected by: Johnston's Surveying Company/Affiliation: Johnston's Surveying

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/Cells 1-4 | 27.9 | Jan 2004 | 4 to 8 years | 1 to 2 years | | |
| Phase 2/Cells 5-7 | 35.7 | Mar 2009 | 3 to 6 years | 1 to 2 years | | |
| Phase 3/Cell 8 | 11.3 | N/A | 1 to 2 years | 1 to 2 years | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Total disposal unit acreage included in this estimate: Closure: 74.9 Long-Term Care: 100

Note: The disposal unit acreage of 11.9 acres represents the two-dimensional area. The three-dimensional area - used in the calculations - is equal to 12.3 acres.

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

## III. ESTIMATE ADJUSTMENT

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

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

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

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

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

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

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

Number of Years of Long Term Care Remaining: × _____

**Inflation Adjusted Long-Term Care Cost Estimate:** = _____

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

| | |
|---|---|
| _____ Signature | _____ Address |
| _____ Name & Title | _____ City, State, Zip Code |
| _____ Date | _____ E-Mail Address |
| _____ Telephone Number | |

## IV. ESTIMATED CLOSING COST (check what applies)

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

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

| Description | Unit | Number of Units | Cost / Unit | Total Cost |
|---|---|---|---|---|
| **1. Proposed Monitoring Wells** | **(Do not include wells already in existence.)** | | | |
| | EA | | | |
| | | | Subtotal Proposed Monitoring Wells: | |
| **2. Slope and Fill (bedding layer between waste and barrier layer):** | | | | |
| Excavation | CY | | | |
| Placement and Spreading | CY | 126,243 | $4.51 | $569,355.93 |
| Compaction | CY | | | |
| Off-Site Material | CY | | | |
| Delivery | CY | | | |
| | | | Subtotal Slope and Fill: | $569,355.93 |
| **3. Cover Material (Barrier Layer):** | | | | |
| Off-Site Clay | CY | | | |
| Synthetics - 40 mil | SY | 378,730 | $3.51 | $1,329,342.30 |
| Synthetics - GCL | SY | | | |
| Synthetics - Geonet | SY | | | |
| Synthetics - Other (explain) | SY | 333,476 | $3.87 | $1,290,552.12 |
| Geocomposite Drainage Layer | | | Subtotal Cover Material: | $2,619,894.42 |
| **4. Top Soil Cover:** | | | | |
| Off-Site Material | CY | | | |
| Delivery | CY | | | |
| Spread | CY | 189,365 | $4.54 | $859,717.10 |
| | | | Subtotal Top Soil Cover: | $859,717.10 |
| **5. Vegetative Layer** | | | | |
| Sodding | SY | 378,730 | $1.23 | $465,837.90 |
| Hydroseeding | AC | | | |
| Fertilizer | AC | 78.25 | $1,562.00 | $122,226.50 |
| Mulch | AC | | | |
| Other (explain) | SY | 63,121.7 | $4.54 | $286,572.52 |
| Vegetative soil cover (6-in thick layer) | | | Subtotal Vegetative Layer: | $874,636.92 |
| **6. Stormwater Control System:** | | | | |
| Earthwork | CY | 23,884 | $4.54 | $108,433.36 |
| Grading | SY | | | |
| Piping | LF | 37,250 | $10.83 | $403,417.50 |
| Ditches | LF | | | |
| Berms | LF | | | |
| Control Structures | EA | | | |
| Other (explain) "Wye" connection | EA | 72 | $2,246.56 | $161,752.32 |
| inlet structures | | | Subtotal Stormwater Control System: | $673,603.18 |

| Description | Unit | Number of Units | Cost / Unit | Total Cost |
|---|---|---|---|---|
| **7. Passive Gas Control:** | | | | |
| Wells | EA | 41 | $8,775.19 | $359,782.79 |
| Pipe and Fittings | LF | 14,507 | $48.57 | $704,604.99 |
| Monitoring Probes | EA | | | |
| NSPS/Title V requirements | LS | 1 | | |
| | | | Subtotal Passive Gas Control: | $1,064,387.78 |
| **8. Active Gas Extraction Control:** | | | | |
| Traps | EA | 2 | $6,700.00 | $13,400.00 |
| Sumps | EA | | | |
| Flare Assembly | EA | | | |
| Flame Arrestor | EA | | | |
| Mist Eliminator | EA | | | |
| Flow Meter | EA | | | |
| Blowers | EA | | | |
| Collection System | LF | | | |
| Other (explain) gas flare station | EA | 1 | $318,970.79 | $318,970.79 |
| | | | Subtotal Active Gas Extraction Control: | $332,370.79 |
| **9. Security System:** | | | | |
| Fencing | LF | | | |
| Gate(s) | EA | | | |
| Sign(s) | EA | | | |
| | | | Subtotal Security System: | |
| **10. Engineering:** | | | | |
| Closure Plan Report | LS | 1 | $15,000.00 | $15,000.00 |
| Certified Engineering Drawings | LS | 1 | | |
| NSPS/Title V Air Permit | LS | 1 | | |
| Final Survey | LS | 1 | $136,937.50 | $136,937.50 |
| Certification of Closure | LS | 1 | $10,000.00 | $10,000.00 |
| Other (explain) | | | | |
| | | | Subtotal Engineering: | $161,937.50 |

| Description | Hours | Cost / Hour | Hours | Cost / Hour | Total Cost |
|---|---|---|---|---|---|
| **11. Professional Services** | Contract Management | | Quality Assurance | | |
| P.E. Supervisor | | | | | |
| On-Site Engineer | | | | | |
| Office Engineer | | | | | |
| On-Site Technician | | | | | |
| Other (explain) | 1 | $214,67 $214,677 | 1 | $500,9 $500,913 | $715,590.00 |

| Description | Unit | Number of Units | Cost / Unit | Total Cost |
|---|---|---|---|---|
| Quality Assurance Testing | LS | 1 | $50,091.30 | $50,091.30 |
| | | | Subtotal Professional Services: | $765,681.30 |

| | | | |
|---|---|---|---|
| | | **Subtotal of 1-11 Above:** | $7,921,584.92 |
| **12. Contingency** | 10 % of Subtotal of 1-11 Above | | $792,158.49 |
| | | Subtotal Contingency: | $792,158.49 |
| | | **Estimated Closing Cost Subtotal:** | $8,713,743.41 |

| Description | | Total Cost |
|---|---|---|
| **13. Site Specific Costs** | | |
| Mobilization | | |
| Waste Tire Facility (Closure) | | $38,457.77 |
| Materials Recovery Facility (Auto Fluff Recycler) | | $40,804.00 |
| Special Wastes | | |
| Leachate Management System Modification | | |
| Other (explain) see financial assurance notes | | $748,735.13 |
| | Subtotal Site Specific Costs: | $827,996.90 |

**TOTAL ESTIMATED CLOSING COSTS ($):** $9,541,740.31

## 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 | 33 | $772.73 | $51,000.18 |
| Annually | 1 | | | |
| | | | Subtotal Groundwater Monitoring: | $51,000.18 |
| **2. Surface Water Monitoring [62-701.510(4), and (8)(b)]** | | | | |
| Monthly | 12 | | | |
| Quarterly | 4 | | | |
| Semi-Annually | 2 | 2 | $325.00 | $1,300.00 |
| Annually | 1 | | | |
| | | | Subtotal Surface Water Monitoring: | $1,300.00 |
| **3. Gas Monitoring [62-701.400(10)]** | | | | |
| Monthly | 12 | | | |
| Quarterly | 4 | 1 | $670.00 | $2,680.00 |
| Semi-Annually | 2 | 1 | $7,500.00 | $15,000.00 |
| Annually | 1 | 1 | $12,700.00 | $12,700.00 |
| | | | Subtotal Gas Monitoring: | $30,380.00 |
| **4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]** | | | | |
| Monthly | 12 | | | |
| Quarterly | 4 | | | |
| Semi-Annually | 2 | | | |
| Annually | 1 | 8 | $926.00 | $7,408.00 |
| Other (explain) Leachate ponds | 1 | 1 | $1,050.00 | $1,050.00 |
| | | | Subtotal Leachate Monitoring: | $8,458.00 |

| Description | Unit | Number of Units / Year | Cost / Unit | Annual Cost |
|---|---|---|---|---|
| **5. Leachate Collection/Treatment Systems Maintenance** | | | | |
| Maintenance | | | | |
| Collection Pipes | LF | | | |
| Sumps, Traps | EA | 8 | $858.63 | $6,869.04 |
| Lift Stations | EA | | | |
| Cleaning | LS | 1 | $926.66 | $926.66 |
| Tanks | EA | | | |

| Description | Unit | Number of Units / Year | Cost / Unit | Annual Cost |
|---|---|---|---|---|
| **5. (continued)** | | | | |
| Impoundments | | | | |
| Liner Repair | SY | 371 | $3.54 | $1,313.34 |
| Sludge Removal | CY | | | |
| Aeration Systems | | | | |
| Floating Aerators | EA | 1 | $250.00 | $250.00 |
| Spray Aerators | EA | | | |
| Disposal | | | | |
| Off-site (Includes transportation and disposal) | 1000 gallon | 840 | $40.00 | $33,600.00 |
| | | | Subtotal Leachate Collection / Treatment Systems Maintenance: | $42,959.04 |
| **6. Groundwater Monitoring Well Maintenance** | | | | |
| Monitoring Wells | LF | | | |
| Replacement | EA | 3 | $130.94 | $392.82 |
| Abandonment | EA | 3 | $29.11 | $87.33 |
| | | | Subtotal Groundwater Monitoring Well Maintenance: | $480.15 |
| **7. Gas System Maintenance** | | | | |
| Piping, Vents | LF | 50 | $50.00 | $2,500.00 |
| Blowers | EA | 1 | $2,500.00 | $2,500.00 |
| Flaring Units | EA | | | |
| Meters, Valves | EA | | | |
| Compressors | EA | | | |
| Flame Arrestors | EA | | | |
| Operation | LS | 1 | $5,800.00 | $5,800.00 |
| | | | Subtotal Gas System Maintenance: | $10,800.00 |
| **8. Landscape Maintenance** | | | | |
| Mowing | AC | 100 | $240.00 | $24,000.00 |
| Fertilizer | AC | | | |
| | | | Subtotal Landscape Maintenance: | $24,000.00 |
| **9. Erosion Control and Cover Maintenance** | | | | |
| Sodding | SY | 1,210 | $1.23 | $1,488.30 |
| Regrading | AC | | | |
| Liner Repair | SY | 1 | $2,500.00 | $2,500.00 |
| Clay | CY | | | |
| | | | Subtotal Erosion Control and Cover Maintenance: | $3,988.30 |
| **10. Storm Water Management System Maintenance** | | | | |
| Conveyance Maintenance | LS | 1 | $2,500.00 | $2,500.00 |
| | | | Subtotal Storm Water Management System Maintenance: | $2,500.00 |
| **11. Security System Maintenance** | | | | |
| Fences | LS | 1 | $350.00 | $350.00 |
| Gate(s) | EA | 1 | $250.00 | $250.00 |
| Sign(s) | EA | 1 | $20.00 | $20.00 |
| | | | Subtotal Security System Maintenance: | $620.00 |

| Description | Unit | Number of Units / Year | Cost / Unit | Annual Cost |
|---|---|---|---|---|
| **12. Utilities** | LS | 1 | $77,105.96 | $77,105.96 |
| | | | Subtotal Utilities: | $77,105.96 |
| **13. Leachate Collection/Treatment Systems Operation** | | | | |
| Operation | | | | |
| P.E. Supervisor | HR | | | |
| On-Site Engineer | HR | | | |
| Office Engineer | HR | | | |
| OnSite Technician | HR | 156 | $60.00 | $9,360.00 |
| Materials | LS | 1 | $500.00 | $500.00 |
| | Subtotal Leachate Collection/Treatment Systems Operation: | | | $9,860.00 |
| **14. Administrative** | | | | |
| P.E. Supervisor | HR | 8 | $150.00 | $1,200.00 |
| On-Site Engineer | HR | 8 | $120.00 | $960.00 |
| Office Engineer | HR | | | |
| OnSite Technician | HR | 8 | $65.00 | $520.00 |
| Other Administrative/overhead | LS | 1 | $9,600.00 | $9,600.00 |
| | | | Subtotal Administrative: | $12,280.00 |
| | | | **Subtotal of 1-14 Above:** | $275,731.63 |
| **15. Contingency** | 10 | % of Subtotal of 1-14 Above | | $27,573.16 |
| | | | Subtotal Contingency: | $27,573.16 |

| Description | Unit | Number of Units / Year | Cost / Unit | Annual Cost |
|---|---|---|---|---|
| **16. Site Specific Costs** | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | Subtotal Site Specific Costs: | |
| | | | **ANNUAL LONG-TERM CARE COST ($ / YEAR):** | $303,304.79 |
| | | | Number of Years of Long-Term Care: | 30 |
| | | | **TOTAL LONG-TERM CARE COST ($):** | $9,099,143.79 |

## 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

Victor M. Damasceno, Engineer
Name and Title (please type)

April 2012
Date

VICTOR M. DAMASCENO — No 72968 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Florida Registration Number
(please affix seal)

13101 Telecom Drive, Suite 120
Mailing Address

Temple Terrace, Florida 33637
City, State, Zip Code

VDamasceno@Geosyntec.com
E-Mail address (if available)

813-558-0990
Telephone Number

## VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant

Mike Kaiser, Regional Engineer
Name and Title (please type)

MKaiser@Wasteservicesinc.com
E-Mail address (if available)

1501 Omni Way
Mailing Address

Saint Cloud, Florida 34773
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January 24, 2011

RE: Omni Waste of Osceola County, LLC

To Whom It May Concern:

This is to confirm that Michael Kaiser is an authorized signatory of Omni Waste of Osceola County, LLC (the "Corporation"), with authority to execute and deliver all documents and instruments required in connection with environmental matters for the Corporation, including without limitation, permit applications, modifications and financial assurances for permits issued to the Corporation.

**Omni Waste of Osceola County, LLC**

William P. Hulligan
Manager

**Waste Services, Inc.**

William P. Hulligan
Executive Vice President, U.S. Operations

# FINANCIAL ASSURANCE COST ESTIMATE FOR CLOSURE OF CELLS 1-8: NOTES AND CALCULATIONS J.E.D. SOLID WASTE MANAGEMENT FACILITY

The information provided below presents the methods and assumptions used to estimate the cost for the items listed on the Florida Department of Environmental Protection (FDEP) Form 62-701.900(28), F.A.C., "*Closure Cost Estimating Form for Solid Waste Facilities*" (January 6, 2010). The section numbers noted below correspond to the item numbers on FDEP Form 62-701.900(28), F.A.C. The original and closed two-dimensional areas for each Cell are as follows:

| Cell | Original Area | Area Closed | Remaining Area to be Closed |
|---|---|---|---|
| Cell 1 | 18 | 10.2 | 7.8 |
| Cell 2 | 12 | 7.2 | 4.8 |
| Cell 3 | 12 | 3.7 | 8.3 |
| Cell 4 | 11 | 4.0 | 7.0 |
| Cell 5 | 11.2 | 0 | 11.2 |
| Cell 6 | 12.5 | 0 | 12.5 |
| Cell 7 | 12 | 0 | 12 |
| Cell 8 | 11.3 | 0 | 11.3 |
| **Totals** | **100** | **25.1** | **74.9** |

## I. GENERAL INFORMATION

The financial assurance cost estimate presented on the FDEP Form 62-701.900(28) provides the closure and long-term care costs for Cells 1-8 at the J.E.D. Solid Waste Management facility in Osceola County, Florida. The closure and long-term care costs were estimated using unit cost rates from 3rd party contractors that have recently, or are presently, performing work at the facility and/or previous FDEP approved unit cost rates with inflation adjustments issued by the FDEP for years 2010, 2011 and 2012. Provided in Appendix A-1 are 3rd party bid/contract documents from contractors and suppliers who submitted bid quotes for the partial closure project that is planned to start mid February 2012. These parties included RCS Excavation (RCS) - earthworks, Comanco Construction Corporation - geosynthetics installation, Agru America – geomemrane supply, and Skaps Industries – geocomposite supply.

The unit cost rates for placement of intermediate, protective cover and vegetative soils shown on the earthworks bidsheet by RCS were based on excavation and hauling of soils RCS from the offsite 3rd party Bronson borrow area located directly west of the permitted disposal area. Omni has executed an agreement with the Bronson borrow area owners (Bronsons) for purchase of the soils from the offsite borrow area. Environmental Resource and Water Use

Permits were issued to the Bronsons by the South Florida Water Management District for operation of the borrow area.

Based on the e-mail correspondence provided in Appendix A-1 from Kimley-Horn and Associates dated April 7, 2011, approximately 6,277,128 cubic yards of soil was available at the borrow area as of April 2011. This remaining volume is sufficient to complete the closure construction described herein. As provided in the agreement between Omni and the Bronsons, Omni is required to make future remaining payments for the soils totaling $1,700,000 through 2016. Thus the unit cost rate for purchase of soil to complete closure construction is included in the estimates at $0.27/cubic yard ($1,700,000/6,277,128 $yd^3$). The agreement between Omni and the Bronsons is available at the JED facility for FDEP review.

## IV. ESTIMATED CLOSING COST

### 1. Proposed Monitoring Wells

The groundwater monitoring well system for Phases 1 through 3 (Cells 1 through 10) has already been completed. Therefore, no costs have been included as part of this financial assurance revision.

### 2. Slope and Fill (Bedding layer/Intermediate Cover)

Soils purchased and transported from the offsite Bronson borrow area will be used for intermediate cover. The total estimated volume is 126,243 cubic yards ($yd^3$) for the 1-ft thick intermediate cover layer over the waste surface. The cost per $yd^3$ includes purchase, excavation, hauling, placement, spreading, grading, and compaction. The estimated cost for slope and fill material is as follows:

As presented in Figure 1, the two-dimensional top deck area for Cells 1 through 8 covers approximately 9.35 acres and the 3:1 side slope area is equal to 90.65 acres resulting in a total area of approximately 100 acres. However, 25.1 acres along the side slopes of Phases 1 and 2 have been closed, as such, the total side slope area to be closed is equal to approximately 65.6 acres. To account for the additional area attributed to the 3:1 side slopes the plan areas are multiplied by 1.05. Therefore, the 3:1 side slope area is 65.6 acres × 1.05 = 68.9 acres plus the 9.35 acre top deck area equals a total corrected area of approximately **78.25 acres**.

- (78.25 acres × 43,560 $ft^2$/acre × 1 ft cover thickness) ÷ 27 $ft^3$/ $yd^3$ = 126,243 $yd^3$
- 126,243 $yd^3$ @ ($4.24/$yd^3$ + $0.27/$yd^3$) = **$569,355.93**

### 3. Cover Material (Barrier Layer)

The final cover system for the JED facility is comprised of (from bottom to top):

- 12 inch intermediate cover soil layer (Item No.2 above)
- 40-mil PE geomembrane
- geocomposite drainage layer (on 3:1 side slopes only)
- 18-inch cover protective soil layer (Item No. 4 below)

- 6-inch vegetative soil layer (Item No. 5 below)

Cost for geosynthetics includes material and installation costs. The estimated quantities are:

40-mil geomembrane (textured sideslopes and smooth top-deck):

Textured on Sideslopes (Purchase \$2.25/yd$^2$ & Install \$1.29/yd$^2$):

- 68.90 acres × 43,560 ft$^2$/acre ÷ 9 ft2/yd$^2$ = 333,476 yd$^2$
- 333,476 yd$^2$ 40-mil textured geomembrane @ \$3.54/yd$^2$ = \$1,180,505.04

Smooth on Top Deck (Purchase \$1.98/yd$^2$ & Install \$1.29/yd$^2$)

- 9.35 acres × 43,560 ft$^2$/acre ÷ 9 ft$^2$/yd$^2$ = 45,254 yd$^2$
- 45,254 yd$^2$ 40-mil smooth geomembrane @ \$3.27/yd$^2$ = \$147,980.58

To calculate the average cost for 40-mil geomembrane for the FDEP form, the total cost to purchase and install was divided by the total area installed:

- (\$1,180,505.04 + \$147,980.58) ÷ (333,476 yd$^2$ + 45,254 yd$^2$) = \$3.51/yd$^2$
- Total average cost 40-mil geomembrane = \$3.51/yd$^2$ × 378,730 yd$^2$ = **\$1,329,342.30**

Geocomposite Drainage Layer (on 3:1 side slopes only):

Geocomposite (Purchase \$3.15/yd$^2$ & \$0.72/yd$^2$):

- 78.25 acres – 9.35 acres (top deck) = 68.9 acres
- 68.9 acres × 43,560 ft$^2$/acre ÷ 9 ft$^2$/yd$^2$ = 333,476 yd$^2$
- 333,476 yd$^2$ geocomposite drainage layer @ \$3.87/yd$^2$ = **\$1,290,552.12**

The total cost for final cover materials (excluding the intermediate and vegetative soil layers) is **\$2,619,894.42.**

### 4. Top Soil Cover (Protective Cover Layer)

Soils purchased and transported from the offsite Bronson borrow area will be used for the protective cover. Cost for the 18-inch cover protective soil layer includes purchase, excavation, hauling, placement, spreading, grading, and compaction.

- (78.25 acres × 43,560 ft$^2$/acre × 1.5 ft cover thickness) ÷ 27 ft$^3$/yd$^3$ = 189,365 yd$^3$
- 189,365 yd$^3$ cover soils @ (\$4.27/ yd$^3$ + \$0.27/yd$^3$) = **\$859,717.10**

### 5. Vegetative Layer

The vegetative soil layer consists of a 6 inch layer over the protective cover layer. The estimated volume is 63,121.7 yd$^3$. Soils purchased and transported from the offsite Bronson borrow area will be used for the vegetative layer. The cost per cubic yard includes hauling, placing, spreading, and grading.

The final cover area will be sodded. Sodding costs include all labor and materials.

- 78.25 acres × 43,560 ft$^2$/acre ÷ 9 ft2/yd$^2$ = 378,730 yd$^2$
- 378,730 yd$^2$ Bahia sod @ \$1.23/yd$^2$ = **\$465,837.90**

Fertilizer (Amendments) for the vegetative soil layer is $1,040.50 per acre.

- 78.25 acres × $1,562.00/acre = **$122,226.50**

The estimated cost for the vegetative soil layer is as follows:

- (78.25 acres × 43,560 $ft^2$/acre × 0.5 ft cover thickness) ÷ 27 $ft^3/yd^3$ = 63,121.7 $yd^3$
- 63,121.7 $yd^3$ @ ($4.27/ $yd^3$ + $0.27/$yd^3$) = **$286,572.52**

The total cost for the vegetative layer (vegetative soil cover and sod) is **$874,636.92**

**6. Storm Water Control System**

Storm water control components that will be installed during closure consist of side slope drainage swales, inlet structures on the side slope bench swales, seepage header piping, and HDPE corrugated down chute pipes. The earthwork estimate includes excavation, hauling, placement, spreading, grading, and compaction of the additional soils required on the drainage benches for sloping and cover over the down chute piping.

Using the adjusted unit rates on the Worksheet – Earthworks provided in Appendix A-1, the total cost for the storm water control system is estimated to be **$673,603.18** as indicated below.

- Earthwork: Additional soil to construct drainage swales is calculated based on the typical cross-section detail for the drainage swale from the ERP Lateral Expansion Permit Drawings and using the average depth of the swale = 20.6 $ft^2$ per linear foot of swale and placement cost for protective cover soils:
  - 23,884 $yd^3$ @ ($4.27/$yd^3$ + $0.27/$yd^3$) = **$108,433.36**
- Piping (material and installation):
  - 31,900 ft of 4-inch HDPE corrugated pipe @ $7.77/ft = $247,863.00 (the cost of the 4-inch drainage pipe includes the cost of the pipe and installation (RCS @ $6.77/ft), 3-ft wide strip of geomembrane used to wrap the pipe (Agru @ $1.00/ft material and cost to cut estimated).
  - 4,600 ft of 18-inch HDPE corrugated pipe @ $28.27/ft = $130,042.00
  - 750 ft of 24-inch HDPE corrugated pipe @ $34.16/ft = $25,620.00

  Additional material cost for 24-inch pipe is $6.89/ft. See ADS invoices in Appendix A-1 showing cost difference (no increase in labor and equipment cost to install). Lengths of 18 and 24-inch pipe represent plan dimensions with 10% slope and bench correction applied. All concrete drainage inlets and outfall piping at the perimeter road are installed during Cell construction. See Figure 1 provided in Appendix A-1.

  To calculate an average cost per foot of pipe for the FDEP form, the total pipe cost above has been divided by the total length of pipe to be installed:

  - ($247,863.00 + $130,042.00 + $25,620.00) ÷ (31,900 ft + 4,600 ft + 750 ft) = **$10.83/ft**

- A concrete pad and grate will be installed with each "wye" connection – which joins the bench swale pipes to the main side slope downchute – to hold the piping in place and reduce erosion. Seventy-two (72) concrete pads remain to be installed in Cells 1-8 as shown on Figure 1 provided in Appendix A-1. Each concrete pad will be 6-inches thick with dimensions of approximately 7.5-ft x 7.5-ft and fitted with a galvanized grate. The cost to install all fittings, concrete and grates is: 72 structures × $2,246.56 = **$161,752.32**

**7. Passive Gas Control**

The JED facility has an active gas collection and control system (GCCS) within the Phase 1 and 2 development areas (i.e., Cells 1-7), which will be expanded with the closure and development of subsequent cells. The costs associated with the installation of the passive gas control elements were calculated utilizing the proposed GCCS design as provided in the Lateral Expansion Solid Waste Permit Drawings (Sheet 29 of 40). Costs include materials and installation. Presently, with the exception of gas extraction well GW-31, all header and lateral piping and gas extraction wells have been installed in Cells 1-4. Additional header and lateral piping and gas extraction wells have been installed in Cells 5 and 6 and the lower tier (2 total) horizontal gas collectors in Cell 7. Shown on Figure 2 in Appendix A-2 is an outline of the area depicting the remaining GCCS that would require installation under current closer of Cells 1-8. In addition to the GCCS shown on Figure 2, two (2) additional horizontal collectors will be required in Cell 7 and four (4) total in Cell 8. The gas extraction wells have been categorized as Shallow (<50 ft), Intermediate (50-100 ft), and Deep (100-150 ft). For estimating purposes the well depths have been assumed as 50, 100 and 150 ft of which 15 ft is solid well casing and the remainder is perforated zone casing.

Provided in Appendix A-2 are bid quotes from Shaw Environmental for recent vertical and horizontal gas collector well installation work completed in December 2011 and installation of the landfill gas flare in the fall of 2008. The unit rates shown in the bid quotes have been used in the calculations below. A 2012 inflation adjustment was not added to the 2011 unit rates from Shaw Environmental since this work was just recently completed.

Gas Wells [drilling, perforated pipe section (including gravel), solid pipe section (including soil backfill), and well head]: Drilling @ $28.00/ft, perforated pipe section @ $57.00/ft, solid pipe section @ $42.50/ft, and well heads @ $700.00 each.

- 16-Shallow depth gas wells @ $4,732.50/gas well = **$75,720.00**
- 11–Intermediate depth gas wells @ $8,982.50/gas well = **$98,807.50**
- 14–Deep gas wells @ $13,232.50/gas well = **$185,255.00**

To calculate an average cost per gas well for the FDEP form, the total well costs above have been divided by the proposed number of gas wells:

- ($75,720.00 + $98,807.50 + 185,255.00) ÷ 41 wells = **$8,775.19** per well

Lateral piping (6-inch SDR-17 HDPE Pipe):

The total plan dimension length for 6-inch lateral pipe has been increased by 10% to allow for a 3:1 slope correction factor and additional length required for vertical risers to connect to the adjacent extraction well.

- 6,350 ft × 1.10 = 6,985 ft @ $20.00/ft = **$139,700.00**

Header piping (12-inch SDR-17 HDPE Pipe):

The total plan dimension length of 12-inch header pipe has been increased by 10% to allow for varying bury depths to meet the required minimum 5% slope (sideslope areas) and a 3:1 slope correction for the cross over header.

- 2,320 ft × 1.10 = 2,552 ft @ $42.00/ft = **$107,184.00**

Horizontal Collectors Cell 7 & 8 (10-inch SDR-17 HDPE Pipe with Stone Backfill):

- 4,970 @ $68.72/ft + 6 well heads @ $700.00 = **$345,738.40**

Other Remaining Installation Costs:

Other remaining costs listed on the Shaw Environmnetal bid quote provided in Appendix A-2 = **$78,500.00**

To calculate the cost per foot of gas system piping, the total pipe cost has been divided by the total estimated length of pipe:

- ($139,700.00 + $107,184.00 + $345,738.40 + $78,500.00) ÷ (6985 + 2,552 + 4,970) ft = **$46.26/ft**

It is assumed that an additional 5% of the pipe cost is needed for fittings.

- ($46.26 × 1.05) = **$48.57/ft**

The total cost for the lateral and header piping and fittings is:

- $48.57/ft × 14,507 ft = **$704,604.99**

Perimeter gas monitoring probes have already been installed for Phases 1 through 3 (i.e., Cells 1-10). NSPS Title V requirements have been met.

The total cost for passive gas controls is **$1,064,387.78**

## 8. Active Gas Control

Based on the proposed GCCS design, two gas flare stations will be installed as part of the GCCS for Phases 1 through 3. One gas flare station was already installed as part of the Phase 1, Sequence 1 and 2 GCCS installation (for Cells 1 through 6). Purchase and installation costs are provided in Appendix A-2. The estimated cost of the second gas flare is equal to $229,035.00 + $89,935.79 = **$318,970.79.**

Two additional condensate J-traps will be installed as part of the GCCS system within the footprint of Cell 7and 8. The cost per condensate trap is $6,700 × 2 = **$13,400.00**

The total cost for active gas extraction control is **$332,370.79.**

**9. Security System**

The perimeter fencing and gates were installed as part of the Phase 1 construction and therefore have not been included as part of this closure cost estimate.

**10. Engineering**

Closure Plan Report – The closure plan is included as part of the permit renewal application. Geosyntec has estimated **$15,000** to update this plan.

Final Survey – bid quote survey costs by RCS for the partial closure of Phase 1 Event 2 are $35,000 ÷ 20 acres = $1,750/acre. The costs associated with the final survey are $1,750/acre × 78.25 acres = **$136,937.50**.

Certification of Closure – Geosyntec has estimated **$10,000** to prepare the closure certification report.

**11. Professional Services**

These costs are based on Geosyntec estimates and labor rates. It is estimated that approximately 3 percent of construction cost will be needed for contract/construction management, which equates to 0.03 × $7,155,903.62 = **$214,677**.

It is estimated that approximately 7 percent of construction cost will be needed for construction quality assurance (CQA), which equates to:

- 0.07 × $7,155,903.62 = **$500,913**.

Quality assurance testing is estimated to be 10 percent of the CQA cost estimate and is based on the requirements of the CQA Plan, estimated quantities, and Geosyntec's experience. This equates to:

- 0.10 × $500,913.25 = **$50,091.30**.

**12. Contingency**

A contingency factor for closure costs of ~~5~~ 10 percent is estimated based on the current unit rate cost pricing used for this estimate.

**13. Site Specific Costs**

The following additional costs represent additional work required by the Earthworks Contractor in completing the closure project that have not included in the above costs estimates for liner and stormwater piping (See RCS Bid Quote Items 1,2,4,5,6,7,9,13,14,&18).

Other site specific costs include:

- Mobilization and Demobilization

- Development. offloading and staging geosynthetics liner materials
- Borrow area development and management
- Site fencing at borrow area
- NOI, SWPPP, sediment and erosion controls
- Expose existing cap liner at anchor trench
- Excavation and backfilling of anchor trenches
- Remove existing upslope stormwater piping and rip-rap
- Flushing of existing stormwater control structures and outfall piping
- Waste/closure limit markers
- Waste tire processing facility closure
- Auto fluff recycler closure

In February 2010, FDEP approved closure cost estimates of $37,700.00 and $40,000.00 for the waste tire processing facility and auto fluff recycler, respectively. An annual inflation factor of 1.01 has been applied to the above estimates for years 2011 and 2012. As such, updated costs of $38,457.77 for the waste tire processing facility and $40,804.00 for the auto fluff recycler were used for this estimate.

The total unit rate cost for the above listed items is equal to $9,568.50/acre. The total Site Specific Costs for Cells 1-8 is:

-$9,568.50 × 78.25 acres + $38,457.77 + $40,804.00 = **~~$748,735.13~~827,996.90**.

## V. ANNUAL COST FOR LONG TERM CARE

The unit costs for calculation of the long-term care costs provided below are based on current 3rd party costs or previously approved unit costs with FDEP inflation adjustments applied.

### 1. Ground Water Monitoring

The groundwater monitoring well network for Phases 1 through 3 (Cells 1-10) has already been installed. The long-term care cost for monitoring of groundwater wells was calculated based on the e-mail cost quote provided by Geo-Services and Consulting, Inc.(GSC), dated December 22, 2011. A copy is provided in Appendix A-3. The total cost for each semi-annual event (less leachate sampling and analysis) equals $25,500.00. The cost per well is shown below:

- $25,500.00/Event ÷ 33 Wells = **$772.73/Well/Event**

### 2. Surface Water Monitoring

Labor costs for collecting surface water samples in accordance with the facility's permits is included in the above estimates for ground water monitoring as noted in the cost quote by GSC. Typically the sampling locations are dry and labor costs are minimal to perform the services. If in the event a sample is collected, laboratory costs of **$325.00/sample** are quoted by GSC in Appendix A-3. It is assumed that two samples will be collected for each Semi-annual event on the FDEP form.

### 3. Landfill Gas Monitoring

The landfill gas monitoring probes will be monitored quarterly for concentrations of combustible gases. The long-term care cost associated with the landfill gas monitoring shown below are based on an hourly rate for a technician consultant ($65.00/hour) and current time required to perform the monitoring at the 16 gas probe locations by in-house staff (4 hours).

The cost to perform the monitoring includes field and travel time.

- (4 hrs field + 2 hrs travel) × $65.00/hr = $390.00
- Monitoring equipment rental and travel costs - $150.00/event
- Time to prepare report - 2 hrs @ $65.00/hr = $130.00

Total cost per monitoring event equals $390.00 + $150.00 + $130.00 = **$670.00**

Other gas and air monitoring costs required by the facility permits are provided in the January 30, 2012 cost proposal by Golder Associates provided in Appendix A-3. The additional costs ar listed below and shown as an annual cost in Section 3 of the FDEP form.

- NSPS Reporting - $7,500.00 (Semi-Annual)
- Title V Permit Reporting (AOR) - $5,600.00 (Annual)
- Visble Emissions and Sulfur Testing at Flare - $2,900.00 (Annual)
- Greenhouse Gas Reporting - $4,200.00 (Annual)

### 4. Leachate Monitoring

A leachate sample will be collected annually from Cells 1 through 8. Additionally, one sample is collected at the leachate aeration pond to meet the requirements of the City of St. Cloud for disposal of leachate at their WWTP. The leachate sampling costs include all labor, equipment, and laboratory analyses as provided in the cost quote by GSC provided in Appendix A-3.

- Leachate monitoring unit rate cost at cell sumps equals **$926.00/sump/year**
- Leachate monitoring unit rate cost a leachate pond equals **$1,050.00/pond/year**

Total annual leachate monitoring cost equals (8 sumps × $926.00/sump/year) + (1 pond × $1,050.00/pond/year) = **$8,458.00/year**

### 5. Leachate Collection/Treatment System Maintenance

For the long term care cost estimate, the following maintenance activities have been assumed:

*Leachate pumps:* Assumed that pumps require annual maintenance and Cells 1 through 8 will require one primary and one secondary replacement pump once during the 30-year monitoring period:

- Annual maintenance = $500.00/year
- Leachate pump replacement cost = ($6,354.00 + $4,405.00) ÷ 30years = $358.63/year
  A leachate pump cost quote by EPG Companies is provided in Appendix A-3

- Total estimated annual cost for pumps per cell = **$858.63/year**

*Cleaning*: Assumed that one system cleaning/jetting every 10 years within the 30-year monitoring period will be required (total of 3 cleanings). Provided in Appendix A-3 is a cost quote from Florida JetClean to perform the system flushing required for Cells 1-6 for the recent 5-yr permit renewal application.

- ($9,266.64 × 3) ÷ 30 years = **$926.66/year.**

*Leachate storage containers*: Long term care for the leachate storage ponds assumes that each of the four bladder liners will require replacement over the 30-year monitoring period. Replacement cost has been assumed to be $9,850.00 per flexible bladder as estimated below.

Approximately 22,500 $ft^2$ or 2,500 $yd^2$ of geomembrane required for each bladder (150 ft by 150 ft unit). As noted in Section 3 of the Closure Cost Estimates, installation and purchase cost for 40-mil textured geomembrane equals $3.54/$yd^2$. Assume $1,000/bladder to clean and remove existing bladder. The unit cost for each bladder replacement equals 2,500 $yd^2$ × $3.54/$yd^2$ + $1,000.00 = $9,850.00/bladder

Total long-term care cost for the four bladder replacements based on a square yard and cost per year for the FDEP form is as follows:

- 4 bladders × $9,850.00/bladder = $39,400.00 ÷ 30 = $1,313.34/year ÷ $3.54/$yd^2$ **= 371.0 $yd^2$/year**

*Leachate Aeration*: Assume **$250.00/year** to maintain the leachate aeration system piping, pumps and electrical controls. Cost for electricity is included Section 12.

*Leachate disposal:* The Leachate generation rate after closure was estimated based on calculations presented in Appendix A-3. ~~assumed to be 20 percent of the annual average leachate generation rate for maximum waste height that was obtained from the HELP model Analysis (see Case 4 analyzed for maximum waste thickness of 220 ft in the calculation package entitled *Leachate Management System*).~~ The leachate generation rate calculations account for long-term leachate generation trends based on literature review, discussed in Appendix A-3, as well as measured leachate volumes for 2010 and 2011, provided as part of Appendix A-4. The average long-term leachate generation rate calculated for the facility is equal to approximately 8,394.53 gal per acre per year. For a subject area equal to 100 acres, the average leachate generated per year over a 30-year period is equal to 839,452.9 gallons.

- ~~24.63 $ft^3$/ac/year or 184.3 gal/ac/year × 100 acres × 20 percent = 3,684.90 gal/year → use minimum unit of 1,000 gallons as~~As shown on FDEP form ~~4,0~~840 × 1,000~~00~~ gallons/year × $0.04/gallon for transportation and disposal = **$~~160.00~~33,600/year**.
  Leachate haul rates for Stafford Transport and disposal costs for the City of St. Cloud are provided in Appendix A-~~3~~5.

Therefore, total long-term care cost for leachate system maintenance = **$~~9,519.04~~42,959.04/year.**

### 6. Groundwater Monitoring Well Maintenance

The long-term care cost for maintenance of groundwater monitoring wells was calculated based on the assumption that one monitoring well per phase would need to be replaced, thus, one monitoring well per phase would need abandonment. Unit rate costs to replace and abandon the monitoring wells were based on the recent cost proposal by GCS to abandon and install wells GW-22 for the Cell 8 project. The cost quote by GCS is provided in Appendix A-3.

- Average cost per well to replace/30 years = \$3928.33 ÷ 30 = **\$130.94**
- Average cost per well to abandon/30 years = \$873.33 ÷ 30 = **\$29.11**

### 7. Gas System Maintenance

Approximately one hundred and sixteen (116) gas wells will eventually be installed within the footprint of Cells 1 through 8. It is estimated that an additional \$50 per well/year will be needed for maintenance (\$50 × 116 wells = **\$5,800**). It is assumed that **\$2,500/year** will be required for general maintenance of both skid mounted flare station (includes blowers, meters, valves and flame arrestors). It is assumed 50 ft of lateral or header piping will require replacement or repair at an average cost of **\$50.00/ft**.

### 8. Landscape

The long-term care cost estimate assumes a 100-acre area will require mowing four times per year (closure cap 78.25 acres and other perimeter stormwater retention areas). Provided in Appendix A-3 is a current quote for mowing services at the facility.

- 4 times/year × \$60.00/acre = **\$240.00/acre/year**

### 9. Erosion Control and Cover Maintenance

The long-term care cost for erosion control and cover maintenance assumes that a 0.25-acre (1,210 $yd^2$) area will require maintenance (i.e., sodding) per year, as such, 1,210 $yd^2$ @ \$1.23/$yd^2$ = \$1,488.30/year. The lump sum cost for material and equipment mobilization costs to perform maintenance and general grading of the protective liner for resodding is estimated @ \$2,500/year. The total cost associated with the erosion control and cover maintenance, per year, is equal to **\$3,988.30**.

### 10. Storm Water Management System Maintenance

Maintenance is estimated to occur on an annual basis. For the long-term care cost, a lump-sum cost of \$2,500 has been assumed to mobilize a rubber tire mounted excavator and operator to clean and clear storm water ditches.

### 11. Security System Maintenance

Approximately 200 ft of barbed wire fencing is asumed to require repairs or replacement @ \$1.75/ft (includes material and labor). See attached quote for new fencing provided in Appendix A-3. More so, an estimated \$250.00 will be required for gate maintenance. The cost to replace the front gate sign is equal to \$100.00. This financial assurance assumes that the

front gate sign will be replaced once every 5 years, resulting in a yearly cost of $20/year. The total cost associated with security system maintenance, per year, is equal to **$620.00**.

### 12. Utilities

The long-term care cost estimate for Phases 1 through 3 assumes that the power requirements for site equipment (i.e., pumps, lights, blowers, etc.) will cost $4,018.30 per month. Provided in Appendix A-3 are electrical service statements from Progress Energy that shows the December 2011 billings for Cells 1-7, administration office, gas flare, and leachate holding ponds. The average monthly bill for Cells 1-7 is $54.72. Below are the corresponding estimated annual electrical billings. A water well and septic system is provided for the administration office. It is assumed maintenance of the well and septic system will cost $500.00/year.

- Electric costs Cells 1-8 equals $54.72/month × 12 months/year = **$5,253.12/year**
- Electric costs administration office $631.34/month × 12 months/year = **$7,576.08/year**
- Electric costs gas flare $1,982.49 × 12 months/year x 2 flares = **$47,579.76/year**
- Electric costs leachate holding ponds $1,349.75 × 12 months/year = **$16,197.00/year**
- Maintenance of water well and septic system for administration office = **$500.00/year**

Total annual utilities costs = **$77,105.96/year**

### 13. Leachate Collection/Treatment Systems Operation

Leachate collection/treatment system operation cost estimates are based on weekly monitoring by a technician for total of 3 hours/week × 52 weeks/year @ $60/hour = **$9,360/year**. Additional material maintenance costs for the pumps and aeration system at the storage holding ponds is assumed as **$500.00/year**.

### 14. Administrative

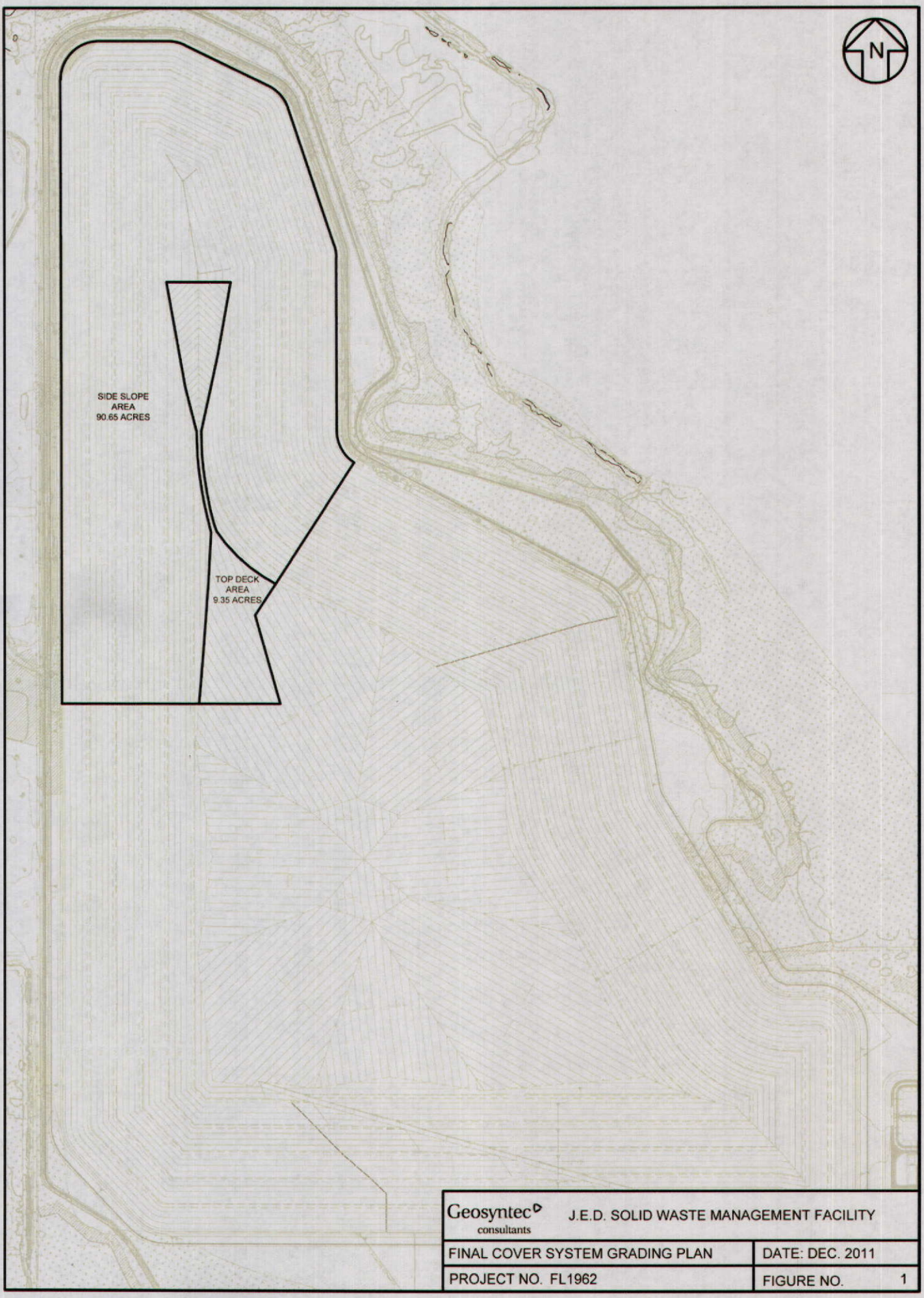
The administrative long-term cost estimates that 20 hours per month will be expended towards administrative/overhead activities @ $40.00/hour (i.e., $9,600). More so, one 3rd party engineer (@$120.00/hr) and one technician (@$65.00/hr) are expected to perform a yearly site inspection under oversight of a P.E. Supervisor (@150.00/hr). The yearly site inspection is estimated to require 8 hours from each on-site personnel and supervisor. The total yearly administrative cost for the facility is equal to **$12,280.00**.

### 15. Contingency

A contingency factor for long-term care costs of ~~5~~–10 percent is estimated based on the current unit rate cost pricing and level of detail provided for this estimate.

### 16. Site Specific Costs

No additional site specific costs are estimated.




| | |
|---|---|
| Geosyntec consultants — J.E.D. SOLID WASTE MANAGEMENT FACILITY | |
| FINAL COVER SYSTEM GRADING PLAN | DATE: DEC. 2011 |
| PROJECT NO. FL1962 | FIGURE NO. 1 |

# APPENDIX A-1

## Earthwork and Liner Support Documents for Closure Estimates

## 2.0 BID FORM AND PRICE LIST

### 2.1 BID FORM

**PARTIAL LANDFILL CLOSURE CONSTRUCTION – EVENT 2 – PHASE 1**
**DISPOSAL AREA**
**JED SOLID WASTE MANAGEMENT FACILITY**

Submitted by: RCS Excavation, Inc (Aaron J. Smith)

Bidder: RCS Excavation, Inc

Date: 1/31/12

Bid Contact(s):

Address: 851 Lake Jewel

City: Lake Placid State: FL Zip:

PHONE: 863 441 1240 FAX: 863 583 9992

EMAIL: amanda@rcsexcavation.com

STATE CONTRACTOR'S LICENSE TYPE NUMBER: CUC1223965

A Corporation of the State of FL

CORPORATE SEAL Officers: (President) A. J. Smith

(Secretary) Amanda Smith

(Treasurer)

Designated by "X" Officers authorized to sign Contracts.

ATTEST BY: Amanda Smith TITLE: Secretary

851 Lake Jewel Rd
Lake Placid, FL 33852

WITNESS: Nikolas Lacey TITLE:

CONTRACT FORM

The work shall be performed under a formal agreement to be entered into between the OWNER and the CONTRACTOR using the OWNER's Contract form. The Contract and all other Contract Documents referred to herein above form the Total Agreement.

## 2.1 BID FORM (Continued)

Substantial completion of Work by _____ (date).

email electronic copy of bid to: **Mr. Mike Kaiser, mkaiser@wsii.us**

mail sealed copies of bids to: **Mr. Mike Kaiser**
**Waste Services, Inc.**
**1099 Miller Drive**
**Altamonte Springs, FL, 32701**

I have received and examined the Bid Package provided by Omni Waste of Osceola County, LLC for the referenced work. I have reviewed in detail the contents of the Bid Package, including the Scope of Work, Plans and Specifications. I submit the following bid with the understanding that:

1. All bids shall remain firm for a minimum of sixty calendar (90) days from due date of submittal.

2. I will enter into and execute an Agreement Between OWNER and CONTRACTOR, in accordance with the sample contract and its attachments provided in the Bid Package.

3. I may be requested by Omni Waste of Osceola County, LLC. to prepare evidence of financial ability to perform the terms of this bid.

4. I acknowledge the receipt of the following addenda:

a) 1 dated 1/26/12

b) _____ dated _____

c) _____ dated _____

Name of Bidder (Company Name) RCS Excavation Inc

Signature/Date DA Smith, 1/31/12

Title President

(Printed Name) A.J. Smith

**2.4 BID WORKSHEET:** RCS Excavation

## JED Solid Waste Management Facility (JED Landfill)
## Partial Closure Construction - Event 2 - Phase 1 Disposal Area

**January 9, 2012**

| Item | Description | Unit | Quantity | Unit Price | Sub-Total |
|---|---|---|---|---|---|
| 1 | Mobilization and Demobilization (not to exceed 5% of total bid) (See Note 1) | LS | 1 | $59,000.00 | $59,000 |
| 2 | Development, Offloading and Staging Geosynthetic Liner Materials (See Note 2) | LS | 1 | $14,730.00 | $14,730 |
| 3 | Surveying & As-builts (See Note 3) | LS | 1 | $35,000.00 | $35,000 |
| 4 | Borrow Area Development and Management (See Note 4) | LS | 1 | $62,091.00 | $62,091 |
| 5 | Silt Fencing at Borrow Area | LF | 5,000 | $0.83 | $4,150 |
| 6 | NOI, SWPPP, Sediment and Erosion Controls (BMP's) | LS | 1 | $3,000.00 | $3,000 |
| 7 | Expose Existing Geosynthetric Cap Liner at Cell 1-4 Anchor Trench Tie-in | LF | 2,900 | $5.32 | $15,428 |
| 8 | Placement and Grading of 12" Intermediate Cover Layer (See Note 6) | CY | 35,750 | $4.24 | $151,580 |
| 9 | Excavation and Backfilling of Anchor Trenches | LF | 990 | $5.32 | $5,267 |
| 10 | Placement and Grading of 24" Protective/Vegetation Layer (See Note 6) | CY | 92,800 | $4.27 | $396,256 |
| 11 | 18" Diameter Stormwater Piping (See Note 7) | LF | 1,612 | $28.27 | $45,571 |
| 12 | 18" Diameter Stormwater Inlet Structures at Benches (See Note 8) | EA | 22 | $2,246.56 | $49,424 |
| 13 | Remove Existing Upslope Stormwater Piping, Rip-Rap and Inlet Grates for Cell 1-4 Tie-in | LS | 1 | $5,174.40 | $5,174 |
| 14 | Flushing of Existing Stormwater Control Structures and Outfall Piping (See Note 9) | LS | 1 | $19,530.00 | $19,530 |
| 15 | 4-inch Diamater Seepage Header Pipe (solid and perforated) | LF | 5,100 | $6.77 | $34,527 |
| 16 | Vegetation Layer Soil Amendments | AC | 20.2 | $1,562.00 | $31,552 |
| 17 | Sodding | SY | 97,500 | $1.23 | $119,925 |
| 18 | Waste/Closure Limit Markers | EA | 5 | $600.00 | $3,000 |
| | | | | | |
| | | | | **Total Bid** | **$1,055,206** |

**See Notes Below and Scope of Work - Section I of Contract Agreement:**

**Note 1** - One half of total cost will be paid upon mobilization and one half upon demobilization.

**Note 2** - Contractor shall haul, place and grade six inches (6") of clean soils to provide smooth flat location to store liner materials. Location will be at the top deck area immediately south of the closure limits. Location and dimensions are shown on Figure 1 of the bid documents.

**Note 3** - Six (6) signed and sealed hard copies and one each (pdf and CAD file) of all as-built drawings must be provided to Owner at completion of project.

**Note 4** - Borrow Area Development and Management (Item 4) shall be in accordance with SFWMD ERP and WUP, and Kimley-Horn and Associates drawings dated March 2011. This item also includes any necessary survey, clearing, grubbing, dewatering, grading and restoration activities for the borrow area and haul road. Vegetation cleared at the borrow area shall be stockpiled in the active Cell 7 area in a location designated by the Owner.

**Note 5** - Includes haul and placement of clean fill soil to achieve waste grade elevations (account for existing waste underfill). Regrading of overfill soils/wastes shall be included in the unit rate. Assumed 12" depth required. Final quantity will be determined based on pre-construction survey.

**Note 6** - Unit rate and payment will be based on in-place compacted volumes based on design grades. No additional payment will be made for overfilling, tolerance allowance, settlement and/or erosion. 10% risk allowance made by Owner for settlement. Payment will be based on quantity shown. Contractor to assume all other quantity risk due to settlement and erosion. Contractor shall provide full time employee to be stationed at the main access and haul road intersection to direct cross traffic during site operating hours.

**Note 7** - Unit rate shall include miscellaneous fittings (elbows, bends, bands and ties, gaskets etc.) required to complete the stormwater piping. Pay item does not include Y-fittings at the bench locations.

**Note 8** - Includes all costs for Y-fittings, pipe extensions, inlet grates and concrete to complete the stormwater inlet structures at the bench locations.

**Note 9** - Includes flushing of all new and existing stormwater piping in closed areas, and stormwater structures and piping at the landfill perimeter road area.

**Note 10** - Provide unit rate cost savings if soils are hauled from the borrow area during non operational hours (5:00 p.m. to 5:00 a.m.). Contractor shall provide all lighting and all necessary safety measures to ensure hauling can be done in a safe manner. Contractor shall propose quantity.

**Note 11** - Full time security guard shall be stationed at the facility access gate if Contractor operates outside of weekday operating hours (5:00 p.m. to 5:00 a.m.) and on Saturdays or Sundays.

→ Items 1, 2, 4, 5, 6, 7, 9, 13, 14 & 18 not included in Liner or Stormwater estimates.

Sum = $ 191,370.00 ⇒ Cost/acre = $ 191,370.00 / 20 = 9,568.50

**2.4 BID WORKSHEET:** COMANCO Construction - Geosynthetics Installation

**JED Solid Waste Management Facility (JED Landfill) - Partial Closure Construction - Event 2 - Phase 1 Disposal Area**

| M/P Item | Description | Unit | Bid Estimate Install Quantity | Install Unit Price | Install Sub-Total | Bid Estimate Material Supply Quantity | Material Unit Price | Material Sub-Total | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Mobilization and Demobilization | LS | 1 | $5,000 | $5,000 | NA | | | $5,000 |
| 2 | Tie-In to Existing 40-mil Liner at Existing Closure | LF | 2,900 | $4.00 | $11,600 | NA | | | $11,600 |
| 3 | 40-mil Textured Geomembrane | SF | 880,000 | $0.100 | $88,000 | 1,013,350 | NA | NA | $88,000 |
| 4 | Geocomposite | SF | 610,000 | $0.080 | $48,800 | 711,525 | NA | NA | $48,800 |
| 5 | 8" Diameter Gas Well Boots | EA | 30 | $350.000 | $10,500 | NA | NA | NA | $10,500 |
| 6 | 6" Diameter Lateral Boots | EA | 30 | $350.000 | $10,500 | NA | NA | NA | $10,500 |
| | | | | | $174,400 | | | $0 | $174,400 |

**WSI Notes:**

1. Install and material supply quantities are provided for bid estimate purposes. Install pay quantities will be based on actual square footage verified by 3rd party survey (including anchor trench). Material supply quantities shall be based on Installers take-off estimate, approved by Owner. Supply quantities shall include waste, slope, anchor trench, overlap, and any other adjustment factors necessary to supply all material to complete the work.
2. Earthwork Contractor will offload and stage geosynthetics materials delivered to the site. Material Supplier will furnish strappings on the rolls for offloading.
3. Installation quotes will be evaluated on cost and time to complete the work - both are important. Please indicate how many crews can be placed on the project and estimated time.
4. Material Supply Unit Price **INCLUDES FREIGHT** and is a **DELIVERED TO FACILITY** price. The JED Facility is exempt from sales tax.
5. Material specifications are attached. Material Unit Price includes all MQC testing as required by the specifications.
6. Earthwork Contractor will supply and place the seepage header pipe. Geomembrane installer shall cut, wrap and sew the geocomposite around the pipe.

**Bidder Notes:**

COMANCO estimates that the installation work will take approximately thirty-eight (38) good weather work days for one crew to complete. Our crew will work six (6) ten (10) hour work days per week.

Seepage Header Pipe Wrap item includes pipe placement, wrapping and sewing of composite, geomembrane flap, approximately 5,100 lf of welding for geomembrane flap, and twenty (20) 4" pipe boots for seepage header pipe solid outlets.

COMANCO assumes that all weld rod for the liner installation will be provided by the Owner. We estimate that the project will require approximately 88 boxes of weld rod.

- Total Items 1, 2, 6 & 7 = $ 5000 + $ 11,600 + $ 10,500 + $ 10,500
  = $ 37,500 (Add to install cost for 40 mil)

- Average add-on to install unit rate cost for Items 1, 2, 6 & 7
  = $ 37,600 / 880,000 sf = $ 0.043/sf = $ 0.387/sy

- Total 40-mil installation unit cost Rate = ($ 0.10/sf)(9 sf/sy) + $ 0.387/sy = $ 1.29/sy

- Unit cost rate for geocomposite = ($ 0.08/SF)(9 sf/sy)
  = $ 0.72/sy

**QUOTATION – Revised 1/17/12**

Mr. M. Kaiser
Waste Services, Inc.
Email: mkaiser@wsii.us

11 Rolls/Truck for LLDPE - 6 trucks

**Project Number:** 120117125
**Project Name:** JED Partial Closure
**Location:** St. Cloud, FL
**Application:** ~~Landfill~~
**Bid Date:** January 17, 2012
**Terms:** ~~Net 30 days~~

| Product | Quantity | Roll Size | F.O.B. | Unit Price | Total Price | Warranty |
|---|---|---|---|---|---|---|
| 40 mil LLDPE Microspike® | 718,520 SF 44 Rolls | 23' x 710' | Georgetown, SC | $.2346/sf | $ 168,564.79 | Agru Standard |
| 40 mil LLDPE Smooth® | 288,075 SF 15 Rolls | 23' x 835' | Georgetown, SC | $.2081/sf | $ 59,948.41 | Agru Standard |
| ~~8-250-8 Composite~~ | ~~677,730 SF 246 Rolls~~ | ~~14.5' x 190'~~ | ~~Georgetown, SC~~ | ~~$.3974/sf~~ | ~~$ 269,329.90~~ | ~~Agru Standard~~ |
| 5mm HDPE Weld Rod | 440 LBS 20 Spools | 22 lb spools | Georgetown, SC | $4.25/lb | $ 1,870.00 | |
| Cutting Fees | 5 Cuts | | | $250.00 | $ 1,250.00 | |
| Estimated Freight 6 | ~~14~~ Trucks | | St. Cloud, FL | $1,600.00 | $ ~~22,400.00~~ 9,600.00 | |

**Note:** Prices are valid for 30 days from date of quotation. Freight prices are estimates only. Customers will be charged actual freight costs at time of shipping.
**Exceptions/Clarifications and Special Requirements:** Clarifications will be sent to you upon specification review.
Agru Standard 1 Year Warranty will apply.

**Comments:**

- Unless otherwise specified, Agru America standard material specification values and testing will apply for this quotation and the Customer agrees that Agru America standard values will be acceptable according to this quote.
- Agru America Standard Warranty shall apply.
- Agru America General Terms and Conditions will apply.
- If the material quantity changes from the above square footage, a revised quotation must be issued.
- Agru America reserves the right to pass along any verifiable resin increases from the resin supplier up to time of material shipment.
- Shipping dates are estimates only and Agru America will not be held liable for any delays due to shipping.
- Any costs associated with third party testing will be the responsibility of the customer.
- Interest will accrue on unpaid balances at 1 ½% per month and Purchaser is responsible for collection costs and attorney fees.

**Customer Acknowledgment**

P. O. No.: _____ Signature: _____
Date: _____ Title: _____

**Please return to:**
Paul W. Barker
Fax: 843-527-2738
*Your material supplier – not your competition!*

ADDED COST FOR Shipping & Weld Rod = ($1870.00 + $9,600)/1,006,595 sf

40 mil LLDPE Textured = $0.25/sf = $2.25/sy

Received from Shaw Ind.

**PROGRESSIVE WASTE SOLUTIONS PURCHASE ORDER FORM**

**P.O. Number** _____

**Geosynthetics Material Supplier's Project Number** _____

**Project Title: JED Partial Closure Phase 1**

**Date:** 18-Jan-12

**Owner: WSI / Progressive Waste Solutions**

Address: 1099 Miller Drive
Altamonte Springs FL 32701
Phone/Fax 904-673-0446
Attention: Mike Kaiser

**Site Name:** JED Landfill
Address: 1501 Omni Way
St Cloud 34773
Phone/Fax: /
Attention:

**Material Supplier Skaps Industries**

335 Athena Drive
Athens GA 30601
Phone/Fax: 770-564-1857 / 770-564-1818
Attention:

Estimated Ship Date
Required Delivery Date
Payment Terms (Days) 30
Routing Flatbed
F.O.B. Plant

Third Party Conformance Testing? Y ☐ N ☐
CQA firm or Lab
Phone/Fax:
Attention:

**MATERIAL SUPPLY**

| Item # | Item Description | Number of Rolls | Roll Width | Roll Length | Total Full Roll Quantity | Unit | Unit Price | Extended Price Total |
|---|---|---|---|---|---|---|---|---|
| 1 | Transnet 270-2-8 | 241 | 14.0 | 200 | 674,800 | | $ 0.3300 | $ 222,684.00 |
| 2 | Freight Estimate | | | | 9 | | $ 1,400.0000 | $ 12,600.00 |
| 3 | | | | | - | | | $ - |
| 4 | | | | | - | | | $ - |
| 5 | | | | | - | | | $ - |
| 6 | | | | | - | | | $ - |
| 7 | | | | | - | | | $ - |
| 8 | | | | | - | | | $ - |
| 9 | | | | | - | | | $ - |
| 10 | | | | | - | | | $ - |
| 11 | | | | | - | | | $ - |
| | | | | | | | **Total Amount** | $ 235,284.00 |

**TERMS AND CONDITIONS**

1 All manufacturing, conformance testing, material properties, and delivery of material shall be in accordance with the site specific CQA plan and project requirements.

**APPROVALS**

Engineer:

_____ Date: _____

**ACKNOWLEDGMENT**

Geosynthetic Material Supplier

_____ Date: _____

Unit Rate Including Shipping

$235,284/674,800 sf

= $0.35/sf = $3.15/s

ADS
ADVANCED DRAINAGE SYSTEMS, INC.
www.ads-pipe.com
51-0105665



INVOICE DATE OCT 24, 2011
INVOICE NO. 15404188

PMT. DUE DATE NOV 23, 2011
PMT. DUE $ 3,524 69
CUST NO. 34871
BILL TO CUST NO. 34871
SHIP DATE OCT 24, 2011
CREDIT/DEBIT NO.
ORDER NO. 10695677 / 1306639
CUST P.O. NO. J.E.D. LANDFILL
SALES REP NAME Delegato, Christopher
WAREHOUSE P67
SHIP TO

BILL TO

Attn: Accounts Payable
ERC GENERAL CONTRACTING
890 CARTER ROAD SUITE 170
WINTER GARDEN FL 34787

Nestor

ERC GENERAL CONTRACTING
JS J.E.D. LANDFILL
1501 OMNI WAY
SAINT CLOUD FL 34773

TERMS NET 30
BOL. NO. 1179747
TRACKING NUMBER 0

| QTY ORDERED | QTY SHIPPED | U/M | PRODUCT NUMBER | DESCRIPTION | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|---|
| 20 | 20 | FT | 30650020IB | 30" DWALL HWY,WTIB,SOLID 20' | 20.330 | 406.60 |
| 140 | 140 | FT | 24650020IB | 24" DWALL HWY,WTIB,SOLID 20' | 14 670 | 2,053.80 |
| 400 | 400 | FT | 06650020IB | 6" DWALL HWY,WTIB,SOLID 20' | 1.950 | 780.00 |
| 3 | 3 | EA | 02021.0 | 2# CAN BLUE LUBRICANT | .000 | 0 00 |
| 1 | 1 | EA | DELIVERY_FREIGHT_CHARGE | FREIGHT CHARGE ONLY | 50 000 | 50.00 |
| | | | | FUEL SURCHARGE | | 24.30 |
| | | | | IB DISCOUNT | | -15 73 |

SUB-TOTAL 3,298 97
TOTAL TAX 225.72
INVOICE TOTAL $ 3,524.69 USD

24" ADS Cost/LF

CSR JPOOL ENTERED BY JPOOL

Freight and Special Order Disclaimer

1. Quotes must be accepted within 30 days from above quotation date. Orders must be shipped within 30 days of order placement
2. Freight/Drop charges will apply per the following parameters (rates values listed below are not inclusive of Polyplast, Seweroct or Inserta Tee or non stock special order products which will incur actual freight charges or fuel surcharge as appropriate)
3. All orders $3,500 or greater will be delivered freight prepaid.
4. All orders less than $3,500 where ADS has ample time to match up the remainder of truck will incur a $50 (minimum) drop charge
5. All orders less than $3,500 where ADS does not have ample time to match up the remainder of truck will incur the actual common carrier LTL rate
6. All drop charges are separate and in addition to any applicable fuel surcharges
7. ADS reserves the right to re-route when the quantities change by more than 10%. Prices quoted do not include state, local or use taxes. Prices quoted are based on the total project. Specific products such as Polyplast Drain and Catch Basins, Custom pipe or Specialty fabricated products will be offered only as an engineered system with ADS pipe. All returns are subject to a 25% restocking fee. Fittings, Polyplast, non-standard accessories and specialty ordered items cannot be returned. The quantities listed are estimated based on our interpretations of the project information. The bidder is responsible for confirming quantities. ADS does not imply that the material will be accepted on any jobsite for any specific project unless stated otherwise. Technical certification is available upon request

IF YOU HAVE QUESTIONS RELATED TO THIS INVOICE, PLEASE CALL 888-367-7473. INQUIRIES MUST BE SUBMITTED WITHIN 30 DAYS FROM DATE OF INVOICE.

A 1.00% PER MONTH (A RATE OF 12.00% PER ANNUM) SERVICE CHARGE WILL BE IMPOSED ON PAST DUE AMOUNT. BUYER ACCEPTS ALL TERMS AND CONDITIONS ON BOTH SIDES HEREOF. THIS FORM, NONE OF WHICH MAY BE CHANGED BY BUYER. ACCEPTANCE OF ANY SHIPMENT BY BUYER IS AN ACCEPTANCE OF THE TERMS OF THIS DOCUMENT, NOTWITHSTANDING ANY TERMS OR CONDITIONS CONTAINED IN ANY ACKNOWLEDGEMENT OR OTHER FORM OF BUYER. SUBJECT TO TERMS AND CONDITIONS PRINTED ON REVERSE SIDE.

TO PAY BY CREDIT CARD CALL 888-524-7373

***CONTINUED***

ADS
ADVANCED DRAINAGE SYSTEMS, INC.
www.ads-pipe.com
51-0106665



| | |
|---|---|
| INVOICE DATE | SEP 02, 2011 |
| INVOICE NO. | 15339828 |

| | | | | | |
|---|---|---|---|---|---|
| PMT. DUE DATE | OCT 02, 2011 | CUST NO. | 34871 | CREDIT/DEBIT NO. | |
| PMT. DUE | $ 613.68 | BILL TO CUST NO. | 34871 | ORDER NO. | 10656152 / 1226569 |
| | | SHIP DATE | SEP 02, 2011 | CUST P.O. NO. | 1788 |
| | | | | SALES REP NAME | Hash, Allan R |
| | | | | WAREHOUSE | P67 |

**BILL TO**

Attn: Accounts Payable
ERC GENERAL CONTRACTING
890 CARTER ROAD SUITE 170
WINTER GARDEN FL 34787

**SHIP TO**

ERC GENERAL CONTRACTING
JS JED LANDFILL
1501 OMNI WAY
SAINT CLOUD FL 34773

| | |
|---|---|
| TERMS | NET 30 |
| BOL NO. | 1106116 |
| TRACKING NUMBER | 0 |

| QTY ORDERED | QTY SHIPPED | U/M | PRODUCT NUMBER | DESCRIPTION | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|---|
| 60 | 60 | FT | 1865002018 | 18" DWALL HWY.WTIB.SOLID.20' | 8.780 | 526.80 |
| 1 | 1 | EA | DELIVERY_FREIGHT _CHARGE | FREIGHT CHARGE ONLY | 50.000 | 50.00 |
| | | | | FUEL SURCHARGE | | 3.95 |
| | | | | IB DISCOUNT | | -3.69 |

| | | |
|---|---|---|
| SUB-TOTAL | $77.06 | |
| TOTAL TAX | 36.62 | |
| INVOICE TOTAL | $ 613.68 | USD |

CSR: TSHROPSHIRE ENTERED BY TSHROPSHIRE

18" ADS Cost/LF

Freight and Special Order Deadlines:

1. Quotes must be accepted within 10 days from above quotation date. Orders must be shipped within 30 days of order placement.
2. Freight/Drop charges will apply per the following parameters (order values listed below are not inclusive of Polypipe, Baysaver, or Inserts Tee or non stock special order products which will incur actual freight charges or fuel surcharge as appropriate):
a. All orders $3,500 or greater will be delivered freight prepaid.
b. All orders less than $3,500 where ADS has ample time to smash up the remainder of truck will incur a $50 (minimum) drop charge
c. All orders less than $3,500 where ADS does not have ample time to smash up the remainder of truck will incur the actual common carrier LTL rate
d. These drop charges are separate and in addition to any applicable fuel surcharges.
3. ADS reserves the right to re-quote when the quantities change by more than 10%. Prices quoted do not include state, local or use taxes. Prices quoted are based on the total project. Specific products such as Nyloplast Drain and Catch Basins, Custom pipe or Specialty Fabricated products will be offered only as engineered to meet ADS pipe. All returns are subject to a 25% restocking fee. Fittings, Nyloplast, non-standard, prefabricated and specialty ordered items cannot be returned. The quantities listed are estimated based on our interpretations of the project quantities. The bidder is responsible for confirming quantities. ADS does not imply that the material will be accepted on any bid to the any specific project unless stated otherwise. Technical certification is available upon request.

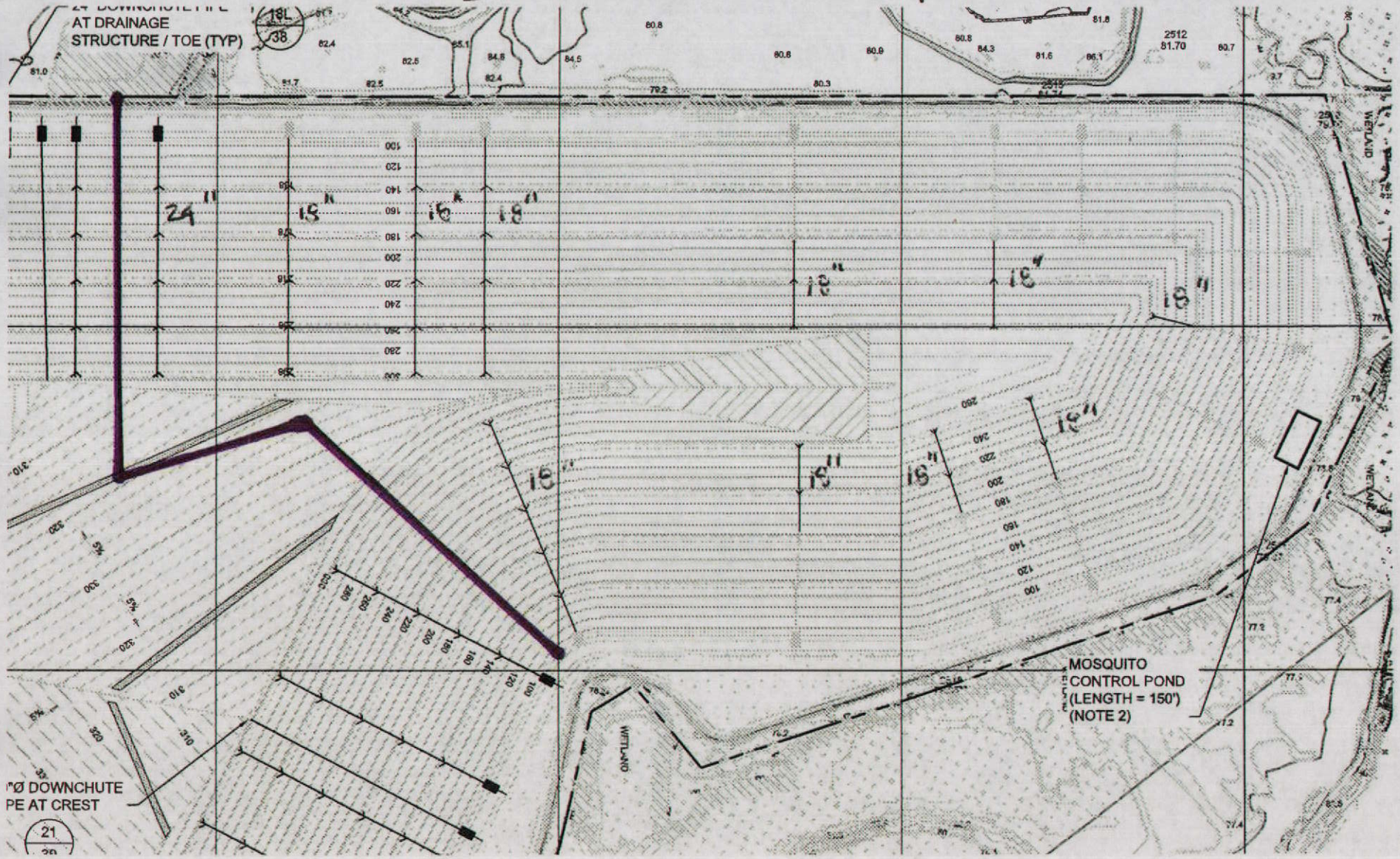
IF YOU HAVE QUESTIONS RELATED TO THIS INVOICE, PLEASE CALL 888-369-7473. INQUIRIES MUST BE SUBMITTED WITHIN 30 DAYS FROM DATE OF INVOICE.

A 1.00% PER MONTH (A RATE OF 12.00% PER ANNUM) SERVICE CHARGE WILL BE BILLED ON PAST DUE AMOUNT. BUYER ACCEPTS ALL TERMS AND CONDITIONS ON BOTH SIDES HERE OF THIS FORM, NONE OF WHICH MAY BE CHANGED BY BUYER. ACCEPTANCE OF ANY SHIPMENT BY BUYER IS AN ACCEPTANCE OF THE TERMS OF THIS DOCUMENT, NOTWITHSTANDING ANY TERMS OR CONDITIONS CONTAINED IN ANY ACKNOWLEDGEMENT OR OTHER FORM OF BUYER. SUBJECT TO TERMS AND CONDITIONS PRINTED ON REVERSE SIDE.

TO PAY BY CREDIT CARD CALL 888-524-7123

***CONTINUED***

# Remaining Stormwater Piping Cells 1-8




Sheet 37 of 40, Lateral Expansion, Major ERP Modification

JED Solid Waste Management Facility

Cells 1-8 Financial Assurance Cost Estimate

Figure 1

Remaining Soil Volume in Branson Borrow Area.

**From:** Conerly, Bo
**Sent:** Thursday, April 07, 2011 6:31 PM
**To:** 'Michael Kaiser'
**Subject:** FW: JED Volumes

Hey Mike

I just checked the website again and it still has the same information (WUP complete, ERP under review). I'll give Jose a call tomorrow if it hasn't been updated in the morning.

The excavation volumes are presented below. The North (1,413,599.82 cy) is from 60' to 45'. The South (3,292,291.71 cy) is from is the excavation in the 4 phases going down to 45' but leaving the berms. The Berm volume (1,571,237.30 cy)is obviously the volume in the berms for both the south and north areas. Total volume is 6,277,128.83 cy.

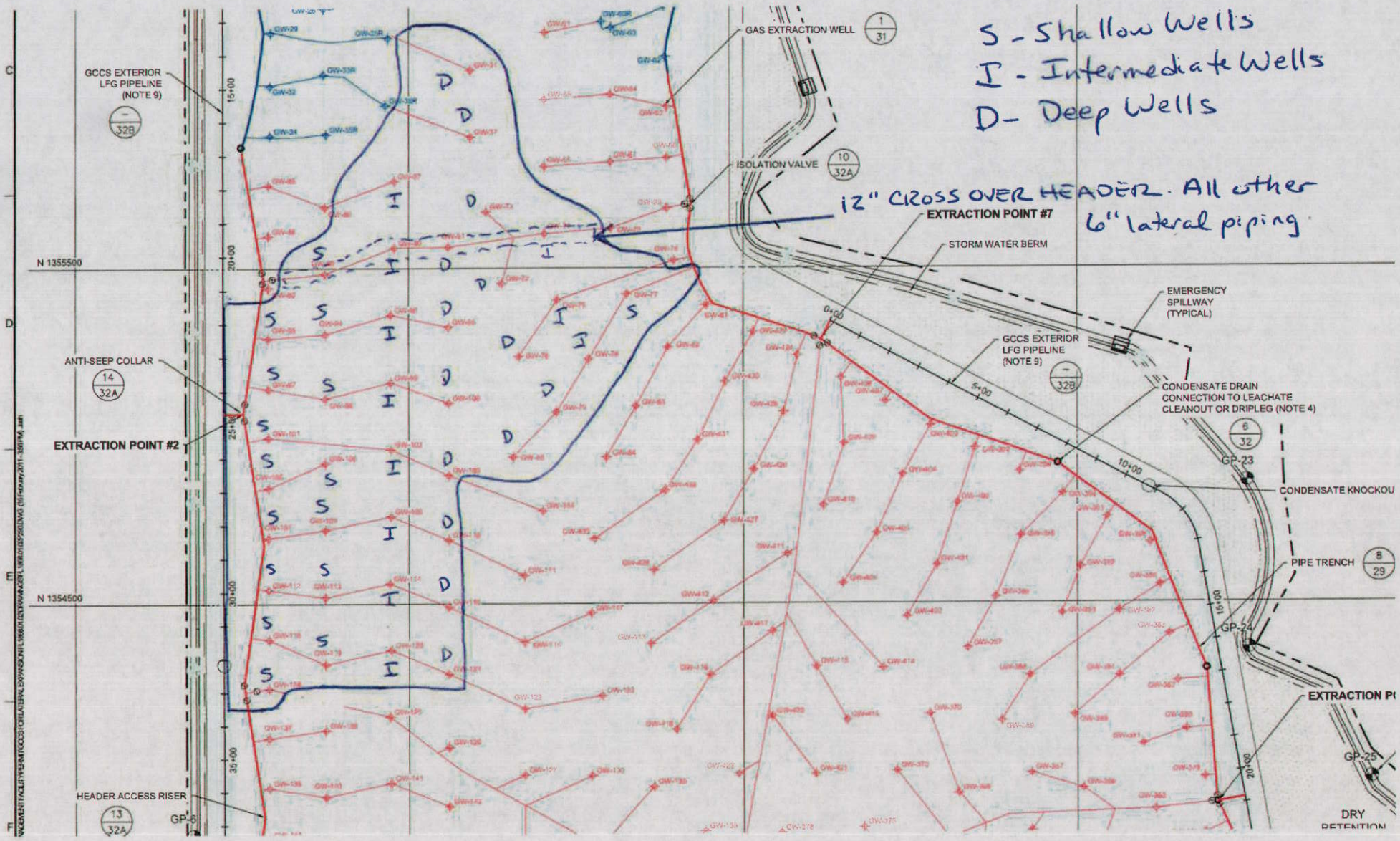
Let me know if you have any questions.

**Robert "Bo" Conerly, P.E.**
*Kimley-Horn and Associates, Inc.*
4 West Oak Street, Suite E
Arcadia, FL 34266
Office: 863-993-2518
Fax: 941-379-4352
bo.conerly@kimley-horn.com

# APPENDIX A-2

## Gas Collection and Control System Support Documents for Closure Estimates

# Remaining GCCS Installation Cells 1-8




Sheet 29 of 40, Lateral Expansion, Major Solid Waste Permit Modification,

Cells 1-8 Financial Assurance Cost Estimate

Cell 1-8 Financial Assurance Cost Estimate

Shaw Bid Quote

## BID WORKSHEET
## JED Solid Waste Management Facility
Phase 2 Cells 3-6 Gas Collection and Control System Expansion
rev. 9/19/2011b

| Item/Description | Unit | Quantity | Unit Cost | Subtotal Cost |
|---|---|---|---|---|
| **General** | | | | |
| Mobilization/Demobilization | LS | 1 | max 5% of Total | $ 13,400.00 |
| Track Truck Mobe/Demobe (if needed) | LS | 1 | $ 1,820.00 | $ 1,820.00 |
| Tracked Haul Truck (if needed) | WK | 1 | $ 4,500.00 | $ 4,500.00 |
| **HDPE Header and Lateral Piping** | | | | |
| Excavation and Connection to Existing Lateral Stubouts | EA | 11 | $ 1,800.00 | $ 19,800.00 |
| 6" SDR-17 Lateral Pipe | LF | 3120 | $ 20.00 | $ 62,400.00 |
| 12" SDR-17 Header Pipe | LF | 400 | $ 42.00 | $ 16,800.00 |
| **Valves and Other Components** | | | | |
| 12" ASAHI Ty57 Nitrile Seal Butterfly Valve /w Ext. | EA | 3 | $ 3,650.00 | $ 10,950.00 |
| 6" Header Access Riser (Detail 10A/B-11) | EA | 4 | $ 750.00 | $ 3,000.00 |
| Fittings | LS | 1 | $ 3,580.00 | $ 3,580.00 |
| **Gas Extraction Wells** | | | | |
| Gas Well Head Assemply | EA | 13 | $ 700.00 | $ 9,100.00 |
| Benching for Wells | EA | 13 | $ 400.00 | $ 5,200.00 |
| 8" Sch 80 PVC Perforated Gas Extraction Well Section | LF | 1360 | $ 57.00 | $ 77,520.00 |
| 8" Sch 80 PVC Solid Gas Extraction Well Section | LF | 235 | $ 42.50 | $ 9,987.50 |
| Vertical Well Drilling (36-inch diameter) | LF | 1600 | $ 28.00 | $ 44,800.00 |
| **TOTAL CONSTRUCTION COSTS** | | | | **$ 282,857.50** |

**Notes:**
1. Mobilization and demobilization shall not exceed 5% of total.
2. Quantities shall be used and bid as provided.
3. Lateral pipe quantities include 6% slope correction and 15' allowance at well locations for vertical connections and stubouts.
4. Unit rate for perforated gas extraction well section shall include gravel pack.
5. Unit rate for solid gas extraction well section shall include bentonite plugs, isolation rings, and soil backfill.
6. Fittings shall include all elbows, tees, flange adapters, blind flanges, gaskets, bolts etc. to complete the lateral connections to the wells and existing laterals. Butterfly Valve and Header Access Riser items include fittings specific to those items.

Fitting cost as % of pipe cost

$[3580 / (62,400 + 16,800)] \times 100 = 4.86\%$

use 5%

Remaining Other Installation Costs

$ 76,850.00

1. Mob/Demob - 13,400.00
2. Track Haul Truck - $ 18,000 (4 weeks)
3. 6 Connections to Existing Laterals - $ 10,800 (not header)
4. 5-12" Valves - $ 18,250

Cell 7 GCCS Horizontal Collectors

COMANCO®
ENVIRONMENTAL CORPORATION

COMANCO Environmental Corporation
4301 Sterling Commerce Dr
Plant City, FL 33566-7372
Ph: (813) 988-8829 Fx: (813) 988-8953

**Prepared By:**
Scotty Martone — Estimator
Quote Date: December 1, 2011
Quote Expiration: December 15, 2011

---

**Mr. Mike Kaiser**
Waste Services, Inc.
1099 Miller Drive
Altamonte Springs, Florida 32701
Cell: 904/673-0446
Fax: 407/831-7506
E-mail: mkaiser@wasteservicesinc.com

**Project Information:**
JED Cell 7 Horizontal Collector
JED Solid Waste Facility, St. Cloud, Florida
Proposal Number: 03115182

COMANCO Environmental Corporation (CEC) is pleased to provide you with the following proposal for the supply and installation of the items and appurtenances as indicated below:

$ 68.72/LF

| CEC Provided Equipment | | | | | |
|---|---|---|---|---|---|
| Item | Item Description | Quantity | Unit | Unit Price | Total |
| 1 | Mobilization/Demobilization | 1 | EA | $ 3,000.00 | $ 3,000.00 |
| 2 | Supply & Install Horizontal Collector with Stone | 1,750 | LF | $ 67.00 | $ 117,250.00 |
| | | | | **Stone Option Total (Mob/Demob Included)** | **$ 120,250.00** |
| 3 | Supply & Install Horizontal Collector with Tire Chips | 1,750 | LF | $ 45.00 | $ 78,750.00 |
| | | | | **Tire Chip Option Total (Mob/Demob Included)** | **$ 81,750.00** |

| WSI Provided Equipment | | | | | |
|---|---|---|---|---|---|
| Item | Item Description | Quantity | Unit | Unit Price | Total |
| 4 | Mobilization/Demobilization | 1 | EA | $ 1,500.00 | $ 1,500.00 |
| 5 | Supply & Install Horizontal Collector with Stone | 1,750 | LF | $ 63.00 | $ 110,250.00 |
| | | | | **Stone Option Total (Mob/Demob Included)** | **$ 111,750.00** |
| 6 | Supply & Install Horizontal Collector with Tire Chips | 1,750 | LF | $ 41.00 | $ 71,750.00 |
| | | | | **Tire Chip Option Total (Mob/Demob Included)** | **$ 73,250.00** |

1.) **Mobilization / Demobilization:** This proposal includes one (1) mobilization/demobilization. Any and each additional mobilizations/demobilizations, if necessary, shall be billed at the rate listed in this proposal.

2.) **Labor:** Our proposal is based on a five (5) day work week, ten (10) hours each day, utilizing non-union, non-prevailing wage labor.

3.) **Performance / Payment Bond:** The cost of the performance/payment bond (if applicable) will be 2.0% of the total estimated cost shown above.

4.) **Taxes:** Any applicable material and/or freight sales taxes are included in this proposal.

Gas Flare Purchase 2008

Shaw® LFG Specialties, L.L.C.

Corporate Headquarters:
LFG Specialties LLC
16406 US Route 224 E
Findlay, OH 45840-9761
Main: (419)424-4999
Fax: (419)424-4991

# UTILITY FLARE SYSTEM
# MODEL PCFT1444I12

## LFG SPECIALTIES SALES AGREEMENT NO. 030802R1

**Date: April 7, 2008**

**PRESENTED TO:**
**Mr. Mike Kaiser**
**Waste Services Inc.**
**1501 Omni Way**
**St. Cloud, FL 34773**
**(904)673-0446**

**PREPARED BY:**
**Lee Zink, Senior Application Engineer**
**16406 US Route 224 E**
**Findlay, OH 45840**
**(419) 425-6190**

**PRESENTED BY:**
**Robert Johnston, National Sales Manager**
**11560 Great Oaks Way, Suite 500**
**Alpharetta, GA 30022**
**(770)667-7789**

**PROJECT REFERENCE:**
**J.E.D. Solid Waste Management Facility**
**Omni Waste of Osceola County, LLC**
**St. Cloud, FL**

# SALES AGREEMENT

This sale agreement "Agreement" which includes the Equipment Specification and Terms and Conditions of Sale below is entered into on the undersigned date, by and between the seller, LFG Specialties, L.L.C. "LFG Specialties", a Louisiana corporation, and purchaser, _____ (hereinafter "Purchaser").

A. LFG Specialties is the manufacturer of certain flare "Equipment" more fully described in paragraph 1. below, "Equipment Quote".

B. Purchaser wishes to purchase from LFG Specialties such Equipment on the terms and conditions set forth herein.

Therefore, in consideration of the covenants contained herein and for other good and valuable consideration, the legal sufficiency of which is acknowledged, the parties wishing to be legally bound agree as follows:

## I. EQUIPMENT SPECIFICATION

Purchaser hereby agrees to purchase from LFG Specialties such Equipment and Services as described in this Agreement per the following and subject to the standard "Terms and Conditions of Sales" herein:

A. Equipment Scope:

LFG Specialties' scope of equipment supply and brief description of the system is listed below. For a more detailed system description please see Section G.

1. One LFG Specialties fully assembled skid mounted landfill gas candlestick flare including:
   - One flare Model CFT1444I12 with peripheral equipment (capacity 360-3600 SCFM of landfill gas at 30-50% methane content)
   - **Designed and constructed to operate as a complete unit to minimize installation and start-up time completely fabricated, assembled, pre-wired and tested prior to shipment.**
   - **Stack to be delivered completely wired from the stack junction box to the thermocouples, UV eye and igniter. Also from the stack junction box to the main control and power panels.**
   - One 12 in. Shand & Jurs Model 94307 flame arrester
   - One propane pilot assembly with automatic igniter system
   - One 200 lb. propane tank (propane to be supplied by others)
   - Two Houston Service Industries Model 12602 or equal multistage centrifugal landfill gas blowers with direct drive, blower bearing RTDs and 75 HP, 460 VAC, three phase, explosion proof motors (each blower is rated for 1350 – 3600 SCFM @ 55 in. w.c. inlet vacuum and 15 in. w.c. discharge pressure, 100 deg. F, 100 ft. asl.)
   - Associated instrumentation including vacuum, pressure and temperature gauges
   - Two sets of associated Flex Couplings, manual isolation valves, and check valves
   - One 14 in. fail safe automatic pneumatic header valve (Note: LFG Specialties takes exception to the electric valve)
   - One 48 in. condensate knock out pot with 20 micron demister/filter, 14 in. inlet and 14 in. outlet, sight glass, level switch, and drain port
   - Condensate drain piping and automatic drip traps
   - One control rack with:
     - Flame-Trol III automatic flare controller with touch-screen interface with blower amp and blower hours displays
     - Main power disconnect and step down transformer
     - Structural roof for heat and weather protection
   - Two 75 HP Variable Frequency Drives and vacuum transmitter

- One each thermal dispersion Flow Meter with totalizer and Yokogawa six channel paperless chart recorder to record flame temperature and landfill gas flow
- One eight channel Raco Verbatim Autodialer
- 10 ft. wide by 40 ft. long structural steel skid
- All skid components interconnecting piping and wiring
- Three copies of O & M Manual, cut sheets, and drawings

2010, 2011 & 2012 inflation Adjustments

Notes:

1. System is designed to meet or exceed the requirements in specification section 11910.
2. All installation by others
3. Landfill gas supply system must be properly engineered to provide a stable gas supply for the flare system to function properly.
4. A properly designed condensate removal system must be in place within 50 ft. upstream of the flare system for reliable operation.
5. The flare system must be supplied power from a stable energy source with a voltage deviation of no more than 7%.

B. Price Schedule: $220,120 x 1.02 x 1.01 x 1.01 = $229,035.00

Price for the LFG Specialties Model PCFT1444I12 Utility Flare System as described in Section A, item 1 FOB Findlay, OH, excluding tax, is **$ 205,930.00**

Three days of start-up assistance and training (travel and living expenses are included) **$ 4,690.00**

*NOTE: Should the system not be commissioned by LFG Specialties, the warranty will be void.

Estimated shipping and handling from LFG Specialties shop to site (shipping to be charged at actual cost plus 15% handling fee) **$ 9,500.00**

**ALL PRICING IS FOB — FINDLAY, OHIO**

**Options:**

1. One day of Semi-Annual or Annual Preventative Maintenance (travel and living expenses are included). Price is per visit. Additional information available upon request.

**PRICE ADDER:** **$ 3,764.00**

C. Shipment Terms:

Shipment terms are F.O.B. LFG Specialties' facilities, Findlay, Ohio. LFG Specialties Sales Agreement calls for the Purchaser to pay all installation costs, freight from our facility to the project site, and all applicable taxes and necessary freight insurance.

D. Shipment Schedule:

LFG Specialties makes every effort to meet our Customers delivery requests and special requirements. Delivery for the flare system outlined in this Agreement is:

Submittal Drawings: 4 weeks after receipt of order for submittal drawings
Equipment Shipment: 12 to 16 weeks from receipt of approval for submittal drawings
(Actual delivery to be determined at time of submittal approval)

# BID WORKSHEET
## J.E.D. Solid Waste Management Facility
Phase 1 - Gas Collection and Control System
Revised May 9, 2008 - Mike Kaiser

| Item/Description | Unit | Quantity | Unit Cost | Subtotal Cost |
|---|---|---|---|---|
| **General** | | | | |
| Mobilization/Demobilization | LS | 1 | 5% of Total | $ 19,500.00 |
| Erosion and Sediment Control | LS | 1 | $ 7,760.00 | $ 7,760.00 |
| Survey | LS | 1 | $ 11,300.00 | $ 11,300.00 |
| **HDPE Header and Lateral Piping** | | | | |
| 6" SDR-17 Lateral Pipe | LF | 2800 | $ 18.00 | $ 50,400.00 |
| 8" SDR-17 LateralPipe | LF | 200 | $ 24.00 | $ 4,800.00 |
| 12" SDR-17 Pipe, Header | LF | 350 | $ 34.00 | $ 11,900.00 |
| 14" SDR-17 Pipe, Header | LF | 310 | $ 41.00 | $ 12,710.00 |
| 18" SDR-17 Pipe, Header | LF | 1650 | $ 59.00 | $ 97,350.00 |
| 20" SDR-17 Pipe, Header | LF | 310 | $ 79.00 | $ 24,490.00 |
| 24" SDR-17 Pipe, Header | LF | 100 | $ 160.00 | $ 16,000.00 |
| **Valves and Other Components** | | | | |
| Fittings | LS | 1 | $ 15,000.00 | $ 15,000.00 |
| Header Access Riser (Header High Points) | EA | 1 | $ 1,000.00 | $ 1,000.00 |
| 14" Isolation Butterfly Valve | EA | 1 | $ 8,200.00 | $ 8,200.00 |
| 18" Isolation Butterfly Valve | EA | 1 | $ 16,000.00 | $ 16,000.00 |
| 20" Isolation Butterfly Valve | EA | 1 | $ 19,000.00 | $ 19,000.00 |
| **Gas Extraction Wells** | | | | |
| Gas Well Head Assemply | EA | 29 | $ 1,200.00 | $ 34,800.00 |
| 8" Sch 80 PVC Perforated Gas Extraction Well Section | LF | 1410 | $ 51.50 | $ 72,615.00 |
| 8" Sch 80 PVC Solid Gas Extraction Well Section | LF | 587 | $ 34.00 | $ 19,958.00 |
| Vertical Well Drilling (36-inch diameter) | LF | 1910 | $ 27.00 | $ 51,570.00 |
| **Condensate Collection & Management** | | | | |
| Condensate Drains at Leachate Cleanouts | EA | 3 | $ 6,500.00 | $ 19,500.00 |
| HDPE 36" Dia. Knockout Pot at Flare Station | EA | 1 | $ 15,000.00 | $ 15,000.00 |
| Condensate Management System at Flare Station | LS | 1 | $ 18,000.00 | $ 18,000.00 |
| **Gas Flare Station** | | | | |
| Flare Station Pad (Excavation, Fill and Grading) | LS | 1 | $ 13,000.00 | $ 13,000.00 |
| Gas Flare Station Receiving & Installation | LS | 1 | $ 10,900.00 | $ 10,900.00 |
| Electrical | LS | 1 | $ 23,000.00 | $ 23,000.00 |
| 8' Tall Chain Link Fencing | LF | 160 | $ 29.00 | $ 4,640.00 |
| 4' Wide Man Gate | EA | 1 | $ 520.00 | $ 520.00 |
| Sodding | SF | 1000 | $ 2.00 | $ 2,000.00 |
| 12" Thick 3/4" Gravel with Geofabric | SF | 1250 | $ 3.50 | $ 4,375.00 |
| Retaining Wall and Footing (8' H x 8" W) | LF | 80 | $ 350.00 | $ 28,000.00 |
| Start-up Support | LS | 1 | $ 4,690.00 | $ ~~4,690.00~~ |
| **TOTAL CONSTRUCTION COSTS** | | | | $ 637,978.00 |

In flare purchase

**Notes:**
1. Mobilization and demobilization shall not exceed 5% of total.

Flare Installation 2008
$ 86,435.00

ADD 2010, 2011 & 2012 Inflation Adjustments

$ 86,435.00 x 1.02 x 1.01 x 1.01 = $ 89,935.79

# APPENDIX A-3

## Leachate Generation Rates: Supporting Calculations

## Long-term Leachate Generation Rates

Once a landfill is closed, the leachate generated from storm water infiltration is greatly reduced due to the presence of the final cover. However, waste in the landfill retains moisture during the life of the facility (i.e., field capacity). Leachate retained by the waste is released over time and is proportional to consolidation of the waste. Terzaghi's theory of consolidation shows that consolidation rates decrease exponentially (Terzaghi et al. 1996); therefore, an exponential drop in leachate generation is also anticipated. Furthermore, a study performed by Bonaparte et al. (2002) based on measured data for several landfills shows that leachate generation rates for closed landfills typically decreased (i) by a factor of four within one year after closure and (ii) by one order of magnitude within two to four years after closure; and nine years after closure, leachate generation rates were negligible.

For the purpose of the calculations presented herein, two approaches were used to establish a leachate generation rate: (i) HELP Model analysis and (ii) exponential average suggested by Bonaparte et al. (2002). The two methods were then compared and the most conservative used. The two methods are discussed below.

The HELP model analysis (based on Case 4 analyzed for maximum waste thickness of 220 ft in the calculation package entitled Leachate Management System submitted as part of the Major Modification Application for Vertical Expansion of the J.E.D. Solid Waste Management Facility Phases 1 through 3, dated August 2007) accounts for the presence of the final cover and calculates the annual average over a 30-year period. The HELP model was used to estimate leachate generation due to contributions from the top deck and side slopes. A weighted average was then established based on the top deck and side slope areas to estimate the post-closure leachate generation rates $\Theta_{post}$. Note that the leachate generation rate calculated using HELP represents an annual average over a 30-year period.

The average annual leachate generation rate estimated based on the exponential average suggested by Bonaparte et al. (2002), accounts for site specific 2010 and 2011 year ending leachate generation volumes to establish the initial leachage generation rate of the facility. The leachate generation rate before closure was calculated based on the generated volumes assuming the area for Cells 1 through 6 (2010 leachate generation volumes) and for Cells 1 through 7 (2011 leachate generation volumes). The leachate generation rate before closure, $\Theta_{pre}$, was used as the leachate generation rates for the first year post-closure and trends based on Bonaparte et al. (2002) used to estimate an average 30-year leachate generation rate $\Theta_{mean}$.

The HELP model input summary and output are provided as part of Appendix A-4.

The calculations presented herein have been prepared to estimate the average leachate generation rate, $\Theta_{mean}$, for use in the Annual Cost for Long Term Care, Leachate Collection/Treatment System Maintenance section of the FDEP Form 62-701.900(28).

**Closure-specific Input Parameters (see Figure 1):**

Top deck area: $A_{top} := 9.35acre$ Side slope area: $A_{side} := 90.65acre$

## HELP Model analysis for closed landfill

**30-year Annual Average - Post-closure**

Leachate collected on layer 7 - top deck: $\Theta_{top} := 0.96881 \frac{in}{yr}$

Leachate collected on layer 7 - side slope: $\Theta_{side} := 0.22117 \frac{in}{yr}$

**Weighted Average (top deck and side slope areas) based on HELP model analysis results:**

$$\Theta_{post} := \frac{A_{top} \cdot \Theta_{top} + A_{side} \cdot \Theta_{side}}{A_{top} + A_{side}} = 0.291 \cdot \frac{in}{yr}$$

## Estimated leachate generation trends based on Bonaparte et al. (2002):

**Active areas used to calculate leachate generation rates under operating conditions (pre-closure):**

2010 Leachate volumes apply to the area for Cells 1-6: $A_{1.6} := (18 + 12 + 12 + 11 + 11.2 + 12.5)acre$

2011 Leachate volumes apply to the area for Cells 1-7: $A_{1.7} := A_{1.6} + 12acre$

**Measured leachate generation volumes for the site:**

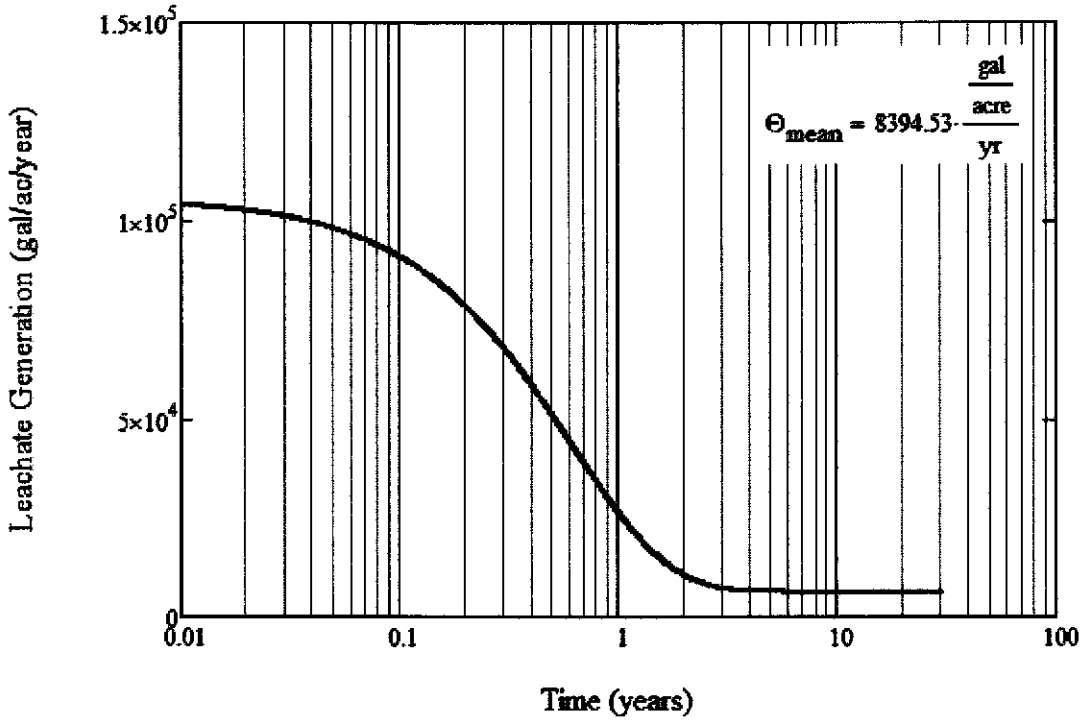
$$\Theta_{2010} := 7818875 \frac{\frac{gal}{A_{1.6}}}{yr} \qquad \Theta_{2011} := 9695343 \frac{\frac{gal}{A_{1.7}}}{yr}$$

Average Annual leachate generation rate - Pre-closure: $\Theta_{pre} := mean(\Theta_{2010}, \Theta_{2011}) = 3.89 \cdot \frac{in}{yr}$

**Plot parameters:** Start time: $t_0 := 0yr$

End time: $t_{fin} := 30yr$

The following plot shows leachate generation (gal/ac/year) as a function of time (years) for the facility assuming the leachate generation rate drop indicated by Bonaparte et al. (2002). Mathematical integration of the leachate generation plot between 0 and 30 years yields an average leachate generation rate equal to $\Theta_{mean} = 0.309 \cdot \frac{in}{yr}$.




Average volume of leachate generated per year: $Vol_{year} := \Theta_{mean} \cdot (A_{top} + A_{side})$

Based on the average leachate generation rate ($\Theta_{mean}$) and an area equal to 100 acres (as shown in Figure 1), the calculated leachate generated per year is equal to $Vol_{year} = 839452.9 \cdot \frac{gal}{yr}$.

Note that $\Theta_{mean}$ is higher than $\Theta_{post}$ calculated using the HELP model and therefore, conservatively used to establish the leachate generated per year.

*References: Major Modification Application for Vertical Expansion of the JED Solid Waste Management Facility (Phases 1 through 3) - Appendix G: Leachate Management System.*

*Appendix A-4: Financial Assurance Cost Estimate for Closure of Cells 1-8: Notes and Calculations.*

*Terzaghi, K., Peck, R. B., Mesri, G., 1996. "Soil Mechanics in Engineering Practice," Third Edition. John Wiley & Sons, Inc.*

*Bonaparte, R., Daniel, D. E., and Koerner, R. M., 2002. "Assessment and Recommendations for Improving the Performance of Waste Containment Systems," United States Environmental Protection Agency (EPA) Technical Resource Document.*

# APPENDIX A-4

## Leachate Generation Rates: Supporting Documents

# Measured Monthly Leachate Volumes

**MEASURED LEACHATE VOLUES FOR 2010**

**J.E.D Solid Waste Management Facility**

**Osceola County, Florida**

| | Cell 1 | Cell 2 | Cell 3 | Cell 4 | Cell 5 | Cell 6 | Total |
|---|---|---|---|---|---|---|---|
| **Jan-10** | 99,916 | 44,236 | 84,918 | 43,002 | 55,156 | 96,855 | 424,083 |
| **Feb-10** | 99,861 | 48,947 | 86,979 | 56,230 | 70,894 | 195,919 | 558,830 |
| **Mar-10** | 107,453 | 58,289 | 101,710 | 77,239 | 107,817 | 191,003 | 643,511 |
| **Apr-10** | 102,605 | 46,403 | 78,487 | 70,989 | 112,005 | 183,005 | 593,494 |
| **May-10** | 137,427 | 69,976 | 91,116 | 85,456 | 118,412 | 230,177 | 732,564 |
| **Jun-10** | 120,618 | 52,834 | 77,651 | 65,227 | 132,609 | 267,814 | 716,753 |
| **Jul-10** | 125,612 | 58,897 | 92,999 | 90,741 | 150,765 | 273,297 | 792,311 |
| **Aug-10** | 120,519 | 57,690 | 90,855 | 106,733 | 151,498 | 251,163 | 778,458 |
| **Sep-10** | 121,590 | 53,125 | 113,109 | 77,195 | 166,309 | 263,336 | 794,664 |
| **Oct-10** | 102,615 | 43,756 | 90,142 | 87,888 | 41,419 | 192,479 | 558,299 |
| **Nov-10** | 124,767 | 54,068 | 132,301 | 53,363 | 69,702 | 207,588 | 641,789 |
| **Dec-10** | 124,394 | 54,024 | 109,233 | 83,558 | 23,473 | 189,437 | 584,119 |
| **Yearly Totals** | 1,387,377 | 642,245 | 1,149,500 | 897,621 | 1,200,059 | 2,542,073 | **7,818,875** |

**MEASURED LEACHATE VOLUES FOR 2011**

**J.E.D Solid Waste Management Facility**

**Osceola County, Florida**

| | Cell 1 | Cell 2 | Cell 3 | Cell 4 | Cell 5 | Cell 6 | Cell 7 | Total |
|---|---|---|---|---|---|---|---|---|
| **Jan-11** | 100,173 | 45,267 | 119,479 | 40,249 | 273,405 | 157,461 | | 736,034 |
| **Feb-11** | 97,425 | 41,572 | 110,206 | 91,496 | 175,115 | 160,679 | | 676,493 |
| **Mar-11** | 107,960 | 46,265 | 105,426 | 146,174 | 214,643 | 173,117 | | 793,585 |
| **Apr-11** | 97,526 | 49,863 | 109,629 | 114,559 | 204,573 | 180,317 | | 756,467 |
| **May-11** | 96,684 | 49,060 | 107,818 | 121,473 | 208,106 | 166,258 | | 749,399 |
| **Jun-11** | 86,234 | 42,587 | 91,423 | 118,822 | 164,693 | 134,241 | | 638,000 |
| **Jul-11** | 79,915 | 59,504 | 101,254 | 133,029 | 196,501 | 162,339 | | 732,542 |
| **Aug-11** | 89,078 | 64,266 | 140,105 | 80,668 | 227,226 | 209,106 | | 810,449 |
| **Sep-11** | 143,128 | 49,147 | 92,355 | 70,098 | 305,564 | 183,995 | | 844,287 |
| **Oct-11** | 101,609 | 73,356 | 126,822 | 141,244 | 380,096 | 266,340 | | 1,089,467 |
| **Nov-11** | 103,143 | 66,943 | 94,279 | 65,884 | 279,044 | 197,472 | 221,274 | 1,028,039 |
| **Dec-11** | 101,715 | 50,810 | 83,965 | 104,678 | 197,941 | 182,332 | 119,140 | 840,581 |
| **Yearly Totals** | 1,204,590 | 638,640 | 1,282,761 | 1,228,374 | 2,826,907 | 2,173,657 | 340,414 | **9,695,343** |

# HELP Input Summary

**INPUT DATA, POST-CLOSURE ANALYSIS - TOP DECK**
**J.E.D. SOLID WASTE MANAGEMENT FACILITY**
**OSCEOLA COUNTY, FLORIDA**

**WEATHER DATA AND SOIL LAYERS PROPERTIES**

**Precipitation**

| Data | Value |
|---|---|
| Nearby city | Orlando/Fort Drum |
| State | Florida |
| Years for data generation | 30 |

**Temperature**

| Data | Value |
|---|---|
| Nearby city | Tampa |
| State | Florida |
| Years for data generation | 30 |

**Normal mean monthly temperature (°F)**

| | | | |
|---|---|---|---|
| January | 60.5 | July | 82.4 |
| February | 61.5 | August | 82.5 |
| March | 66.8 | September | 81.1 |
| April | 72.0 | October | 74.9 |
| May | 77.3 | November | 67.5 |
| June | 80.9 | December | 62.0 |

**Evapotranspiration data**

| Data | Value | Units |
|---|---|---|
| Nearby city | Orlando/Fort Drum | |
| State | Florida | |
| Latitude | 27.8 | |
| Evaporative zone depth | | |
| bare | 10 | |
| ***fair*** | ***22*** | |
| excellent | 40 | |
| Maximum leaf area index | | |
| bare ground | 0 | |
| poor stand of grass | 1 | |
| fair stand of grass | 2 | |
| ***good stand of grass*** | ***3.5*** | |
| excellent stand of grass | 5 | |
| Growing season start day | 0 | |
| Growing season end day | 367 | |
| Average wind speed | 8.6 | mph |
| First quarter relative humidity | 72 | % |
| Second quarter relative humidity | 72 | % |
| Third quarter relative humidity | 80 | % |
| Fourth quarter relative humidity | 76 | % |

**Runoff Curve Number**

| Data | Value |
|---|---|
| Slope | 5% |
| Slope Length (ft) | 400 |
| Soil Texture | 5 |
| Vegetation | 3 |
| Curve Number | 64.5 |

**Geomembrane and Area**

| Data | Value |
|---|---|
| Placement of geomembrane | good (3) |
| Pinhole (# of defects/area) | 2 |
| Defect density per acre | 2 |
| Area assumed in program (acre) | 1 |

**Solar Radiation**

| Data | Value |
|---|---|
| Nearby city | Orlando/Fort Drum |
| State | Florida |
| Years for data generation | 30 |

**Properties of soil layers**

| Layer | Type | Description | Thickness (in) | Texture number | Porosity (vol/vol) | Field cap. (vol/vol) | Wilting point (vol/vol) | k (cm/s) | Drain Length (ft) | Liner slope |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Vertical percolation | 6.00 | 9 | 0.501 | 0.284 | 0.135 | 1.90E-04 | | |
| 2 | 2 | Lateral Drainage | 18.00 | 5 | 0.457 | 0.131 | 0.058 | 1.00E-03 | 400 | 5.0% |
| 3 | 4 | Geomembrane Liner | 0.04 | 35 | 2E-13 | | | | | |
| 4 | 1 | Vertical percolation | 12.00 | 5 | 0.457 | 0.131 | 0.058 | 4.57E-01 | | |
| 5 | 1 | Vertical percolation | 1800.00 | 18 | 0.671 | 0.292 | 0.077 | 1.00E-03 | | |
| 6 | 1 | Vertical percolation | 24.00 | 0 | 0.417 | 0.045 | 0.018 | 1.00E-03 | | |
| 7 | 2 | Lateral Drainage | 0.30 | 0 | 0.850 | 0.010 | 0.005 | 9.75E+00 | 800 | 1.5% |
| 8 | 4 | Geomembrane Liner | 0.06 | 35 | 0.000 | | | | | |
| 9 | 3 | Soil barrier | 0.25 | 17 | 0.750 | 0.747 | 0.400 | 3.00E-09 | | |
| 10 | 2 | Lateral Drainage | 0.20 | 0 | 0.850 | 0.010 | 0.005 | 4.90E-01 | 800 | 1.5% |
| 11 | 4 | Geomembrane Liner | 0.06 | 35 | 0.000 | | | | | |
| 12 | 3 | Soil barrier | 0.25 | 17 | 0.750 | 0.747 | 0.400 | 3.00E-09 | | |
| 13 | 1 | Vertical percolation | 120.00 | 5 | 0.457 | 0.131 | 0.058 | 1.00E-03 | | |

Note: For explanation, justification, and description of input parameters Refer to calculation package entitled *Leachate Management System* submitted as part of the Major Modification Application for Vertical Expansion of the J.E.D. Solid Waste Management Facility Phases 1 through 3, dated August 2007.

**INPUT DATA, POST-CLOSURE ANALYSIS - SIDE SLOPE**
**J.E.D. SOLID WASTE MANAGEMENT FACILITY**
**OSCEOLA COUNTY, FLORIDA**

**WEATHER DATA AND SOIL LAYERS PROPERTIES**

**Precipitation**

| Data | Value |
|---|---|
| Nearby city | Orlando/Fort Drum |
| State | Florida |
| Years for data generation | 30 |

**Temperature**

| Data | Value |
|---|---|
| Nearby city | Tampa |
| State | Florida |
| Years for data generation | 30 |

**Normal mean monthly temperature (°F)**

| | | | |
|---|---|---|---|
| January | 60.5 | July | 82.4 |
| February | 61.5 | August | 82.5 |
| March | 66.8 | September | 81.1 |
| April | 72.0 | October | 74.9 |
| May | 77.3 | November | 67.5 |
| June | 80.9 | December | 62.0 |

**Evapotranspiration data**

| Data | Value | Units |
|---|---|---|
| Nearby city | Orlando/Fort Drum | |
| State | Florida | |
| Latitude | 27.8 | |
| Evaporative zone depth | | |
| bare | 10 | |
| ***fair*** | ***22*** | |
| excellent | 40 | |
| Maximum leaf area index | | |
| bare ground | 0 | |
| poor stand of grass | 1 | |
| fair stand of grass | 2 | |
| ***good stand of grass*** | ***3.5*** | |
| excellent stand of grass | 5 | |
| Growing season start day | 0 | |
| Growing season end day | 367 | |
| Average wind speed | 8.6 | mph |
| First quarter relative humidity | 72 | % |
| Second quarter relative humidity | 72 | % |
| Third quarter relative humidity | 80 | % |
| Fourth quarter relative humidity | 76 | % |

**Runoff Curve Number**

| Data | Value |
|---|---|
| Slope | 33% |
| Slope Length (ft) | 120 |
| Soil Texture | 5 |
| Vegetation | 3 |
| Curve Number | 69.2 |

**Geomembrane and Area**

| Data | Value |
|---|---|
| Placement of geomembrane | good (3) |
| Pinhole (# of defects/area) | 2 |
| Defect density per acre | 2 |
| Area assumed in program (acre) | 1 |

**Solar Radiation**

| Data | Value |
|---|---|
| Nearby city | Orlando/Fort Drum |
| State | Florida |
| Years for data generation | 30 |

**Properties of soil layers**

| Layer | Type | Description | Thickness (in) | Texture number | Porosity (vol/vol) | Field cap. (vol/vol) | Wilting point (vol/vol) | k (cm/s) | Drain Length (ft) | Liner slope |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Vertical percolation | 6.00 | 9 | 0.501 | 0.284 | 0.135 | 1.90E-04 | | |
| 2 | 2 | Lateral Drainage | 18.00 | 5 | 0.457 | 0.131 | 0.058 | 1.00E-03 | 120 | 33.3% |
| 3 | 4 | Geomembrane Liner | 0.04 | 35 | 2E-13 | | | | | |
| 4 | 1 | Vertical percolation | 12.00 | 5 | 0.457 | 0.131 | 0.058 | 4.57E-01 | | |
| 5 | 1 | Vertical percolation | 1320.00 | 18 | 0.671 | 0.292 | 0.077 | 1.00E-03 | | |
| 6 | 1 | Vertical percolation | 24.00 | 0 | 0.417 | 0.045 | 0.018 | 1.00E-03 | | |
| 7 | 2 | Lateral Drainage | 0.30 | 0 | 0.850 | 0.010 | 0.005 | 9.75E+00 | 800 | 1.5% |
| 8 | 4 | Geomembrane Liner | 0.06 | 35 | 0.000 | | | | | |
| 9 | 3 | Soil barrier | 0.25 | 17 | 0.750 | 0.747 | 0.400 | 3.00E-09 | | |
| 10 | 2 | Lateral Drainage | 0.20 | 0 | 0.850 | 0.010 | 0.005 | 4.90E-01 | 800 | 1.5% |
| 11 | 4 | Geomembrane Liner | 0.06 | 35 | 0.000 | | | | | |
| 12 | 3 | Soil barrier | 0.25 | 17 | 0.750 | 0.747 | 0.400 | 3.00E-09 | | |
| 13 | 1 | Vertical percolation | 120.00 | 5 | 0.457 | 0.131 | 0.058 | 1.00E-03 | | |

Note: For explanation, justification, and description of input parameters Refer to calculation package entitled *Leachate Management System* submitted as part of the Major Modification Application for Vertical Expansion of the J.E.D. Solid Waste Management Facility Phases 1 through 3, dated August 2007.

```
**************************************************************************
**************************************************************************
**                                                                      **
**                                                                      **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE            **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)            **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY              **
**                     USAE WATERWAYS EXPERIMENT STATION                **
**              FOR USEPA RISK REDUCTION ENGINEERING LABORATORY          **
**                                                                      **
**                                                                      **
**************************************************************************
**************************************************************************
PRECIPITATION DATA FILE:     c:\help\prj\jed\PREC.D4
TEMPERATURE DATA FILE:       c:\help\prj\jed\TEMP.D7
SOLAR RADIATION DATA FILE:   c:\help\prj\jed\SOLRAD.D13
EVAPOTRANSPIRATION DATA:     c:\help\prj\jed\EVAPO.D11
SOIL AND DESIGN DATA FILE:   c:\help\prj\jed\TOPDECK.D10
OUTPUT DATA FILE:            c:\help\prj\jed\TOPDECK.OUT
TIME:  15: 0     DATE:   4/ 2/2012
**************************************************************************
     TITLE:  JED Post-closure Leachate Generation: Top Deck
**************************************************************************
     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
            COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.
                                LAYER  1
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   9
          THICKNESS                     =      6.00   INCHES
          POROSITY                      =    0.5010 VOL/VOL
          FIELD CAPACITY                =    0.2840 VOL/VOL
          WILTING POINT                 =    0.1350 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.1242 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.190000006000E-03 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  4.63
               FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
                                LAYER  2
                                --------
                    TYPE 2 - LATERAL DRAINAGE LAYER
                      MATERIAL TEXTURE NUMBER   5
          THICKNESS                     =     18.00   INCHES
          POROSITY                      =    0.4570 VOL/VOL
          FIELD CAPACITY                =    0.1310 VOL/VOL
          WILTING POINT                 =    0.0580 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.0957 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.100000005000E-02 CM/SEC
          SLOPE                         =     5.00   PERCENT
          DRAINAGE LENGTH               =    300.0   FEET
                                LAYER  3
                                --------
                    TYPE 4 - FLEXIBLE MEMBRANE LINER
                      MATERIAL TEXTURE NUMBER  35
          THICKNESS                     =     0.04   INCHES
          POROSITY                      =    0.0000 VOL/VOL
          FIELD CAPACITY                =    0.0000 VOL/VOL
          WILTING POINT                 =    0.0000 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.0000 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.199999996000E-12 CM/SEC
          FML PINHOLE DENSITY           =     2.00   HOLES/ACRE
          FML INSTALLATION DEFECTS      =     2.00   HOLES/ACRE
          FML PLACEMENT QUALITY         =  3 - GOOD
                                LAYER  4
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   5
          THICKNESS                     =    12.00   INCHES
          POROSITY                      =    0.4570 VOL/VOL
          FIELD CAPACITY                =    0.1310 VOL/VOL
          WILTING POINT                 =    0.0580 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.1684 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.100000005000E-02 CM/SEC
                                LAYER  5
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER  18
          THICKNESS                     =  2640.00   INCHES
          POROSITY                      =    0.6710 VOL/VOL
          FIELD CAPACITY                =    0.2920 VOL/VOL
          WILTING POINT                 =    0.0770 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.2920 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.100000005000E-02 CM/SEC
                                LAYER  6
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   0
          THICKNESS                     =    24.00   INCHES
          POROSITY                      =    0.4170 VOL/VOL
          FIELD CAPACITY                =    0.0450 VOL/VOL
          WILTING POINT                 =    0.0180 VOL/VOL
          INITIAL SOIL WATER CONTENT    =    0.0479 VOL/VOL
          EFFECTIVE SAT. HYD. COND.     =  0.100000005000E-02 CM/SEC
```

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.30 | INCHES |
| POROSITY | = | 0.8500 | VOL/VOL |
| FIELD CAPACITY | = | 0.0100 | VOL/VOL |
| WILTING POINT | = | 0.0050 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0100 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 9.75000000000 | CM/SEC |
| SLOPE | = | 1.50 | PERCENT |
| DRAINAGE LENGTH | = | 800.0 | FEET |

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.06 | INCHES |
| POROSITY | = | 0.0000 | VOL/VOL |
| FIELD CAPACITY | = | 0.0000 | VOL/VOL |
| WILTING POINT | = | 0.0000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0000 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.199999996000E-12 | CM/SEC |
| FML PINHOLE DENSITY | = | 2.00 | HOLES/ACRE |
| FML INSTALLATION DEFECTS | = | 2.00 | HOLES/ACRE |
| FML PLACEMENT QUALITY | = | 3 - GOOD | |

LAYER 9

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.25 | INCHES |
| POROSITY | = | 0.7500 | VOL/VOL |
| FIELD CAPACITY | = | 0.7470 | VOL/VOL |
| WILTING POINT | = | 0.4000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.7500 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.300000003000E-08 | CM/SEC |

LAYER 10

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.20 | INCHES |
| POROSITY | = | 0.8500 | VOL/VOL |
| FIELD CAPACITY | = | 0.0100 | VOL/VOL |
| WILTING POINT | = | 0.0050 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0100 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.490000010000 | CM/SEC |
| SLOPE | = | 1.50 | PERCENT |
| DRAINAGE LENGTH | = | 800.0 | FEET |

LAYER 11

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.06 | INCHES |
| POROSITY | = | 0.0000 | VOL/VOL |
| FIELD CAPACITY | = | 0.0000 | VOL/VOL |
| WILTING POINT | = | 0.0000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0000 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.199999996000E-12 | CM/SEC |
| FML PINHOLE DENSITY | = | 2.00 | HOLES/ACRE |
| FML INSTALLATION DEFECTS | = | 2.00 | HOLES/ACRE |
| FML PLACEMENT QUALITY | = | 3 - GOOD | |

LAYER 12

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.25 | INCHES |
| POROSITY | = | 0.7500 | VOL/VOL |
| FIELD CAPACITY | = | 0.7470 | VOL/VOL |
| WILTING POINT | = | 0.4000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.7500 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.300000003000E-08 | CM/SEC |

LAYER 13

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 5

| | | | |
|---|---|---|---|
| THICKNESS | = | 120.00 | INCHES |
| POROSITY | = | 0.4570 | VOL/VOL |
| FIELD CAPACITY | = | 0.1310 | VOL/VOL |
| WILTING POINT | = | 0.0580 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.1310 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.100000005000E-02 | CM/SEC |

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 9 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 5.% AND A SLOPE LENGTH OF 300. FEET.

| | | | |
|---|---|---|---|
| SCS RUNOFF CURVE NUMBER | = | 82.10 | |
| FRACTION OF AREA ALLOWING RUNOFF | = | 100.0 | PERCENT |
| AREA PROJECTED ON HORIZONTAL PLANE | = | 1.000 | ACRES |
| EVAPORATIVE ZONE DEPTH | = | 22.0 | INCHES |
| INITIAL WATER IN EVAPORATIVE ZONE | = | 1.739 | INCHES |
| UPPER LIMIT OF EVAPORATIVE STORAGE | = | 10.318 | INCHES |

LOWER LIMIT OF EVAPORATIVE STORAGE = 1.738 INCHES
INITIAL SNOW WATER = 0.000 INCHES
INITIAL WATER IN LAYER MATERIALS = 792.618 INCHES
TOTAL INITIAL WATER = 792.618 INCHES
TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM ORLANDO/FORT DRUM FLORIDA

STATION LATITUDE = 27.80 DEGREES
MAXIMUM LEAF AREA INDEX = 3.50
START OF GROWING SEASON (JULIAN DATE) = 0
END OF GROWING SEASON (JULIAN DATE) = 367
EVAPORATIVE ZONE DEPTH = 22.0 INCHES
AVERAGE ANNUAL WIND SPEED = 8.60 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 72.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 72.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 80.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 76.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO/FORT DRUM FLORIDA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

| JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|
| 2.27 | 2.47 | 3.78 | 2.43 | 4.47 | 8.05 |
| 7.60 | 7.27 | 6.60 | 3.73 | 2.30 | 1.86 |

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO FLORIDA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

| JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|
| 60.50 | 61.50 | 66.80 | 72.00 | 77.30 | 80.90 |
| 82.40 | 82.50 | 81.10 | 74.90 | 67.50 | 62.00 |

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO FLORIDA AND STATION LATITUDE = 27.80 DEGREES

**********

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

| | JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|---|
| PRECIPITATION | | | | | | |
| TOTALS | 1.91 | 2.07 | 3.80 | 2.31 | 4.78 | 5.90 |
| | 7.04 | 7.42 | 5.97 | 4.01 | 1.90 | 1.81 |
| STD. DEVIATIONS | 1.19 | 2.05 | 4.25 | 2.30 | 3.31 | 4.10 |
| | 3.75 | 3.81 | 2.96 | 3.66 | 1.29 | 1.18 |
| RUNOFF | | | | | | |
| TOTALS | 0.033 | 0.125 | 0.828 | 0.234 | 0.474 | 0.842 |
| | 1.071 | 1.129 | 0.533 | 0.834 | 0.057 | 0.035 |
| STD. DEVIATIONS | 0.107 | 0.434 | 1.874 | 0.427 | 0.630 | 1.274 |
| | 1.526 | 1.300 | 0.668 | 1.538 | 0.137 | 0.088 |
| EVAPOTRANSPIRATION | | | | | | |
| TOTALS | 1.558 | 2.346 | 2.689 | 2.572 | 3.603 | 4.959 |
| | 5.054 | 5.298 | 4.902 | 3.650 | 2.368 | 1.538 |
| STD. DEVIATIONS | 0.772 | 1.050 | 1.498 | 1.884 | 2.107 | 2.252 |
| | 1.597 | 1.668 | 1.108 | 1.281 | 1.034 | 0.673 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 2 | | | | | | |
| TOTALS | 0.0808 | 0.0636 | 0.0601 | 0.0724 | 0.0577 | 0.0676 |
| | 0.0925 | 0.1143 | 0.1639 | 0.1508 | 0.1123 | 0.0914 |
| STD. DEVIATIONS | 0.0665 | 0.0499 | 0.0499 | 0.0965 | 0.0470 | 0.0500 |
| | 0.1082 | 0.1171 | 0.1204 | 0.1138 | 0.0995 | 0.0685 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | | | | | | |
| TOTALS | 0.0733 | 0.0582 | 0.0562 | 0.0686 | 0.0546 | 0.0624 |
| | 0.0871 | 0.1065 | 0.1488 | 0.1366 | 0.1015 | 0.0820 |
| STD. DEVIATIONS | 0.0574 | 0.0423 | 0.0432 | 0.0917 | 0.0422 | 0.0429 |
| | 0.1032 | 0.1125 | 0.1094 | 0.1042 | 0.0896 | 0.0586 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 7 | | | | | | |
| TOTALS | 0.0971 | 0.0912 | 0.0941 | 0.0899 | 0.0773 | 0.0731 |
| | 0.0766 | 0.0719 | 0.0689 | 0.0714 | 0.0647 | 0.0926 |
| STD. DEVIATIONS | 0.0861 | 0.0650 | 0.0636 | 0.0598 | 0.0483 | 0.0409 |
| | 0.0415 | 0.0415 | 0.0456 | 0.0471 | 0.0554 | 0.0886 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 10 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

PERCOLATION/LEAKAGE THROUGH LAYER 13

| | | | | | | |
|---|---|---|---|---|---|---|
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 2.7643 | 2.3969 | 2.0572 | 2.5644 | 1.9763 | 2.3915 |
| | 3.1734 | 3.9187 | 5.7960 | 5.1629 | 3.9723 | 3.1276 |
| STD. DEVIATIONS | 2.2745 | 1.8923 | 1.7115 | 3.4258 | 1.6120 | 1.7683 |
| | 3.7293 | 4.0279 | 4.2569 | 3.8958 | 3.5194 | 2.3454 |

DAILY AVERAGE HEAD ON TOP OF LAYER 8

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 0.0030 | 0.0031 | 0.0029 | 0.0029 | 0.0024 | 0.0024 |
| | 0.0024 | 0.0022 | 0.0022 | 0.0022 | 0.0021 | 0.0029 |
| STD. DEVIATIONS | 0.0027 | 0.0022 | 0.0020 | 0.0019 | 0.0015 | 0.0013 |
| | 0.0013 | 0.0013 | 0.0015 | 0.0015 | 0.0018 | 0.0028 |

DAILY AVERAGE HEAD ON TOP OF LAYER 11

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

| | INCHES | | CU. FEET | PERCENT |
|---|---|---|---|---|
| PRECIPITATION | 48.91 | ( 10.219) | 177546.9 | 100.00 |
| RUNOFF | 6.193 | ( 3.4436) | 22481.49 | 12.662 |
| EVAPOTRANSPIRATION | 40.537 | ( 7.0292) | 147149.36 | 82.879 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 2 | 1.12745 | ( 0.49335) | 4092.636 | 2.30510 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | 1.03592 | ( 0.44488) | 3760.390 | 2.11797 |
| AVERAGE HEAD ON TOP OF LAYER 3 | 3.275 | ( 1.432) | | |
| LATERAL DRAINAGE COLLECTED FROM LAYER 7 | 0.96881 | ( 0.46555) | 3516.783 | 1.98076 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | 0.00000 | ( 0.00000) | 0.009 | 0.00001 |
| AVERAGE HEAD ON TOP OF LAYER 8 | 0.003 | ( 0.001) | | |
| LATERAL DRAINAGE COLLECTED FROM LAYER 10 | 0.00000 | ( 0.00000) | 0.001 | 0.00000 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | 0.00000 | ( 0.00000) | 0.008 | 0.00000 |
| AVERAGE HEAD ON TOP OF LAYER 11 | 0.000 | ( 0.000) | | |
| PERCOLATION/LEAKAGE THROUGH LAYER 13 | 0.00000 | ( 0.00001) | 0.005 | 0.00000 |
| CHANGE IN WATER STORAGE | 0.084 | ( 2.1408) | 306.64 | 0.173 |

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

| | (INCHES) | (CU. FT.) |
|---|---|---|
| PRECIPITATION | 10.47 | 38006.102 |
| RUNOFF | 6.012 | 21822.7168 |
| DRAINAGE COLLECTED FROM LAYER 2 | 0.02162 | 78.48444 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | 0.023421 | 85.01884 |
| AVERAGE HEAD ON TOP OF LAYER 3 | 23.613 | |
| MAXIMUM HEAD ON TOP OF LAYER 3 | 34.477 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN) | 80.4 FEET | |
| DRAINAGE COLLECTED FROM LAYER 7 | 0.01276 | 46.33354 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | 0.000000 | 0.00003 |
| AVERAGE HEAD ON TOP OF LAYER 8 | 0.012 | |
| MAXIMUM HEAD ON TOP OF LAYER 8 | 0.027 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN) | 0.0 FEET | |
| DRAINAGE COLLECTED FROM LAYER 10 | 0.00000 | 0.00001 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | 0.000000 | 0.00002 |
| AVERAGE HEAD ON TOP OF LAYER 11 | 0.000 | |
| MAXIMUM HEAD ON TOP OF LAYER 11 | 0.028 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 10 (DISTANCE FROM DRAIN) | 0.0 FEET | |
| PERCOLATION/LEAKAGE THROUGH LAYER 13 | 0.000038 | 0.13713 |
| SNOW WATER | 0.00 | 0.0000 |
| MAXIMUM VEG. SOIL WATER (VOL/VOL) | 0.4690 | |
| MINIMUM VEG. SOIL WATER (VOL/VOL) | 0.0790 | |

*** Maximum heads are computed using McEnroe's equations. ***
Reference: Maximum Saturated Depth over Landfill Liner

by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 30

| LAYER | (INCHES) | (VOL/VOL) |
|---|---|---|
| 1 | 0.8071 | 0.1345 |
| 2 | 2.1824 | 0.1212 |
| 3 | 0.0000 | 0.0000 |
| 4 | 2.1338 | 0.1778 |
| 5 | 770.8801 | 0.2920 |
| 6 | 3.0430 | 0.1268 |
| 7 | 0.0092 | 0.0306 |
| 8 | 0.0000 | 0.0000 |
| 9 | 0.1875 | 0.7500 |
| 10 | 0.0020 | 0.0100 |
| 11 | 0.0000 | 0.0000 |
| 12 | 0.1875 | 0.7500 |
| 13 | 15.7200 | 0.1310 |
| SNOW WATER | 0.000 | |

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**************************************************************************
**************************************************************************
**                                                                      **
**                                                                      **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE            **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)            **
**                   DEVELOPED BY ENVIRONMENTAL LABORATORY              **
**                     USAE WATERWAYS EXPERIMENT STATION                **
**              FOR USEPA RISK REDUCTION ENGINEERING LABORATORY          **
**                                                                      **
**                                                                      **
**************************************************************************
**************************************************************************
PRECIPITATION DATA FILE:     c:\help\prj\jed\PREC.D4
TEMPERATURE DATA FILE:       c:\help\prj\jed\TEMP.D7
SOLAR RADIATION DATA FILE:   c:\help\prj\jed\SOLRAD.D13
EVAPOTRANSPIRATION DATA:     c:\help\prj\jed\EVAPO.D11
SOIL AND DESIGN DATA FILE:   c:\help\prj\jed\SSLOPE.D10
OUTPUT DATA FILE:            c:\help\prj\jed\SSLOPE.OUT
TIME:  15: 0     DATE:   4/ 2/2012
**************************************************************************
     TITLE:  JED Post-closure Leachate Generation: Side Slope
**************************************************************************
     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.
                                LAYER  1
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   9
     THICKNESS                      =      6.00   INCHES
     POROSITY                       =    0.5010 VOL/VOL
     FIELD CAPACITY                 =    0.2840 VOL/VOL
     WILTING POINT                  =    0.1350 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.1241 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.190000006000E-03 CM/SEC
          NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  4.63
                   FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
                                LAYER  2
                                --------
                    TYPE 2 - LATERAL DRAINAGE LAYER
                      MATERIAL TEXTURE NUMBER   5
     THICKNESS                      =     18.00   INCHES
     POROSITY                       =    0.4570 VOL/VOL
     FIELD CAPACITY                 =    0.1310 VOL/VOL
     WILTING POINT                  =    0.0580 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.0720 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.100000005000E-02 CM/SEC
     SLOPE                          =    33.33   PERCENT
     DRAINAGE LENGTH                =   120.0    FEET
                                LAYER  3
                                --------
                    TYPE 4 - FLEXIBLE MEMBRANE LINER
                      MATERIAL TEXTURE NUMBER  35
     THICKNESS                      =      0.04   INCHES
     POROSITY                       =    0.0000 VOL/VOL
     FIELD CAPACITY                 =    0.0000 VOL/VOL
     WILTING POINT                  =    0.0000 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.0000 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.199999996000E-12 CM/SEC
     FML PINHOLE DENSITY            =      2.00   HOLES/ACRE
     FML INSTALLATION DEFECTS       =      2.00   HOLES/ACRE
     FML PLACEMENT QUALITY          =  3 - GOOD
                                LAYER  4
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   5
     THICKNESS                      =     12.00   INCHES
     POROSITY                       =    0.4570 VOL/VOL
     FIELD CAPACITY                 =    0.1310 VOL/VOL
     WILTING POINT                  =    0.0580 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.1456 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.100000005000E-02 CM/SEC
                                LAYER  5
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER  18
     THICKNESS                      =   1320.00   INCHES
     POROSITY                       =    0.6710 VOL/VOL
     FIELD CAPACITY                 =    0.2920 VOL/VOL
     WILTING POINT                  =    0.0770 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.2920 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.100000005000E-02 CM/SEC
                                LAYER  6
                                --------
                  TYPE 1 - VERTICAL PERCOLATION LAYER
                      MATERIAL TEXTURE NUMBER   0
     THICKNESS                      =     24.00   INCHES
     POROSITY                       =    0.4170 VOL/VOL
     FIELD CAPACITY                 =    0.0450 VOL/VOL
     WILTING POINT                  =    0.0180 VOL/VOL
     INITIAL SOIL WATER CONTENT     =    0.0461 VOL/VOL
     EFFECTIVE SAT. HYD. COND.      =  0.100000005000E-02 CM/SEC
```

LAYER 7

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.30 | INCHES |
| POROSITY | = | 0.8500 | VOL/VOL |
| FIELD CAPACITY | = | 0.0100 | VOL/VOL |
| WILTING POINT | = | 0.0050 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0100 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 9.75000000000 | CM/SEC |
| SLOPE | = | 1.50 | PERCENT |
| DRAINAGE LENGTH | = | 800.0 | FEET |

LAYER 8

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.06 | INCHES |
| POROSITY | = | 0.0000 | VOL/VOL |
| FIELD CAPACITY | = | 0.0000 | VOL/VOL |
| WILTING POINT | = | 0.0000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0000 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.199999996000E-12 | CM/SEC |
| FML PINHOLE DENSITY | = | 2.00 | HOLES/ACRE |
| FML INSTALLATION DEFECTS | = | 2.00 | HOLES/ACRE |
| FML PLACEMENT QUALITY | = | 3 - GOOD | |

LAYER 9

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.25 | INCHES |
| POROSITY | = | 0.7500 | VOL/VOL |
| FIELD CAPACITY | = | 0.7470 | VOL/VOL |
| WILTING POINT | = | 0.4000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.7500 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.300000003000E-08 | CM/SEC |

LAYER 10

TYPE 2 - LATERAL DRAINAGE LAYER
MATERIAL TEXTURE NUMBER 0

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.20 | INCHES |
| POROSITY | = | 0.8500 | VOL/VOL |
| FIELD CAPACITY | = | 0.0100 | VOL/VOL |
| WILTING POINT | = | 0.0050 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0100 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.490000010000 | CM/SEC |
| SLOPE | = | 1.50 | PERCENT |
| DRAINAGE LENGTH | = | 800.0 | FEET |

LAYER 11

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.06 | INCHES |
| POROSITY | = | 0.0000 | VOL/VOL |
| FIELD CAPACITY | = | 0.0000 | VOL/VOL |
| WILTING POINT | = | 0.0000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.0000 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.199999996000E-12 | CM/SEC |
| FML PINHOLE DENSITY | = | 2.00 | HOLES/ACRE |
| FML INSTALLATION DEFECTS | = | 2.00 | HOLES/ACRE |
| FML PLACEMENT QUALITY | = | 3 - GOOD | |

LAYER 12

TYPE 3 - BARRIER SOIL LINER
MATERIAL TEXTURE NUMBER 17

| | | | |
|---|---|---|---|
| THICKNESS | = | 0.25 | INCHES |
| POROSITY | = | 0.7500 | VOL/VOL |
| FIELD CAPACITY | = | 0.7470 | VOL/VOL |
| WILTING POINT | = | 0.4000 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.7500 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.300000003000E-08 | CM/SEC |

LAYER 13

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 5

| | | | |
|---|---|---|---|
| THICKNESS | = | 120.00 | INCHES |
| POROSITY | = | 0.4570 | VOL/VOL |
| FIELD CAPACITY | = | 0.1310 | VOL/VOL |
| WILTING POINT | = | 0.0580 | VOL/VOL |
| INITIAL SOIL WATER CONTENT | = | 0.1310 | VOL/VOL |
| EFFECTIVE SAT. HYD. COND. | = | 0.100000005000E-02 | CM/SEC |

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 9 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 33.% AND A SLOPE LENGTH OF 120. FEET.

| | | | |
|---|---|---|---|
| SCS RUNOFF CURVE NUMBER | = | 83.80 | |
| FRACTION OF AREA ALLOWING RUNOFF | = | 100.0 | PERCENT |
| AREA PROJECTED ON HORIZONTAL PLANE | = | 1.000 | ACRES |
| EVAPORATIVE ZONE DEPTH | = | 22.0 | INCHES |
| INITIAL WATER IN EVAPORATIVE ZONE | = | 1.738 | INCHES |
| UPPER LIMIT OF EVAPORATIVE STORAGE | = | 10.318 | INCHES |

LOWER LIMIT OF EVAPORATIVE STORAGE = 1.738 INCHES
INITIAL SNOW WATER = 0.000 INCHES
INITIAL WATER IN LAYER MATERIALS = 406.434 INCHES
TOTAL INITIAL WATER = 406.434 INCHES
TOTAL SUBSURFACE INFLOW = 0.00 INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM ORLANDO/FORT DRUM FLORIDA

STATION LATITUDE = 27.80 DEGREES
MAXIMUM LEAF AREA INDEX = 3.50
START OF GROWING SEASON (JULIAN DATE) = 0
END OF GROWING SEASON (JULIAN DATE) = 367
EVAPORATIVE ZONE DEPTH = 22.0 INCHES
AVERAGE ANNUAL WIND SPEED = 8.60 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 72.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 72.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 80.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 76.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO/FORT DRUM FLORIDA

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

| JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|
| 2.27 | 2.47 | 3.78 | 2.43 | 4.47 | 8.05 |
| 7.60 | 7.27 | 6.60 | 3.73 | 2.30 | 1.86 |

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO FLORIDA

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

| JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|
| 60.50 | 61.50 | 66.80 | 72.00 | 77.30 | 80.90 |
| 82.40 | 82.50 | 81.10 | 74.90 | 67.50 | 62.00 |

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR ORLANDO FLORIDA AND STATION LATITUDE = 27.80 DEGREES

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 30

| | JAN/JUL | FEB/AUG | MAR/SEP | APR/OCT | MAY/NOV | JUN/DEC |
|---|---|---|---|---|---|---|
| PRECIPITATION | | | | | | |
| TOTALS | 1.91 | 2.07 | 3.80 | 2.31 | 4.78 | 5.90 |
| | 7.04 | 7.42 | 5.97 | 4.01 | 1.90 | 1.81 |
| STD. DEVIATIONS | 1.19 | 2.05 | 4.25 | 2.30 | 3.31 | 4.10 |
| | 3.75 | 3.81 | 2.96 | 3.66 | 1.29 | 1.18 |
| RUNOFF | | | | | | |
| TOTALS | 0.045 | 0.154 | 0.914 | 0.278 | 0.577 | 0.972 |
| | 1.154 | 1.215 | 0.615 | 0.920 | 0.075 | 0.049 |
| STD. DEVIATIONS | 0.128 | 0.497 | 1.977 | 0.495 | 0.720 | 1.402 |
| | 1.393 | 1.211 | 0.725 | 1.636 | 0.167 | 0.114 |
| EVAPOTRANSPIRATION | | | | | | |
| TOTALS | 1.482 | 2.160 | 2.523 | 2.318 | 3.340 | 4.594 |
| | 4.887 | 4.867 | 4.718 | 2.912 | 2.157 | 1.395 |
| STD. DEVIATIONS | 0.741 | 1.028 | 1.517 | 1.729 | 2.047 | 2.024 |
| | 1.607 | 1.735 | 1.058 | 1.387 | 1.080 | 0.634 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 2 | | | | | | |
| TOTALS | 0.1195 | 0.0958 | 0.1683 | 0.2871 | 0.2182 | 0.3237 |
| | 0.5126 | 0.6683 | 0.8025 | 0.5940 | 0.3265 | 0.1665 |
| STD. DEVIATIONS | 0.2579 | 0.1776 | 0.3266 | 0.6740 | 0.3912 | 0.4146 |
| | 0.8562 | 0.9246 | 0.7683 | 0.5580 | 0.3165 | 0.1735 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | | | | | | |
| TOTALS | 0.0094 | 0.0076 | 0.0120 | 0.0187 | 0.0151 | 0.0211 |
| | 0.0327 | 0.0418 | 0.0489 | 0.0376 | 0.0222 | 0.0128 |
| STD. DEVIATIONS | 0.0151 | 0.0107 | 0.0195 | 0.0394 | 0.0234 | 0.0242 |
| | 0.0506 | 0.0537 | 0.0434 | 0.0316 | 0.0184 | 0.0108 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 7 | | | | | | |
| TOTALS | 0.0159 | 0.0117 | 0.0131 | 0.0160 | 0.0199 | 0.0181 |
| | 0.0197 | 0.0192 | 0.0200 | 0.0240 | 0.0233 | 0.0202 |
| STD. DEVIATIONS | 0.0119 | 0.0106 | 0.0115 | 0.0144 | 0.0163 | 0.0128 |
| | 0.0160 | 0.0150 | 0.0141 | 0.0143 | 0.0112 | 0.0130 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 10 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | | | | | | |
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

PERCOLATION/LEAKAGE THROUGH LAYER 13

| | | | | | | |
|---|---|---|---|---|---|---|
| TOTALS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 0.2719 | 0.2402 | 0.3832 | 0.6752 | 0.4966 | 0.7613 |
| | 1.1670 | 1.5211 | 1.8874 | 1.3520 | 0.7679 | 0.3789 |
| STD. DEVIATIONS | 0.5871 | 0.4474 | 0.7435 | 1.5852 | 0.8906 | 0.9751 |
| | 1.9492 | 2.1047 | 1.8071 | 1.2701 | 0.7444 | 0.3950 |

DAILY AVERAGE HEAD ON TOP OF LAYER 8

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 0.0005 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0006 |
| | 0.0006 | 0.0006 | 0.0006 | 0.0007 | 0.0008 | 0.0006 |
| STD. DEVIATIONS | 0.0004 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0004 |
| | 0.0005 | 0.0005 | 0.0005 | 0.0004 | 0.0004 | 0.0004 |

DAILY AVERAGE HEAD ON TOP OF LAYER 11

| | | | | | | |
|---|---|---|---|---|---|---|
| AVERAGES | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| STD. DEVIATIONS | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 30

| | INCHES | | CU. FEET | PERCENT |
|---|---|---|---|---|
| PRECIPITATION | 48.91 | ( 10.219) | 177546.9 | 100.00 |
| RUNOFF | 6.969 | ( 3.2980) | 25295.71 | 14.247 |
| EVAPOTRANSPIRATION | 37.354 | ( 6.0613) | 135596.75 | 76.372 |
| LATERAL DRAINAGE COLLECTED FROM LAYER 2 | 4.28279 | ( 2.46635) | 15546.544 | 8.75630 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | 0.27990 | ( 0.14589) | 1016.024 | 0.57226 |
| AVERAGE HEAD ON TOP OF LAYER 3 | 0.825 | ( 0.474) | | |
| LATERAL DRAINAGE COLLECTED FROM LAYER 7 | 0.22117 | ( 0.11335) | 802.830 | 0.45218 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | 0.00000 | ( 0.00000) | 0.008 | 0.00000 |
| AVERAGE HEAD ON TOP OF LAYER 8 | 0.001 | ( 0.000) | | |
| LATERAL DRAINAGE COLLECTED FROM LAYER 10 | 0.00000 | ( 0.00000) | 0.000 | 0.00000 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | 0.00000 | ( 0.00000) | 0.008 | 0.00000 |
| AVERAGE HEAD ON TOP OF LAYER 11 | 0.000 | ( 0.000) | | |
| PERCOLATION/LEAKAGE THROUGH LAYER 13 | 0.00000 | ( 0.00001) | 0.005 | 0.00000 |
| CHANGE IN WATER STORAGE | 0.084 | ( 1.3170) | 305.10 | 0.172 |

**********

**********

PEAK DAILY VALUES FOR YEARS 1 THROUGH 30

| | (INCHES) | (CU. FT.) |
|---|---|---|
| PRECIPITATION | 10.47 | 38006.102 |
| RUNOFF | 6.176 | 22418.3887 |
| DRAINAGE COLLECTED FROM LAYER 2 | 0.25226 | 915.71783 |
| PERCOLATION/LEAKAGE THROUGH LAYER 3 | 0.016529 | 60.00148 |
| AVERAGE HEAD ON TOP OF LAYER 3 | 17.894 | |
| MAXIMUM HEAD ON TOP OF LAYER 3 | 30.954 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 2 (DISTANCE FROM DRAIN) | 4.7 FEET | |
| DRAINAGE COLLECTED FROM LAYER 7 | 0.00232 | 8.40530 |
| PERCOLATION/LEAKAGE THROUGH LAYER 9 | 0.000000 | 0.00003 |
| AVERAGE HEAD ON TOP OF LAYER 8 | 0.002 | |
| MAXIMUM HEAD ON TOP OF LAYER 8 | 0.004 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 7 (DISTANCE FROM DRAIN) | 0.0 FEET | |
| DRAINAGE COLLECTED FROM LAYER 10 | 0.00000 | 0.00000 |
| PERCOLATION/LEAKAGE THROUGH LAYER 12 | 0.000000 | 0.00002 |
| AVERAGE HEAD ON TOP OF LAYER 11 | 0.000 | |
| MAXIMUM HEAD ON TOP OF LAYER 11 | 0.013 | |
| LOCATION OF MAXIMUM HEAD IN LAYER 10 (DISTANCE FROM DRAIN) | 0.0 FEET | |
| PERCOLATION/LEAKAGE THROUGH LAYER 13 | 0.000038 | 0.13712 |
| SNOW WATER | 0.00 | 0.0000 |
| MAXIMUM VEG. SOIL WATER (VOL/VOL) | 0.4161 | |
| MINIMUM VEG. SOIL WATER (VOL/VOL) | 0.0790 | |

*** Maximum heads are computed using McEnroe's equations. ***
Reference: Maximum Saturated Depth over Landfill Liner

by Bruce M. McEnroe, University of Kansas
ASCE Journal of Environmental Engineering
Vol. 119, No. 2, March 1993, pp. 262-270.

**********

**********

FINAL WATER STORAGE AT END OF YEAR 30

| LAYER | (INCHES) | (VOL/VOL) |
|---|---|---|
| 1 | 0.9507 | 0.1585 |
| 2 | 1.8502 | 0.1028 |
| 3 | 0.0000 | 0.0000 |
| 4 | 1.9943 | 0.1662 |
| 5 | 385.4400 | 0.2920 |
| 6 | 2.6201 | 0.1092 |
| 7 | 0.0030 | 0.0100 |
| 8 | 0.0000 | 0.0000 |
| 9 | 0.1875 | 0.7500 |
| 10 | 0.0020 | 0.0100 |
| 11 | 0.0000 | 0.0000 |
| 12 | 0.1875 | 0.7500 |
| 13 | 15.7200 | 0.1310 |
| SNOW WATER | 0.000 | |

**********

**********

# APPENDIX A-~~3~~5

## Support Documents for Long-term Care Cost Estimates

Groundwater, Leachate & Surface Water Sampling Costs

December 22, 2011

Mike,

Below is the scope of work and budget estimate for water quality monitoring at the J.E.D. Solid Waste Management (JED) facility for 2012. The work will be performed in accordance with the current Florida Department of Environmental Protection (FDEP) Solid Waste Management Facility Permit and relevant revisions to Chapter 62-701 F.A.C. (January 6, 2010).

In general, for each semi-annual event:

- Geo-Services and Consulting, LLC (GS&C) will notify FDEP a minimum of fourteen (14) calendar days prior to commencement of sampling activities.
- Groundwater samples will be collected from the thirty-three (33) monitoring wells identified in the current MPIS for sampling. The wells will be purged and sampled in accordance with the current applicable FDEP SOPs;
- Quality control (QC) samples will be collected and analyzed in accordance with the applicable FDEP SOPs;
- Surface water samples will be collected during each semi-annual event at locations SW-3 and SW-4 if flow in Bull Creek is observed. If a sample is collected the laboratory cost is $325.00;
- Leachate samples will be collected from each active disposal cell in November 2012. It is anticipated that leachate samples will be collected from cells 1 through 8;
- Static water levels will be measured in all site monitoring wells and piezometers prior to purging for preparation of a groundwater contour map;
- Samples will be preserved, handled and shipped in accordance with the applicable FDEP SOPs (EPS proposes to utilize Columbia Analytical Services (CAS) for the laboratory analyses);
- Purge water will not be containerized and will be discharged to the ground surface, except for the monitoring wells with a history of exceeding the groundwater cleanup target levels (GCTL). The purge water from these wells will be discharged within an active disposal cell;
- GS&C will notify you of any damage to any of the existing monitoring wells;
- GS&C will prepare semi-annual water quality reports for submittal to FDEP. The WQ reports will be prepared in accordance with the electronic reporting requirements and will be signed and sealed by a State of Florida registered Professional Geologist. GS&C will provide FDEP with two (2) CDs containing the WQ reports. One hard copy (with an electronic copy included on the inside front cover) will be provided to you for the JED facility's site files and I will upload a pdf copy of the report onto the files anywhere website so you can download for your files. The reports will be submitted in accordance with the permit requirements.

As with semi-annual water quality monitoring previously performed at the JED facility, GS&C proposes to perform this work on a lump sum basis for each semi-annual event. **The lump sum cost for the May 2012 semi-annual event would be $25,500. The lump sum cost for the November 2012 semi-annual event would be $30,800. The total cost for the two water quality monitoring events would be $56,844.** This total reflects a $1,844 increase over the cost for the work performed in 2011 ($55,000). The increase in cost is attributable to the addition of a leachate sample (Cells 7 & 8) and a slight increase in the laboratory analytical costs. The cost for re-sampling of a monitoring well (if necessary) would be $760.

Includes leachate. See next page for breakout costs.

The cost for leachate sampling for compliance with Specific Condition 7 (of the agreement with the City of St. Cloud) would be $1,050 per sample (lab cost & sampling). Since you collected pre and post aeration samples concurrently this year, you can just collect a post aeration sample in 2012 and use one of the leachate samples collected at Cells 1-8 for the second sample. The per unit breakout cost for the leachate samples at the cells is (labor [$250] laboratory [$676]) and the total equal to approximately $926.00. We would just have to add a few analyses to one of these samples to match the parameters listed in the agreement.

If this cost estimate is acceptable, you can reply directly to this email. Please let me know if you have any questions.

Thanks again for the opportunity
Bob

Robert Thompson, P.G.
Senior Geologist
Geo-Services and Consulting, LLC
23110 State Road 54 No. 159
Lutz, Florida 33549
Phone: (813) 418-2007
thompsonrw@hotmail.com

Other Gas/Air Monitoring Reg's.

Golder Associates

January 30, 2012 P83-82734Q

Mr. Mike Kaiser
Waste Services, Incorporated
1501 Omni Way
St. Cloud, FL 34773

**RE: PROPOSAL FOR ENGINEERING SERVICES**
**2012 TITLE V PERMIT AND LANDFILL GAS SERVICES**
**J.E.D. SOLID WASTE MANAGEMENT FACILITY**
**OSCEOLA COUNTY, FLORIDA**

Dear Mr. Kaiser:

Per your request, this letter outlines Golder Associates Inc.'s (Golder's) proposed scope of work and associated costs for the above-referenced project. Golder understands that Waste Services, Inc. (WSI) requests Golder to provide assistance in various 2011 Title V Permit compliance items at the J.E.D. Solid Waste Management Facility (JED Facility).

## PROJECT UNDERSTANDING, SCOPE AND COST

WSI is required to complete various reports, testing, and monitoring requirements at the JED Facility. Golder is prepared to assist WSI and our scope of work is discussed below in detail on a per task basis.

### Task 1 – Semi-Annual Reports

In accordance with 40 CFR 60.757(f), an affected facility must submit semi-annual reports to the FDEP. Under this task, Golder will prepare the semi-annual reports that will include the following items:

- Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).
- Description and duration of all periods when the gas stream was diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.
- Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
- All periods when the collection system was not operating in excess of 5 days.
- The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
- The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.

In addition to the above mentioned report requirements, FDEP has requested that wellfield monitoring logs be included with the report. Golder will coordinate with WSI to include these logs.

Included with the NSPS semi-annual report will be the semi-annual Startup, Shutdown, and Malfunction (SSM) Report. This report will be prepared by Golder and submitted with the NSPS Semi-Annual Report. This report will include the number of SSM events and whether or not the SSM Plan procedures were followed during the SSM event. As requested by FDEP, copies of the SSM forms should be included with this report as well. Golder will coordinate with WSI to include these forms.

In the event an applicable emission limit was exceeded and SSM Plan procedures were not followed, the SSM Plan will need to be revised to address this issue. Revisions to the SSM Plan (if required) will be covered under a separate cost proposal. Golder will perform this task for the lump sum cost of $3,750 per report (total of $7,500 for the two reports). The reports are due to FDEP by January 30, 2012 and July 30, 2012 for the previous six month monitoring period. Golder understands that WSI may internalize this report in the future.

## Task 2 – Title V Permit Annual Reporting Support

This task includes support services for the annual Title V Permit Reporting including:

- Annual Operating Report
- Annual Emissions Fee Form
- Annual Statement of Compliance

### *Annual Report*

Golder will prepare the Annual Operating Report (AOR) for the calendar year 2010 (due April 1, 2012). Golder will complete and submit the 2011 AOR using the EAOR FDEP electronic submittal process. Golder will perform the necessary calculations, based on data collected from the facility, to complete the AOR. This task will require the electronic signature of the responsible official (RO) to be submitted to follow-up the electronic submittal.

### *Annual Emissions Fee Forms*

This task includes support with the preparation of the Title V Annual Emissions Fee Form for the calendar year 2011, required to be submitted by March 1, 2012. The Title V Annual Emissions Fee Form includes calculations with supporting information that determine the amount of the fee that is required to be paid annually to the FDEP for the emissions of regulated pollutants at the facility. Golder will evaluate if current conditions, as established in new permits, have affected this status and prepare the appropriate documentation. The Fee Form document will require the signature of the RO and a check from WSI to cover the cost of the emissions fee.

### *Annual Statement of Compliance*

This task includes support with the preparation of the Title V Statement of Compliance for the calendar year 2011, required to be submitted by March 1, 2012. The Statement of Compliance documents the facility's compliance status during the previous calendar year. The Statement of Compliance requires explanations of each identified and reported noncompliance item. The Statement of Compliance must be submitted to both the FDEP and Environmental Protection Agency (EPA) and requires the signature of the RO.

Golder will provide assistance in completing the above mentioned reports and compliance submittals in this Task for the estimated cost of $5,600. As done in previous years, Golder will assist WSI only as needed and directed by WSI.

## Task 3 – Visible Emissions and Sulfur Testing

This task includes the visible emission testing of the facility's flare in accordance with the facility's Revised Title V Permit. USEPA Method 22 of 40 CFR 60 Appendix A requires a two hour observation period for visible emissions. Golder will provide an observer who meets the requirements as listed in the Revised Title V Permit and will perform the testing during the first calendar quarter of 2012. US EPA Method 22 will be followed during the visible emissions testing. Included within this task is the fifteen day notification of the testing to FDEP.

Additionally, Golder will obtain a landfill gas sample from the positive side of the blower and send it for laboratory analysis to determine the sulfur content within the landfill gas. The sample will be analyzed using ASTM D-3246-81 as done previously by Golder for WSI.

Golder will prepare a report summarizing the results from the USEPA Method 22 visible emissions observations and include the required reporting forms, as well as the results from the sulfur sampling analysis. This report must be signed by the facility's RO. Golder will coordinate with WSI to and submit the report to FDEP within 45 days of the testing/sampling date.

Golder's estimated costs to perform the visible emissions and sulfur testing is $2,900.

## Task 4 – Greenhouse Gas (GHG) Reporting Support

Under this task, Golder will prepare and submit the report associated with the calendar year 2011 GHG monitoring. USEPA requires the reporting to be completely electronic, via the Electronic Greenhouse Gas Reporting Tool (e-GGRT) website. This report includes the GHG monitoring results from 2011. As performed last year, Golder anticipates to use the Excel based tables to estimate the facility's GHG emissions. Golder will prepare and submit the report, and coordinate any required certifications. This report will be due by March 31, 2011.

Golder's will perform this service associated with GHG Reporting for the lump sum fee of $4,200.

Table 1 below presents a summary of the costs as described above on a per task basis.

| Tasks | Budget |
|---|---|
| Task 1 – Semi-Annual Reports | $7,500 ($3,750 each, lump sum) |
| Task 2 – Title V Permit Annual Reporting | $5,600 |
| Task 3 – Visible Emissions and Sulfur Testing | $2.900 |
| Task 4 – GHG Reporting Support | $4,200 (lump sum) |
| **TOTAL** | **$20,200** |
| | |

## AUTHORIZATION TO PROCEED

Golder will perform the Services identified in this proposal in accordance with the previously agreed to Professional Services Agreement between WSI (Omni Waste of Osceola County, LLC) and Golder (dated October 20, 2008).

If you find this proposal acceptable, please sign the proposal acceptance form provided below and return one executed original to us indicating authorization to proceed with performance of the Services.

Golder sincerely appreciates the opportunity to provide our services to WSI at the JSWMF. If you have any questions, please feel free to give us a call.

Sincerely,

**GOLDER ASSOCIATES INC.**

Don E. Grigg, PE
Senior Project Engineer

Kevin S. Brown, PE
Senior Consultant and Principal

Attachments

DEG/veh

G:\Projects\083\083-82\083-82734\Proposals\p83-82734Q\P83-82734Q.docx

Golder Associates

## GOLDER ASSOCIATES INC.
## PROPOSAL ACCEPTANCE FORM

PROPOSAL NUMBER: P83-82734Q

DATE: January 30, 2012

**RE: PROPOSAL FOR ENGINEERING SERVICES**
**2012 TITLE V PERMIT AND LANDFILL GAS SERVICES**
**J.E.D. SOLID WASTE MANAGEMENT FACILITY**
**OSCEOLA COUNTY, FLORIDA**

Accepted by:

**WASTE SERVICES, INCORPORATED**

_____
Authorized Representative

_____
Name

_____
Title

_____
Date

**Golder Associates Inc.**
9428 Baymeadows Road, Suite 400
Jacksonville, FL 32256 USA
Tel: (904) 363-3430 Fax: (904) 363-3445 www.golder.com

# EPG Companies Inc.

19900 County Road 81
Maple Grove, MN 55311

Phone: 763-424-2613
800-443-7426
Fax: 763-493-4812
www.epgco.com


**Quote Number: 13448 Rev Num 4**



**TO:**
Mike Kaiser
J.E.D. Solid Waste Facility / Waste Services
Omni Waste of Osceola Cty
1501 Omni Way
St Cloud FL 34773
USA

Date: 9/20/2011
Expires: 10/20/2011
Reference: Cell 8
Site: St. Cloud, FL
SalesPerson: Jim Bailey

| Qty | Part Number / Description | Unit Cost | Your Cost |
|---|---|---|---|
| **PRIMARY SUMP PUMPS** | | | |
| 2 | WSDPT 17-3<br>EPG SurePump, patented, stainless steel Wheeled Sump Drainer, size 6, with 5 HP, 460 V, 3PH motor, 100' of jacketed 12-4 CP motor lead, 0-11' level sensor with built-in lightning arrestor and 100' of Hytrel lead, and 100' of 3/16" stainless steel suspension cable and clamps. | $6,354.00 EA | $12,708.00 |
| 2 | NW3SS<br>EPG Discharge Adapter, 3" stainless steel disconnect. | $1,300.00 EA | $2,600.00 |
| 1 | BJBP525<br>EPG Breakout Box, NEMA 4X non-metallic enclosure for 2 ea. motor leads, includes connection terminals. | $165.00 EA | $165.00 |
| 1 | BJBL625B<br>EPG Breakout Box, NEMA 4X non-metallic enclosure, junction box for 2 ea. level sensors. Includes desiccant dryer, bellows, and connection terminals. | $350.00 EA | $350.00 |
| **SECONDARY SUMP PUMP** | | | |
| 1 | WSDPT 8-5<br>EPG SurePump, patented, stainless steel Wheeled Sump Drainer, size 4, with 1.5 HP, 460 V, 3PH motor, 100' of jacketed 14-4 CP motor lead, 0-11' level sensor with built-in lightning arrestor and 100' of Hytrel lead, and 100' of 1/8" stainless steel suspension cable and clamps. Includes 2" stainless steel discharge adapter. | $4,405.00 EA | $4,405.00 |
| 1 | NW2SS<br>EPG Discharge Adapter, 2", cast 316 stainless steel disconnect. | $728.00 EA | $728.00 |
| 1 | BJBP500<br>EPG Breakout Box, NEMA 4X non-metallic enclosure for 1 ea. motor lead, includes connection terminals. | $155.00 EA | $155.00 |

Primary pump Cost.

Secondary pump Cost

# EPG Companies Inc.

19900 County Road 81
Maple Grove, MN 55311

Phone: 763-424-2613
800-443-7426
Fax: 763-493-4812
www.epgco.com




| | | | |
|---|---|---|---|
| 1 | BJBL600B<br>EPG Breakout Box, NEMA 4X non-metallic enclosure, junction box for 1 ea. level sensor. Includes desiccant dryer, bellows, and connection terminals. | $195.00 EA | $195.00 |

**CONTROL PANEL**

| | | | |
|---|---|---|---|
| 1 | L960PT<br>EPG PumpMaster Control Panel, UL listed, 460 V, 3PH, NEMA 4X white powder coated stainless steel, to operate 2 ea. 5 HP primary sump pumps in lead-lag/alternating mode with LevelMaster level control meter and simulator, primary level sensor selector switch, Pump 1 or Pump 1 & 2 selector switch, 1.5 HP secondary sump pump with LevelMaster level control meter and simulator, power monitors, pump lightning arrestors, elapsed time meters, cycle counters, level sensor lightning protectors, 30A molded case circuit breaker to TVSS, red top mounted high sump level or pump fault light, 115 V power to terminals for 3 ea. 3 ea. flow meters, terminals for 4-20 mA outputs from flow meters (future monitoring & control use), and pump run output contacts. Includes external mount ~1.5KVA stainless steel encapsulated transformer. | $17,765.00 EA | $17,765.00 |

**Total amount quoted $ 39,071.00**

LCRS Cleaning - JED 5-yr Permit Renewal. Cells 1-6.

# FLORIDA JETCLEAN

**HIGH PRESSURE WATER JETTING – EXPLOSION PROOF INSPECTION**
**PIPE LOCATING – NO DIG REPAIRS – VACUUM TRUCK SERVICES**

19019 Fern Meadow Loop
Lutz, FL 33558
www. floridajetclean.com

TEL : 800-226-8013
FAX : 813-926-4616

**PROPOSAL**

DATE : 2/7/2012
TO : Michael Kaiser– OMNI Waste Services
FROM : Ralph Calistri (floridajetclean@yahoo.com)
SUBJECT : Proposal LCS Pipe Jetcleaning at JED Oak Hammock Landfill

Thank you for your inquiry. We confirm our capability and interest in carrying out this work for OMNI Waste Services at the Oak Hammock Landfill.

**FLORIDA JETCLEAN** specializes in leachate collection system maintenance and inspection, and has developed a considerable amount of specific expertise in this field over the last 20+ years. Our company has worked at an extensive number of landfills in Florida, Georgia, the Carolinas, Delaware, and westward to Arkansas. We have worked with most engineering companies active in this field, and have also fostered excellent working relationships with the regulatory authorities. We use modified jetting equipment designed to achieve extended pipe distances found in landfill environments and **our explosion proof camera equipment complies with all OSHA and regulatory mandates for methane piping.** Substantial references are available on request.

Based on our telephone conversation we propose as follows:

High-pressure water-jetting (4,000 PSI) of roughly 10,900' of 4" / 6" HDPE leachate collection piping at the above location (including FDEP report) $ 6,950.00

Subject to:

- An adequate, no charge, water supply for jetcleaning via hydrant or water truck.
- 2 wheel drive vehicle access within 10'-15' of each cleanout
- Continuity of access allowing work to be carried out on a single mobilization
- Exposed and opened cleanouts at ground level
- Payment : Net 30 days

Regards,

Ralph Calistri – Florida Jetclean - 800-226-8013

Average Cost Cells 1-6 = $6,950.00/6 = $1,158.33/cell

Total Cost Cells 1-8 = $1,158.33 (8) = $9,266.64

**Geo-Services and Consulting, LLC**
23110 State Road 54, Number 159
Lutz, Florida 33549
813-418-2077

November 7, 2011

GW-22 Abandonment & Replacement

Mr. Mike Kaiser
WSI
A Progressive Waste Solutions Company
1099 Miller Drive
Altamonte Springs, Florida 32701

Re: MW-22 (A-C) Abandonment/Replacement
Omni Waste of Osceola County, LLC
1501 Omni Way
St. Cloud, Florida 34773

Dear Mr. Kaiser:

Geo-Services and Consulting, LLC (GS&C) in accordance with your request has prepared the attached cost estimate for proper abandonment and subsequent replacement of monitoring well cluster MW-22 at the referenced facility. Monitoring well cluster MW-22 is currently located within the boundaries of a future disposal cell and needs to be abandoned in accordance with Florida Department of Environmental Protection (FDEP) rules. GS&C has tentatively scheduled the abandonment work for **Thursday November 10** (first available day for the driller). Scheduling of the drilling activities for replacement of the monitoring well cluster is pending completion of current construction work. The drilling activities will be performed by a Florida licensed driller and will acquire the required permits in advance of mobilizing to the site.

GS&C understands that Omni Waste in accordance with Rule 62.701.501(3)(d)6 F.A.C. will provide the proper notifications to the FDEP in advance of performance of this work.

**Monitoring Well Abandonment**

Monitoring well cluster MW-22 consists of three 2-inch diameter wells, A, B and C Zone (15, 35 and 65 feet below land surface [bls]). The shallowest of the monitoring wells (A Zone) will be removed from the subsurface and the location will be abandoned using Portland Type I grout from the point of collapse to land surface.

Because of concerns relative to the potential for puncture of future landfill liner, the remaining monitoring wells (B and C Zone) will be abandoned using the following procedure;

- The remaining wells will be abandoned using Portland Type 1 grout placed from the bottom up through tremie pipe to approximately ten feet bls, then
- Over-drill using hollow stem augers to approximately ten feet bls thereby removing remaining PVC well material, finally

- Prior to removal of the hollow stem augers, Portland Type I grout will be poured, filling the augers to land surface.

**Monitoring Well Installation**

Subsequent to completion of the current construction work, monitoring well cluster MW-22 will be replaced. The monitoring well cluster will be re-located to the western landfill perimeter berm adjacent to the southwest corner of Cell 8. Because of the placement of fill material which will increase the current elevation by approximately 10 feet, the monitoring wells will be installed approximately ten feet deeper (25, 45 and 75 feet bls).

The monitoring wells will be installed using hollow stem augers. Prior to installation of the C Zone monitoring well, split spoon samples will be collected on five foot centers to total depth (4 to 6, 9 to 11, 14 to 16 feet bls, etc.) to document lithologic characteristics. The replacement wells will be constructed using materials and methods consistent with other site wells. Monitoring wells will be constructed with 10 feet of 0.06 inch machine slotted PVC well screen threaded to the required length of Schedule 40 PVC riser. The filter pack will consist of the recommended 30/45 grade silica sand which will be placed from total depth of the respective monitoring wells to approximately two feet above the screen sections. The well seals will consist of approximately one foot of bentonite and the remaining annulus will be filled with Portland Type 1 grout to land surface.

The monitoring wells will be left as stick ups which will then be retro-fitted (by WSI personnel) with blue anodized aluminum casings with lockable cast aluminum lids (provided by GS&C). Any materials (locks, well caps) which are in proper working order will be re-used. Subsequent to installation, the replacement monitoring wells will need to be surveyed by a State of Florida license surveyor. GS&C has assumed that WSI will coordinate this activity with the construction contractor.

**Report Preparation and Submittal**

Subsequent to completion of the monitoring well installation, GS&C will prepare one report documenting the abandonment and installation activities. A draft will be submitted to WSI for review prior to final submittal approximately ten days after completion of the drilling program and will include a photographic log, FDEP well completion form and copies of applicable permits and notifications.

**Closure**

The drilling sub-contractor (NET Inc.) has a master services agreement in place and will forward their invoice directly to WSI. GS&C will forward invoices upon completion of the individual Tasks as shown on the attached cost estimate. If there are questions or comments regarding the attached please call Mr. Robert Thompson at (813) 418-2007.

Sincerely,

Robert Thompson
*Senior Geologist*
Florida P.G. #2560

Attachments

**Cost Estimate**
**MW-22 (A-C) Abandonment/Replacement**
**Omni Waste of Osceola County, LLC**
**1501 Omni Way**
**St. Cloud, FL**

**Task 1 Monitoring Well Abandonment Oversight**

Average Cost/well
= $2,620.00/3
= $873.33

| | |
|---|---|
| Labor (including travel) | $1,200.00 |
| Vehicle & Expenses | $150.00 |
| Direct Bill Sub Fee | $1,270.00 |

| | |
|---|---|
| Task 1 Subtotal | $1,350.00 |
| Task 1 Direct Bill Subtotal | $1,270.00 |
| Total Task 1 Cost | $2,620.00 |

**Task 2 Monitoring Well Installation Oversight/Well Development**

| | |
|---|---|
| Labor | $3,000.00 |
| Vehicle & Expenses | $450.00 |
| Anodized Aluminum Casings | $555.00 |
| Direct Bill Sub Fee | $5,835.00 |

| | |
|---|---|
| Task 2 Subtotal | $3,450.00 |
| Task 2 Direct Bill Subtotal | $5,835.00 |
| Total Task 2 Cost | $9,285.00 |

(not including ~~aluminum casings~~)

**Task 3 Letter Report Prep and Submittal**

| | |
|---|---|
| Labor | $2,500.00 |
| Task Subtotal | $2,500.00 |

| | |
|---|---|
| **GS&C Total** | **$7,300.00** |
| **Direct Bill Total** | **$7,105.00** |
| **Project Total** | **$14,960.00** |

Average Cost/well
= $11,785.00/3
= $3,928.33

## Michael Kaiser

**From:** Matt Orr
**Sent:** Tuesday, February 07, 2012 10:44 AM
**To:** Michael Kaiser
**Subject:** FW: Scan from FL-St Cloud HPLJM4345
**Attachments:** [Untitled].pdf

Mike,

Attached is the quote. For the mowing of the side slopes we assumed 30 acres, for all of the closed area and storm water areas as well. It works out to be $60.00 per acre.

Thanks,

-----Original Message-----
From: Email From Scanner [mailto:scan@wasteservicesin.com]
Sent: Tuesday, February 07, 2012 10:41 AM
To: Matt Orr
Subject: Scan from FL-St Cloud HPLJM4345

This email was send to you from the HP LaserJet M3035 MFP network printer located in FL-St Cloud.

In order to view the attached PDF document you need to use the Adobe Acrobat Reader.

# Quality Turf of Okeechobee, Inc.
## Estimate

Quality Turf of Okeechobee, Inc.
8731 N.E. 48th St.
Okeechobee, FL 34972

(863)634-7140
qualityturf@ymail.com

| Date | Estimate # |
|---|---|
| 07/05/2011 | 2734 |

| Exp. Date |
|---|
| |

| Address |
|---|
| Florida WSI<br>1501 Omni Way<br>St. Cloud, Fl. 34773 |

| Date | Activity | Quantity | Rate | Amount |
|---|---|---|---|---|
| 07/05/2011 | Mow (Bush Hog) from entrance road to landfill | 1 | 540.00 | 540.00 |
| 07/05/2011 | Mow (Bush Hog) closed side slopes of landfill and perimeter berms | 1 | 1,800.00 | 1,800.00 |
| 07/05/2011 | Weed-eating and additional mowing by the hour | 40 | 25.00 | 1,000.00 |
| 07/05/2011 | Transport of equipment each way | 1 | 250.00 | 250.00 |
| 07/05/2011 | ****any extra mowing will be charged by the hour @ $70.00 per hour**** | | | 0.00 |

See e-mail Attached - Math Err
Average Cost/acre = $60.00

Thank you for the opportunity. We look forward to doing business with you soon!

| Total | $3,590.00 |
|---|---|

Accepted By: _____ Accepted Date: _____

Quality Turf of Okec. _____ Accepted By _____

Progress Energy

# STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

Cell 1

**ACCOUNT NUMBER**
99882 87420

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

SERVICE ADDRESS
1501 OMNI WAY PUMP 1
ST CLOUD FL 34773

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 48.72 |
| NEXT READ DATE ON OR ABOUT | DEPOSIT AMOUNT ON ACCOUNT |
| JAN 11 2012 | 100.00 |

**PIN: 625482228**

## METER READINGS

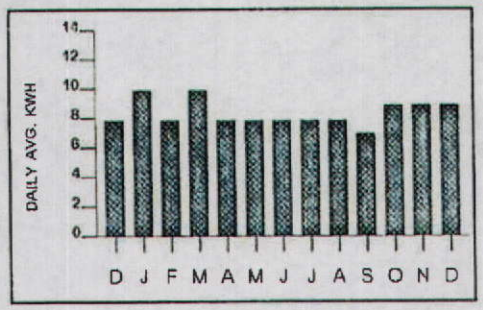
| | | |
|---|---|---|
| METER NO. | | 002652009 |
| PRESENT | (ACTUAL) | 002561 |
| PREVIOUS | (ACTUAL) | 002286 |
| DIFFERENCE | | 000275 |
| TOTAL KWH | | 275 |
| PRESENT KW | (ACTUAL) | 0010.15 |
| BASE KW | | 10 |
| LOAD FACTOR | | 3.7% |

RECEIVED
DEC 12 2011
BY:

PAYMENTS RECEIVED AS OF NOV 30 2011 49.74 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 275 KWH @ | 6.17300¢ | 16.98 |
| FUEL CHARGE | 275 KWH @ | 4.77600¢ | 13.13 |
| *TOTAL ELECTRIC COST | | | 41.70 |
| GROSS RECEIPTS TAX | | | 1.07 |
| COUNTY UTILITY TAX | | | 2.52 |
| SALES TAX ON ELECTRIC | | | 3.43 |
| TOTAL CURRENT BILL | | | 48.72 |
| TOTAL DUE THIS STATEMENT | | | $48.72 |




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 9 KWH/DAY |
| USE ONE YEAR AGO - | 8 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $1.35 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-831-1539. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

Average Monthly Cells 1-7 = $383.07/7
= $54.72/Cell

DETACH AND RETURN THIS SECTION MM 0005439 BILL # 12 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 99882 87420

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

| DUE DATE |
|---|
| DEC 30 2011 |

| TOTAL DUE |
|---|
| 48.72 |

| PLEASE ENTER AMOUNT PAID | |
|---|---|
| | |

998828742020000000487280000000000000000048728010000000009

Progress Energy

# STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
16261 25416

Cell 2

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

SERVICE ADDRESS
1501 OMNI WAY,
CELL 2/PUMP AREA

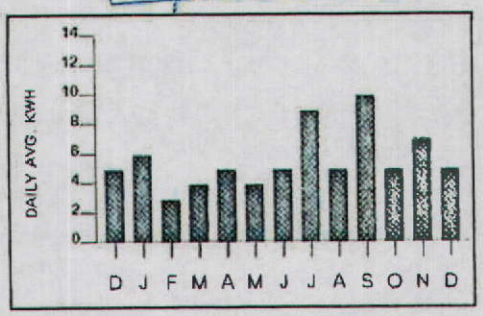
| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 34.36 |
| NEXT READ DATE ON OR ABOUT | DEPOSIT AMOUNT ON ACCOUNT |
| JAN 11 2012 | 100.00 |

**PIN: 625482228**

## METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002654570 |
| PRESENT | (ACTUAL) | 001795 |
| PREVIOUS | (ACTUAL) | 001633 |
| DIFFERENCE | | 000162 |
| TOTAL KWH | | 162 |
| PRESENT KW | (ACTUAL) | 0005.56 |
| BASE KW | | 6 |
| LOAD FACTOR | | 3.6% |

RECEIVED
DEC 12 2011
BY: Judi




## ENERGY USE

| | |
|---|---|
| DAILY AVG. USE - | 5 KWH/DAY |
| USE ONE YEAR AGO - | 5 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $.95 |

PAYMENTS RECEIVED AS OF NOV 30 2011 41.86 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 162 KWH @ | 6.17300¢ | 10.00 |
| FUEL CHARGE | 162 KWH @ | 4.77600¢ | 7.74 |
| *TOTAL ELECTRIC COST | | | 29.33 |
| GROSS RECEIPTS TAX | | | .75 |
| COUNTY UTILITY TAX | | | 1.88 |
| SALES TAX ON ELECTRIC | | | 2.40 |
| TOTAL CURRENT BILL | | | 34.36 |

TOTAL DUE THIS STATEMENT $34.36

NO
PO NO
VEND ID
ACCT
SAL
VERIFY

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005431 BILL # 4 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 16261 25416

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

| DUE DATE |
|---|
| DEC 30 2011 |

| TOTAL DUE |
|---|
| 34.36 |

| PLEASE ENTER AMOUNT PAID | |
|---|---|
| | |

1626125416500000003436300000000000000003436301000000009

Poor Quality-Original

# Progress Energy

## STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
**75594 97574**

Cell 3

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

SERVICE ADDRESS
1501 OMNI WAY,
CELL 3/PUMP AREA

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 31.96 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 200.00 |

**PIN: 625482228**

### METER READINGS

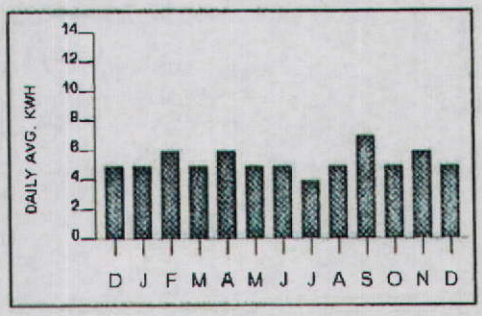
| | | |
|---|---|---|
| METER NO. | | 002663582 |
| PRESENT | (ACTUAL) | 017020 |
| PREVIOUS | (ACTUAL) | 016877 |
| DIFFERENCE | | 000143 |
| TOTAL KWH | | 143 |
| PRESENT KW | (ACTUAL) | 0003.65 |
| BASE KW | | 4 |
| LOAD FACTOR | | 4.8% |

RECEIVED
DEC 12 2011
BY:

PAYMENTS RECEIVED AS OF NOV 30 2011 38.18 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | 11.59 | |
| ENERGY CHARGE | 143 KWH @ 6.17300¢ | 8.83 | |
| FUEL CHARGE | 143 KWH @ 4.77600¢ | 6.83 | |
| *TOTAL ELECTRIC COST | | | 27.25 |
| GROSS RECEIPTS TAX | | | .70 |
| COUNTY UTILITY TAX | | | 1.77 |
| SALES TAX ON ELECTRIC | | | 2.24 |
| TOTAL CURRENT BILL | | | 31.96 |
| TOTAL DUE THIS STATEMENT | | | $31.96 |




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 5 KWH/DAY |
| USE ONE YEAR AGO - | 5 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $.88 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005435 BILL # 8 OF 12 GRP 1365

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 75594 97574

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
DEC 30 2011

**TOTAL DUE**
31.96

PLEASE ENTER AMOUNT PAID

75594975744000000031963000000000000000000031963010000000009

Progress Energy

# STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
**11757 94261**

Cell 4

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

**SERVICE ADDRESS**
1501 OMNI WAY,
CELL 4/PUMP AREA

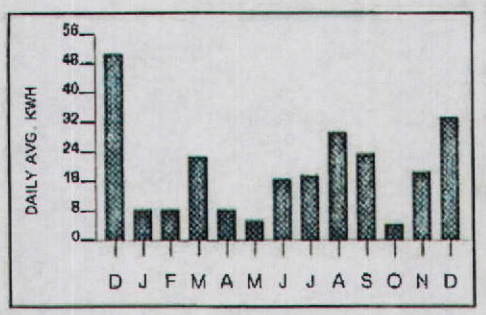
| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 149.31 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 480.00 |

**PIN: 625482228**

## METER READINGS

| | | |
|---|---|---|
| METER NO. | | 006649102 |
| PRESENT | (ACTUAL) | 011759 |
| PREVIOUS | (ACTUAL) | 010692 |
| DIFFERENCE | | 001067 |
| TOTAL KWH | | 1067 |

RECEIVED
DEC 12 2011
BY:




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 34 KWH/DAY |
| USE ONE YEAR AGO - | 51 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $4.14 |

PAYMENTS RECEIVED AS OF NOV 30 2011 87.96 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 1067 KWH @ | 6.17300¢ | 65.87 |
| FUEL CHARGE | 1067 KWH @ | 4.77600¢ | 50.96 |
| *TOTAL ELECTRIC COST | | | 128.42 |
| GROSS RECEIPTS TAX | | | 3.29 |
| COUNTY UTILITY TAX | | | 7.06 |
| SALES TAX ON ELECTRIC | | | 10.54 |
| TOTAL CURRENT BILL | | | 149.31 |
| TOTAL DUE THIS STATEMENT | | | $149.31 |

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PO NO
VEND ID
SAL
PL
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Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005429 BILL # 2 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 11757 94261

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
**DEC 30 2011**

**TOTAL DUE**
**149.31**

PLEASE ENTER AMOUNT PAID

1175794261900000014931000000000000000000014931001000000000009

# Progress Energy

## STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
72938 86199

Cell 5

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

**SERVICE ADDRESS**
1501 OMNI WAY,
CELL 5/PUMP AREA

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 45.54 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 200.00 |

**PIN: 625482228**

### METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002667927 |
| PRESENT | (ACTUAL) | 002750 |
| PREVIOUS | (ACTUAL) | 002500 |
| DIFFERENCE | | 000250 |
| TOTAL KWH | | 250 |
| PRESENT KW | (ACTUAL) | 0015.24 |
| BASE KW | | 15 |
| LOAD FACTOR | | 2.2% |

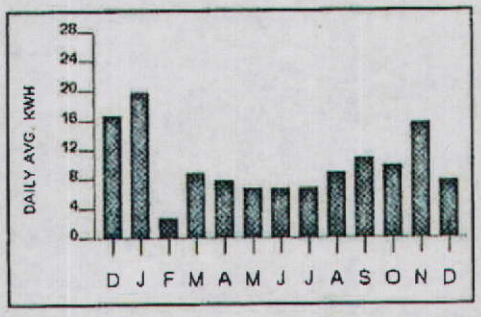
RECEIVED
DEC 12 2011
BY: JM

PAYMENTS RECEIVED AS OF NOV 30 2011 71.71 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | 11.59 | |
| ENERGY CHARGE | 250 KWH @ 6.17300¢ | 15.43 | |
| FUEL CHARGE | 250 KWH @ 4.77600¢ | 11.94 | |
| *TOTAL ELECTRIC COST | | | 38.96 |
| GROSS RECEIPTS TAX | | | 1.00 |
| COUNTY UTILITY TAX | | | 2.38 |
| SALES TAX ON ELECTRIC | | | 3.20 |
| TOTAL CURRENT BILL | | | 45.54 |

TOTAL DUE THIS STATEMENT $45.54




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 8 KWH/DAY |
| USE ONE YEAR AGO - | 17 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $1.26 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110 to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005434 BILL # 7 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 72938 86199

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
DEC 30 2011

**TOTAL DUE**
45.54

PLEASE ENTER AMOUNT PAID

729388619940000000455420000000000000000000455420100000000009

# Progress Energy

## STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
13961 72312

Cell 6

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

**SERVICE ADDRESS**
1501 OMNI WAY,
CELL 6/PUMP AREA

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 37.42 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 200.00 |

**PIN: 625482228**

### METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002663581 |
| PRESENT | (ACTUAL) | 011494 |
| PREVIOUS | (ACTUAL) | 011308 |
| DIFFERENCE | | 000186 |
| TOTAL KWH | | 186 |
| PRESENT KW | (ACTUAL) | 0000.81 |
| BASE KW | | 1 |
| LOAD FACTOR | | 25.0% |

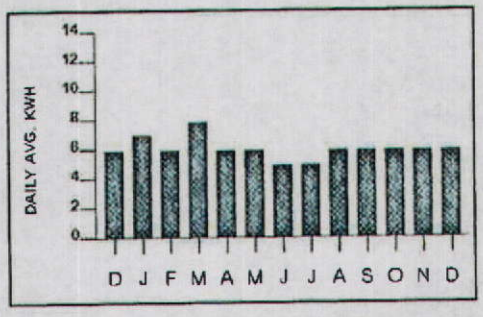
RECEIVED
DEC 12 2011
BY:

PAYMENTS RECEIVED AS OF NOV 30 2011 39.06 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 186 KWH @ | 6.17300¢ | 11.48 |
| FUEL CHARGE | 186 KWH @ | 4.77600¢ | 8.88 |
| *TOTAL ELECTRIC COST | | | 31.95 |
| GROSS RECEIPTS TAX | | | .82 |
| COUNTY UTILITY TAX | | | 2.02 |
| SALES TAX ON ELECTRIC | | | 2.63 |
| TOTAL CURRENT BILL | | | 37.42 |
| TOTAL DUE THIS STATEMENT | | | $37.42 |

VO
PO NO
VEND. ID
A/C#
PO VERIFIED




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 6 KWH/DAY |
| USE ONE YEAR AGO - | 6 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $1.03 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005430 BILL # 3 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 13961 72312

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

| DUE DATE |
|---|
| DEC 30 2011 |

| TOTAL DUE |
|---|
| 37.42 |

| PLEASE ENTER AMOUNT PAID | |
|---|---|
| | |

139617231200000000374240000000000000000037424010000000009

Poor Quality-Original

# Progress Energy

## STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
**49354 75320**

Cell 7

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

**SERVICE ADDRESS**
1501 OMNI WAY PUMP 7
ST CLOUD FL 34773

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 35.76 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 200.00 |

**PIN: 625482228**

### METER READINGS

| | | |
|---|---|---|
| METER NO. | | 006644791 |
| PRESENT | (ACTUAL) | 009218 |
| PREVIOUS | (ACTUAL) | 009045 |
| DIFFERENCE | | 000173 |
| TOTAL KWH | | 173 |

RECEIVED
DEC 12 2011
BY:

PAYMENTS RECEIVED AS OF NOV 30 2011 221.06 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | |
|---|---|---|
| CUSTOMER CHARGE | | 11.59 |
| ENERGY CHARGE | 173 KWH @ 6.17300¢ | 10.68 |
| FUEL CHARGE | 173 KWH @ 4.77600¢ | 8.26 |
| *TOTAL ELECTRIC COST | | 30.53 |
| GROSS RECEIPTS TAX | | .78 |
| COUNTY UTILITY TAX | | 1.94 |
| SALES TAX ON ELECTRIC | | 2.51 |
| TOTAL CURRENT BILL | | 35.76 |
| TOTAL DUE THIS STATEMENT | | $35.76 |

VO
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VEND ID
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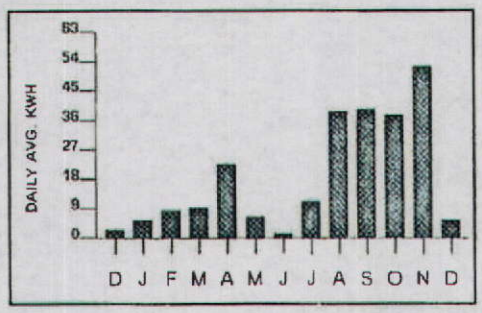



**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 6 KWH/DAY |
| USE ONE YEAR AGO - | 3 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $.98 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005433 BILL # 6 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 49354 75320

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
**DEC 30 2011**

**TOTAL DUE**
**35.76**

PLEASE ENTER AMOUNT PAID


4935475320900000003576600000000000000000003576601000000000009

Progress Energy

# STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
07346 56092

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

SERVICE ADDRESS
1501 OMNI WAY,
GAS FLARE STATION

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 1,982.49 |
| NEXT READ DATE ON OR ABOUT | DEPOSIT AMOUNT ON ACCOUNT |
| JAN 11 2012 | 4,155.00 |

**PIN: 625482228**

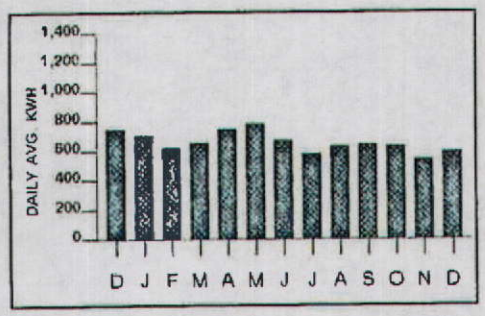
## METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002665644 |
| PRESENT | (ACTUAL) | 029848 |
| PREVIOUS | (ACTUAL) | 011209 |
| DIFFERENCE | | 018639 |
| TOTAL KWH | | 18639 |
| PRESENT KW | (ACTUAL) | 0036.72 |
| BASE KW | | 37 |
| LOAD FACTOR | | 67.7% |

RECEIVED
DEC 12 2011
BY:

GSD-1 070 GENERAL SERVICE - DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | |
|---|---|---|
| CUSTOMER CHARGE | | 11.59 |
| ENERGY CHARGE | 18639 KWH @ 3.26900¢ | 609.31 |
| FUEL CHARGE | 18639 KWH @ 4.77600¢ | 890.20 |
| DEMAND CHARGE | 37 KW @ $4.95000 | 183.15 |
| *TOTAL ELECTRIC COST | | 1,694.25 |
| GROSS RECEIPTS TAX | | 43.44 |
| COUNTY UTILITY TAX | | 78.22 |
| SALES TAX ON ELECTRIC | | 139.02 |
| LATE PAYMENT CHARGE FOR PREVIOUS BILL | | 27.56 |
| TOTAL CURRENT BILL | | 1,982.49 |
| TOTAL DUE THIS STATEMENT | | $1,982.49 |




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 601 KWH/DAY |
| USE ONE YEAR AGO - | 753 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $54.65 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005428 BILL # 1 OF 12 GRP 1368

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 07346 56092

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
DEC 30 2011

**TOTAL DUE**
1,982.49

PLEASE ENTER AMOUNT PAID

07346560921000001982495000000000000000001982495010000000009

# Progress Energy

## STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
81326 27580

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

SERVICE ADDRESS
1501 OMNI WAY,
LECHATE HOLDING AREA

| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 1,349.75 |
| NEXT READ DATE ON OR ABOUT | DEPOSIT AMOUNT ON ACCOUNT |
| JAN 11 2012 | 2,370.00 |

PIN: 625482228

### METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002652390 |
| PRESENT | (ACTUAL) | 064670 |
| PREVIOUS | (ACTUAL) | 054151 |
| DIFFERENCE | | 010519 |
| TOTAL KWH | | 10519 |
| PRESENT KW | (ACTUAL) | 0023.12 |
| BASE KW | | 23 |
| LOAD FACTOR | | 61.5% |

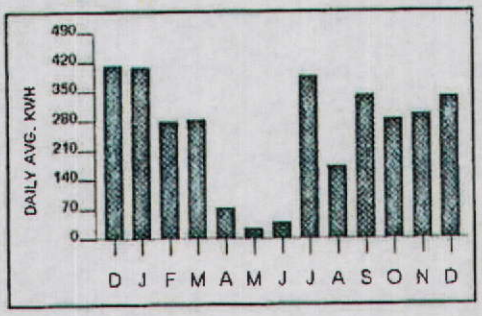
RECEIVED
DEC 12 2011
BY:

PAYMENTS RECEIVED AS OF NOV 30 2011 1,194.42 THANK YOU

GS-1 060 GENERAL SERVICE - NON DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 10519 KWH @ | 6.17300¢ | 649.34 |
| FUEL CHARGE | 10519 KWH @ | 4.77600¢ | 502.39 |
| *TOTAL ELECTRIC COST | | | 1,163.32 |
| GROSS RECEIPTS TAX | | | 29.83 |
| COUNTY UTILITY TAX | | | 61.14 |
| SALES TAX ON ELECTRIC | | | 95.46 |
| TOTAL CURRENT BILL | | | 1,349.75 |
| TOTAL DUE THIS STATEMENT | | | $1,349.75 |

VO
P.O. NO
CLASS
FROM
DATE ENTERED




### ENERGY USE

| | |
|---|---|
| DAILY AVG. USE - | 339 KWH/DAY |
| USE ONE YEAR AGO - | 415 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $37.53 |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-908-2110. to update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005436 BILL # 9 OF 12 GRP 1366

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 81326 27580

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
DEC 30 2011

**TOTAL DUE**
1,349.75

PLEASE ENTER AMOUNT PAID

81326275802000001349752000000000000000001349752010000000009

Poor Quality-Original

Progress Energy

# STATEMENT OF ELECTRIC SERVICE

DECEMBER 2011

**ACCOUNT NUMBER**
**90698 00530**

FOR CUSTOMER SERVICE OR PAYMENT LOCATIONS CALL:
1-877-372-8477

WEB SITE: www.progress-energy.com

TO REPORT A POWER OUTAGE:
1-800-228-8485

OMNI WASTE OF OSC CTY LLC

1501 OMNI WAY
SAINT CLOUD FL 34773

**SERVICE ADDRESS**
1501 OMNI WAY,
ADMIN/MAINT OFC

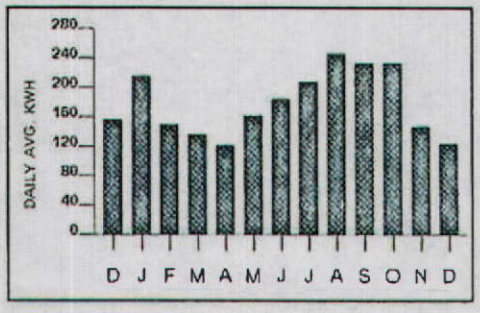
| DUE DATE | TOTAL AMOUNT DUE |
|---|---|
| DEC 30 2011 | 631.34 |
| **NEXT READ DATE ON OR ABOUT** | **DEPOSIT AMOUNT ON ACCOUNT** |
| JAN 11 2012 | 900.00 |

**PIN: 625482228**

## METER READINGS

| | | |
|---|---|---|
| METER NO. | | 002637255 |
| PRESENT | (ACTUAL) | 008048 |
| PREVIOUS | (ACTUAL) | 004121 |
| DIFFERENCE | | 003927 |
| TOTAL KWH | | 3927 |
| PRESENT KW | (ACTUAL) | 0028.32 |
| BASE KW | | 28 |
| LOAD FACTOR | | 18.9% |

RECEIVED
DEC 12 AM
BY:




**ENERGY USE**

| | |
|---|---|
| DAILY AVG. USE - | 147 KWH/DAY |
| USE ONE YEAR AGO - | 180 KWH/DAY |
| *DAILY AVG. ELECTRIC COST - | $17.63 |

PAYMENTS RECEIVED AS OF NOV 30 2011 633.12 THANK YOU

GSD-1 070 GENERAL SERVICE - DEMAND SEC
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 11.59 |
| ENERGY CHARGE | 3927 KWH @ | 3.26900¢ | 128.37 |
| FUEL CHARGE | 3927 KWH @ | 4.77600¢ | 187.55 |
| DEMAND CHARGE | 28 KW @ | $4.95000 | 138.60 |

LS-1 017 LIGHTING SER COMPANY OWNED/MAINTAINED
BILLING PERIOD..11-07-11 TO 12-08-11 31 DAYS

| | | | |
|---|---|---|---|
| CUSTOMER CHARGE | | | 1.19 |
| ENERGY CHARGE | 624 KWH @ | 2.56100¢ | 15.98 |
| FUEL CHARGE | 624 KWH @ | 4.48600¢ | 27.99 |

| | |
|---|---|
| *TOTAL ELECTRIC COST | 511.27 |
| EQUIPMENT RENTAL FOR: 6 SV RW 27500 | |
| FIXTURE TOTAL | 24.96 |
| MAINTENANCE TOTAL | 10.32 |
| GROSS RECEIPTS TAX | 13.11 |
| COUNTY UTILITY TAX | 27.26 |
| SALES TAX ON ELECTRIC | 41.95 |
| SALES TAX ON EQUIPMENT RENTAL | 2.47 |
| TOTAL CURRENT BILL | 631.34 |
| **TOTAL DUE THIS STATEMENT** | **$631.34** |

Having your phone number helps us identify your service location during power outages. Our records show your phone number is 407-891-3720. To update, please call TOLL FREE 1-866-231-6450.
Payment of your bill prior to the above due date will avoid a late payment charge of $5.00 or 1.5%, whichever is greater.
Progress Energy will be closed on December 23 and 26, 2011 and January 2, 2012. You may visit progress-energy.com for self-service options.
To report an outage, please call our outage line at 1-800-228-8485.

DETACH AND RETURN THIS SECTION MM 0005437 BILL # 10 OF 12 GRP 1365

Make checks payable to: Progress Energy Florida, Inc.

ACCOUNT NUMBER - 90698 00530

P.O. BOX 33199
ST. PETERSBURG,
FL 33733-8199

OMNI WASTE OF OSC CTY LLC
1501 OMNI WAY
SAINT CLOUD FL 34773 - 9177

**DUE DATE**
DEC 30 2011

**TOTAL DUE**
631.34

PLEASE ENTER AMOUNT PAID

9069800530100000063134100000000000000000063134101000000000009

# CHAPCO FENCE, LLC

**4417 13TH STREET #513 ST. CLOUD, FL 34769**

**Chapcofence@aol.com**

**Ph:407-892-6447 Fax:407-892-9765**

WSI
1099 Miller Drive
Altamonte Springs, Fl 32701

Mike,

Below you will find the quote you requested for the installation of fence for the JED Landfill.

*Supply and install 3,700 lf of field fence buried 12" in the ground to the existing barb wire fence.

*Supply and install 5200 lf of new 3 strand barbwire and field fence buried 12" in the ground.

TOTAL - $22,500

3 strand bwire – $1.75 lf
Field Fence – $2.65 lf

We plan on installing the field fence upside down to have the smaller holes above ground level since the holes gradually go from small too big. If you have any questions or comments please do not hesitate to give us a call.

Thanks

Jason Junnila
Chapco Fence

Leachate Disposal Costs
City of St. Cloud

**Michael Kaiser**

**From:** Todd Swingle [tswingle@stcloud.org]
**Sent:** Thursday, March 12, 2009 6:15 PM
**To:** Michael Kaiser
**Cc:** Bob MacKichan; Mark Spafford; dfm14@dbksmn.com; Linda Jaworski
**Subject:** RE: JED Landfill Draft Leachate Disposal Agreement

http://www.stcloud.org/index.asp?NID=618

Above is a web link to the rates.

For a 2" meter as stated for the initial agreement period, the base rate is $105.86 and the consumption charge is $5/1,000 gallons.

For 40,000 gallons per day every day for a month, this would be 1.2 Million Gallons and the total bill would be $6,105.86. Cost = $.005/gal

If you delivered 40,000 gallons a day 3 days a week for a month, the total would be about 520,000 gallons and the bill would be $2,705.86. Cost = .0052/gal

While we are unsure, in discussions we estimated your annual average load to be more like 6,000 gpd or 180,000 gallons per month which is $1,005.86.

To calculate any other volumes, take the total gallons for a month, divide by 1,000, multiply by $5 and add $105.86.

Please let me know if you have any additional questions.

Todd

use .01 ¢/gal for FA Estimate

**From:** Michael Kaiser [mailto:mkaiser@wasteservicesinc.com]
**Sent:** Thursday, March 12, 2009 5:55 PM
**To:** Todd Swingle
**Cc:** Bob MacKichan; Mark Spafford; dfm14@dbksmn.com
**Subject:** RE: JED Landfill Draft Leachate Disposal Agreement

Todd,

Could you please tell me what the all-in rate per gallon would be based on your rate structure if we disposed 40,000 gallons tomorrow. You have a better understanding of your rate structure than I do.

Thanks,

**Mike Kaiser**
Vice President, Environmental Management & Engineering, U.S.
Waste Services, Inc.
JED Solid Waste Management Facility
1501 Omni Way
St. Cloud, Florida 34773
(904) 673-0446 [Cell]
mkaiser@wsii.us

Leachate Haul Rates by Stafford Trucking.

January 1, 2012

Waste Services of Florida, Inc. Fuel Clause as of January 1, 2012 CPI = 3.00%

| | BASE RATES | CPI = 3.00% | NEW BASE RATES | | % INCREASE | PER TON or LD INCREASE | NEW LOAD RATE | |
|---|---|---|---|---|---|---|---|---|
| JED Leachate | $156.75 | 1.03 | $161.45 | per LD | 13.52 | $21.83 | $183.28 | per LD |
| Groveland TS | $11.40 | 1.03 | $11.74 | per Ton | 22.14 | $2.60 | $14.34 | per Ton |
| Pasco-Dade TS | $13.78 | 1.03 | $14.19 | per Ton | 26.64 | $3.78 | $17.97 | per Ton |
| Sanford TS | $11.88 | 1.03 | $12.24 | per Ton | 22.14 | $2.71 | $14.95 | per Ton |
| Sumter TS | $13.30 | 1.03 | $13.70 | per Ton | 22.14 | $3.03 | $16.73 | per Ton |
| Taft TS | $8.79 | 1.03 | $9.05 | per Ton | 15.81 | $1.43 | $10.48 | per Ton |
| Taft Compactor | $208.13 | 1.03 | $214.37 | per Load | 15.81 | $33.89 | $248.26 | per LD |

PADD Rate $3.752/gal for Lower Atlantic, refer to Contract Exhibit B for fuel matrix

$183.28 / 6000 gallons
= $.03 / gallon

Waste Services
Orlando