

**A RESOLUTION BY CITY UTILITIES COMMITTEE AUTHORIZING THE MAYOR, OR HIS DESIGNEE, TO ISSUE A TASK ORDER TO ARCADIS/BRINDLEY, PIETERS & ASSOCIATES, INC., A JOINT VENTURE FOR FC-4906A, ARCHITECTURAL, ENGINEERING AND DESIGN SERVICES, FOR POST CLOSURE AND LANDFILL MAINTENANCE OF CITY OWNED LANDFILLS IN AN AMOUNT NOT TO EXCEED TWO MILLION THREE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED TWENTY NINE DOLLARS AND NO CENTS (\$2,375,129.00); ALL CONTRACTED WORK WILL BE CHARGED TO AND PAID FROM FUND, DEPARTMENT, ORGANIZATION AND ACCOUNT NUMBER: 5401 (SOLID WASTE SERVICES REVENUE FUND) 130541 (DPW LANDFILL CLOSURE AND POST CLOSURE) 5212001 (CONSULTING/PROFESSIONAL SERVICES) 4560000 (CLOSURE AND POST CLOSURE CARE); AND FOR OTHER PURPOSES.**

**Review List:**

Santana Wright	Completed	08/30/2013 3:43 PM
Dexter White	Completed	08/30/2013 3:48 PM
Saul Schultz	Completed	09/03/2013 11:03 AM
Procurement	Completed	09/03/2013 1:45 PM
Adam Smith	Completed	09/03/2013 1:48 PM
Mayor's Office	Completed	09/03/2013 2:03 PM
Office of Research and Policy Analysis	Completed	09/03/2013 4:57 PM
City Utilities Committee	Pending	
Atlanta City Council	Pending	
Mayor's Office	Pending	

Certified by Presiding Officer	Certified by Clerk
Mayor's Action <i>See Authentication Page Attachment</i>	

**A RESOLUTION  
BY CITY UTILITIES COMMITTEE**

**A RESOLUTION BY CITY UTILITIES COMMITTEE AUTHORIZING THE MAYOR, OR HIS DESIGNEE, TO ISSUE A TASK ORDER TO ARCADIS/BRINDLEY, PIETERS & ASSOCIATES, INC., A JOINT VENTURE FOR FC-4906A, ARCHITECTURAL, ENGINEERING AND DESIGN SERVICES, FOR POST CLOSURE AND LANDFILL MAINTENANCE OF CITY OWNED LANDFILLS IN AN AMOUNT NOT TO EXCEED TWO MILLION THREE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED TWENTY NINE DOLLARS AND NO CENTS (\$2,375,129.00); ALL CONTRACTED WORK WILL BE CHARGED TO AND PAID FROM FUND, DEPARTMENT, ORGANIZATION AND ACCOUNT NUMBER: 5401 (SOLID WASTE SERVICES REVENUE FUND) 130541 (DPW LANDFILL CLOSURE AND POST CLOSURE) 5212001 (CONSULTING/PROFESSIONAL SERVICES) 4560000 (CLOSURE AND POST CLOSURE CARE); AND FOR OTHER PURPOSES.**

WHEREAS, the City of Atlanta (“City”) entered into FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 09-R-1633, adopted by City Council on September 21, 2009 and approved by the Mayor on September 25, 2009; and

WHEREAS, the City issued a Task Order for, FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture for post closure care and landfill maintenance on city owned landfills via Resolution 11-R-1229, adopted by the City Council on September 6, 2011 and approved per City Charter Section 2-403 on September 15, 2011; and

WHEREAS, the City entered into Renewal Agreement Number 1 for FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 11-R-1729, adopted by the City Council on December 5, 2011 and approved by the Mayor on December 12, 2011; and

WHEREAS, the City entered into Renewal Agreement Number 2 for FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 12-R-1648, adopted by the City Council on December 3, 2012 and approved as per City Charter Section 2-403 on December 12, 2012 giving a new expiration date of December 19, 2013; and

WHEREAS, the Department of Public Works requires Architectural and Engineering Services for post closure care and landfill maintenance on city owned landfills; and

WHEREAS, the Commissioner of the Department of Public Works and the Chief Procurement Officer have recommended the issuance of a Task Order for Architectural Engineering, and Design Services to be performed by Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture in an amount not to exceed Two Million Three Hundred Seventy Five Thousand One Hundred Twenty Nine Dollars and No Cents (\$2,375,129.00).

THE CITY COUNCIL OF THE CITY OF ATLANTA, GEORGIA HEREBY RESOLVES, that the Mayor, or his designee, is authorized to issue a Task Order to Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture for FC-4906A, Architectural, Engineering and Design Services for the purpose of providing post closure care and landfill maintenance on city owned landfills in an amount not to exceed Two Million Three Hundred Seventy Five Thousand One Hundred Twenty Nine Dollars and No Cents (\$2,375,129.00).

BE IT FURTHER RESOLVED, that the Chief Procurement Officer is directed to assist the City Attorney in the preparation of the appropriate agreement for execution by the Mayor.

BE IT FURTHER RESOLVED, that the Task Order will not become binding upon the City, and the City shall incur no obligation or liability under it until the Agreement has been approved by the City Attorney as to form, executed by the Mayor, attested to by the Municipal Clerk, and delivered to Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture.

BE IT FINALLY RESOLVED, that all contracted work will be charged to and paid from the following FDOA: 5401 (Solid Waste Services Revenue Fund) 130541 (DPW Landfill Closure and Post Closure) 5212001 (Consulting/Professional Services) 4560000 (Closure and Post Closure Care).

TRANSMITTAL FORM FOR LEGISLATION

TO MAYOR'S OFFICE

ATTN: CANDACE L. BYRD

Dept.'s Legislative Liaison: Santana Kempson Wright

Contact Number: 404-330-6579

Originating Department: Department of Public Works

Committee(s) of Purview: City Utilities Committee

Chief of Staff Deadline: August 23, 2013

Anticipated Committee Meeting Date(s): September 10, 2013

Anticipated Full Council Date: September 16, 2013

Legislative Counsel's Signature: Sam Schultz

Commissioner's Signature: [Signature]

Chief Financial Officer: \_\_\_\_\_

Chief Information Officer Signature (for IT Procurements) \_\_\_\_\_

Chief Procurement Officer Signature: [Signature]

**CAPTION**

A RESOLUTION AUTHORIZING THE MAYOR, OR HIS DESIGNEE, TO ISSUE A TASK ORDER TO ARCADIS/BRINDLEY, PIETERS & ASSOCIATES, INC., A JOINT VENTURE FOR FC-4906A, ARCHITECTURAL, ENGINEERING AND DESIGN SERVICES, FOR POST CLOSURE AND LANDFILL MAINTENANCE OF CITY OWNED LANDFILLS IN AN AMOUNT NOT TO EXCEED TWO MILLION THREE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED TWENTY NINE DOLLARS AND NO CENTS (\$2,375,129.00); ALL CONTRACTED WORK WILL BE CHARGED TO AND PAID FROM FUND, DEPARTMENT, ORGANIZATION AND ACCOUNT NUMBER: 5401 (SOLID WASTE SERVICES REVENUE FUND) 130541 (DPW LANDFILL CLOSURE AND POST CLOSURE) 5212001 (CONSULTING/PROFESSIONAL SERVICES) 4560000 (CLOSURE AND POST CLOSURE CARE); AND FOR OTHER PURPOSES.

FINANCIAL IMPACT: \$2,375,129.00

Mayor's Staff Only

Received by CPO: \_\_\_\_\_ (date)

Received by LC from CPO: \_\_\_\_\_ (date)

Received by Mayor's Office: 7/1 8/23/13 (date)

Reviewed by: \_\_\_\_\_ (date)

Submitted to Council: \_\_\_\_\_ (date)

Attachment: Approved Transmittal form (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post Closure Care)

**A RESOLUTION  
BY CITY UTILITIES COMMITTEE**

**A RESOLUTION AUTHORIZING THE MAYOR, OR HIS DESIGNEE, TO ISSUE A TASK ORDER TO ARCADIS/BRINDLEY, PIETERS & ASSOCIATES, INC., A JOINT VENTURE FOR FC-4906A, ARCHITECTURAL, ENGINEERING AND DESIGN SERVICES, FOR POST CLOSURE AND LANDFILL MAINTENANCE OF CITY OWNED LANDFILLS IN AN AMOUNT NOT TO EXCEED TWO MILLION THREE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED TWENTY NINE DOLLARS AND NO CENTS (\$2,375,129.00); ALL CONTRACTED WORK WILL BE CHARGED TO AND PAID FROM FUND, DEPARTMENT, ORGANIZATION AND ACCOUNT NUMBER: 5401 (SOLID WASTE SERVICES REVENUE FUND) 130541 (DPW LANDFILL CLOSURE AND POST CLOSURE) 5212001 (CONSULTING/PROFESSIONAL SERVICES) 4560000 (CLOSURE AND POST CLOSURE CARE); AND FOR OTHER PURPOSES.**

**WHEREAS**, the City of Atlanta (“City”) entered into FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 09-R-1633, adopted by City Council on September 21, 2009 and approved by the Mayor on September 25, 2009; and

**WHEREAS**, the City issued a Task Order for, FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture for post closure care and landfill maintenance on city owned landfills via Resolution 11-R-1229, adopted by the City Council on September 6, 2011 and approved per City Charter Section 2-403 on September 15, 2011; and

**WHEREAS**, the City entered into Renewal Agreement Number 1 for FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 11-R-1729, adopted by the City Council on December 5, 2011 and approved by the Mayor on December 12, 2011; and

**WHEREAS**, the City entered into Renewal Agreement Number 2 for FC-4906A, Contract for Architectural, Engineering and Design Services with Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture via Resolution 12-R-1648, adopted by the City Council on December 3, 2012 and approved as per City Charter Section 2-403 on December 12, 2012 giving a new expiration date of December 19, 2013; and

**WHEREAS**, the Department of Public Works requires Architectural and Engineering Services for post closure care and landfill maintenance on city owned landfills; and

**WHEREAS**, the Commissioner of the Department of Public Works and the Chief Procurement Officer have recommended the issuance of a Task Order for Architectural Engineering, and

Design Services to be performed by Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture in an amount not to exceed Two Million Three Hundred Seventy Five Thousand One Hundred Twenty Nine Dollars and No Cents (\$2,375,129.00).

**THE CITY COUNCIL OF THE CITY OF ATLANTA, GEORGIA HEREBY RESOLVES**, that the Mayor, or his designee, is authorized to issue a Task Order to Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture for FC-4906A, Architectural, Engineering and Design Services for the purpose of providing post closure care and landfill maintenance on city owned landfills in an amount not to exceed Two Million Three Hundred Seventy Five Thousand One Hundred Twenty Nine Dollars and No Cents (\$2,375,129.00).

**BE IT FURTHER RESOLVED**, that the Chief Procurement Officer is directed to assist the City Attorney in the preparation of the appropriate agreement for execution by the Mayor.

**BE IT FURTHER RESOLVED**, that the Task Order will not become binding upon the City, and the City shall incur no obligation or liability under it until the Agreement has been approved by the City Attorney as to form, executed by the Mayor, attested to by the Municipal Clerk, and delivered to Arcadis/Brindley, Pieters & Associates, Inc., a Joint Venture.

**BE IT FINALLY RESOLVED**, that all contracted work will be charged to and paid from the following FDOA: 5401 (Solid Waste Services Revenue Fund) 130541 (DPW Landfill Closure and Post Closure) 5212001 (Consulting/Professional Services) 4560000 (Closure and Post Closure Care).

**Part II: Legislative White Paper:** (This portion of the Legislative Request Form will be shared with City Council members and staff)

**A. To be completed by Legislative Counsel:**

**Caption:**

A RESOLUTION AUTHORIZING THE MAYOR, OR HIS DESIGNEE, TO ISSUE A TASK ORDER TO ARCADIS/BRINDLEY, PIETERS & ASSOCIATES, INC., A JOINT VENTURE FOR FC-4906A, ARCHITECTURAL, ENGINEERING AND DESIGN SERVICES, FOR POST CLOSURE AND LANDFILL MAINTENANCE OF CITY OWNED LANDFILLS IN AN AMOUNT NOT TO EXCEED TWO MILLION THREE HUNDRED SEVENTY FIVE THOUSAND ONE HUNDRED TWENTY NINE DOLLARS AND NO CENTS (\$2,375,129.00); ALL CONTRACTED WORK WILL BE CHARGED TO AND PAID FROM FUND, DEPARTMENT, ORGANIZATION AND ACCOUNT NUMBER: 5401 (SOLID WASTE SERVICES REVENUE FUND) 130541 (DPW LANDFILL CLOSURE AND POST CLOSURE) 5212001 (CONSULTING/PROFESSIONAL SERVICES) 4560000 (CLOSURE AND POST CLOSURE CARE); AND FOR OTHER PURPOSES.

**Committee of Purview: City Utilities Committee**

**Committee Meeting Date: September 10, 2013**

**Council Meeting Date: September 16, 2013**

**Requesting Dept.: Department of Public Works**

**B. To be completed by the department:**

**1. Please provide a summary of the purpose of this legislation (Justification Statement).**

The purpose of this legislation is to appropriate funds to the existing annual contract with Arcadis/Brindley, Pieters & Associates, a Joint Venture for FC-4906A, Annual Contract for Architectural and Engineering Services for required post closure care and landfill maintenance, slope repairs and gas system upgrades in the amount of \$2,375,129.

**2. Please provide background information regarding this legislation.**

The Georgia Environmental Protection Division (EPD) rules require the City to perform post closure care to all four (4) landfills for a minimum of 30 years. Since the closure of the landfills between 1999 and 2000. The waste masses have continued to break down and settle. This settling causes gas lines to sag and break which impede the flow of landfill gas to the flares. Various climates and inclement weather has also negatively impacted various gas structures necessary for optimizing landfill gas management and obtaining compliance. At a minimum, the City must stabilize and repair slope failure, install and upgrade methane wells, and gas lines.

**3. If Applicable/Known:**

(a) **Contract Type:** Professional Services, City-wide A&E

(b) **Source Selection:**

(c) **Bids/Proposals Due:**

(d) **Invitations Issued:**

(e) **Number of Bids:**

(f) **Proposals Received:**

(g) **Bidders/Proponents:**

(h) **Term of Contract:**

**4. Fund Department Account Center:** 5401 (Solid Waste Services Revenue Fund) 130541 (DPW Landfill Closure and Post Closure) 5212001 (Consulting/Professional Services) 4560000 (Closure and Post Closure Care)

**5. Source of Funds:**

**6. Fiscal Impact:** \$2,375,129

**7. Method of Cost Recovery:**

**This Legislative Request Form Was Prepared By:** Carla Lipscomb



ARCADIS/BPA, Joint Venture  
 2410 Paces Ferry Road  
 Suite 400  
 Atlanta  
 Georgia 30339  
 Tel 770 431 8666  
 Fax 770 435 2666

Ms. Carla Lipscomb  
 Solids Waste Disposal Operations Manager  
 Department of Public Works  
 City of Atlanta  
 55 Trinity Avenue, SW, Suite 47  
 Atlanta, GA 30303

WATER RESOURCES

Subject:

Landfill Post-Closure Care and Operational Maintenance Project (FY2014)  
 City of Atlanta Annual Contract for Architectural and Engineering Services  
 Contract No. FC-4906-A

Date:  
 June 21, 2013

Dear Ms. Lipscomb:

Contact:  
 John Dean

ARCADIS/BPA, Joint Venture is pleased to submit this proposal to continue to provide professional services for the Landfill Post-Closure Care and Operational Maintenance project for fiscal year 2014. Enclosed please find the detailed information listed below, which includes the basis of our estimates and documentation substantiating our proposal.

Phone:  
 770.384.6521

1. Task Order Template – End Result Project
2. Exhibit A – Scope of Services
3. Exhibit B – Task Order Billing and Payment Terms
4. Exhibit C – City of Atlanta FBE Certification for Oasis Consulting Services
5. Exhibit D – City of Atlanta FBE Certification for Analytical Environmental Services
6. Exhibit E – Résumés

E-mail:  
 john.dean@  
 arcadis-us.com

Our ref:  
 GABPA119

Upon acceptance of this proposal, ARCADIS/BPA requests that Oasis Consulting Services (FBE) and Analytical Environmental Services (FBE) continue to be included on the ARCADIS/BPA joint venture team as M/FBE team consultants. Each proposed team consultant's City of Atlanta certification letter is attached to the enclosed task order proposal. Services will be provided in accordance with the contract labor rates outlined in the ARCADIS/BPA Architectural and Engineering Services contract. Indirect expenses will be invoiced at cost.

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the signature page of this document.*



Ms. Carla Lipscomb  
June 21, 2012

We look forward to providing these services to the City of Atlanta. Please do not hesitate to call if you have any questions.

Sincerely,

ARCADIS/BPA, Joint Venture

John C. Dean, PE  
Vice President and Contract Manager

W BARNES  
BY PERMISSION

Wesley Barnes, PE  
Senior Vice President and  
Deputy Contract Manager

Enclosure

*This proposal and its contents shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate the proposal. This proposal is not intended to be binding or form the terms of a contract. The scope and price of this proposal will be superseded by the contract. If this proposal is accepted and a contract is awarded to ARCADIS/BPA as a result of—or in connection with—the submission of this proposal, ARCADIS/BPA and/or the client shall have the right to make appropriate revisions of its terms, including scope and price, for purposes of the contract. Further, client shall have the right to duplicate, use, or disclose the data contained in this proposal only to the extent provided in the resulting contract.*

Page:  
2/2



## Task Order Template – End Result Project

Agreement Number: FC-4906A Architectural Engineering and Design Services (“Agreement”)

Task Order Number: 23

Task Order Maximum Payment Amount: \$2,375,129

The above referenced Task Order is made and entered into by and between the City of Atlanta (“CITY”), pursuant to the Agreement;

AND **ARCADIS/BPA, a Joint Venture (“CONSULTANT”)**.

This Task Order is made a part of the Agreement between the City and the Consultant, together with all attached exhibits made a part of this Task Order.

The period of performance/delivery date for this Task Order begins as of the Notice to Proceed, and shall be completed within 12 Calendar months unless a written modification to this Task Order is made by the City.

Task Order Services to be Provided: Consultant shall perform all work related to this Task Order in accordance with the scope of services, specifications and the Consultant’s proposal attached and incorporated as Exhibit A, Landfill Post-Closure Care and Operation & Maintenance for Key Road, Cascade Road, Gun Club Road, and East Confederate Landfills including any unscheduled maintenance and emergency work required during the work period for completion of this Task.

Task Order Milestones: **Annual Site and Landfill Gas System Evaluation Reports**  
**Landfill Gas Management & Optimization Quarterly Reports**  
**Groundwater Semiannual Reports**  
**Surface Monitoring Semiannual Reports**  
**Greenhouse Gas Monitoring Annual Reports**  
**Phase 3 GCCS Repairs and Upgrades at Gun Club Landfill**  
**Construction of Cascade Road LF Slope & Drainage Improvements**

Additional Task Order Provisions: Perform any unscheduled maintenance and emergencies

Key Task Order Personnel: Services Coordinator/Project Manager – **John Dean, PE**. Other Key Personnel – **Carleton Sherrer, PE; Tom Zarzaca, PE; Robbie Blanton, PE; Paul Augood, PhD; Adam Hayes, PE, and Glenn B. Wallace.**

Staffing Proposal: See Table 1 below.

### Task Order Template – End Result Project

Estimated Labor Hours and Associated Fee for Task by Labor Category: See Table 1 below.

City Invoicing Contact Information:

**Carla Lipscomb**  
 Solids Waste Disposal Operations Manager  
 Department of Public Works  
 55 Trinity Avenue, SW  
 Suite 47  
 Atlanta, Georgia 30303  
 Phone: 404-787-3894  
 Fax: 404-739-4133  
 E-Mail: clipscomb@atlanta.gov

Consultant Invoicing Contact Information:

**John Dean**  
 Vice President & Contract Manager  
 ARCADIS/BPA, A Joint Venture  
 2410 Paces Ferry Road  
 Suite 400  
 Atlanta, Georgia 30339  
 Phone: 770-384-6521  
 Fax: 770-435-2666  
 E-Mail: john.dean@arcadis-us.com

Attachments: **Exhibit A**     **Scope of Work for Landfill Post-Closure Care and Operation & Maintenance**  
**Exhibit B**     **Task Order Billing and Payment Terms**  
**Exhibit C**     **APABE Certification for Oasis Consulting Services**  
**Exhibit D**     **WBE Certification for Analytical Environmental Services**  
**Exhibit E**     **Résumés**

**Table 1 – Estimated Labor Hours and Associated Fee for Task by Labor Category:**

Labor Category	Home Office Rate	Estimated Home Office Hours per Category	Field Office Rate	Estimated Field Office Hours per Category	Total Estimated Fee per Category
Project Manager 4	\$199.00		\$168.00		\$0
Project Manager 3	\$180.00	443.9	\$157.00		\$79,902
Project Manager 2	\$156.00	40.2	\$133.00		\$6,271
Engineer 10	\$230.00	116.7	\$192.00		\$26,841
Engineer 9	\$192.00	277.2	\$167.00		\$53,222
Engineer 8	\$185.00	1177.2	\$158.00		\$217,782
Engineer 7	\$163.00		\$140.00		\$0
Engineer 6	\$140.00	175.3	\$120.00		\$24,542
Engineer 5	\$120.00	112.7	\$100.00		\$13,524
Engineer 4	\$105.00		\$90.00		\$0
Engineer 3	\$90.00		\$75.00		\$0
Designer 5	\$122.00		\$106.00		\$0
Designer 4	\$102.00		\$88.00		\$0
Designer 3	\$92.00		\$77.00		\$0

### Task Order Template – End Result Project

Labor Category	Home Office Rate	Estimated Home Office Hours per Category	Field Office Rate	Estimated Field Office Hours per Category	Total Estimated Fee per Category
Scientist 8	\$192.00	71.2	\$169.00		\$13,670
Scientist 7	\$163.00	489.0	\$140.00		\$79,707
Scientist 6	\$139.00	1142.8	\$124.00		\$158,849
Scientist 5	\$118.00	2392.8	\$104.00		\$282,350
Surveyor, Land	\$141.00		\$125.00		\$0
Surveyor 5	\$122.00		\$110.00		\$0
Surveyor 4	\$108.00		\$98.00		\$0
Surveyor 3	\$90.00		\$83.00		\$0
Survey Crew (2 person)	\$125.00		\$102.00		\$0
CAD Manager	\$124.00	1324.5	\$106.00		\$164,238
CAD Technician 4	\$93.00	256.0	\$80.00		\$23,808
CAD Technician 3	\$80.00	6488.3	\$68.00		\$519,064
Construction Manager	\$160.00		\$135.00		\$0
Resident Engineer	\$138.00		\$115.00		\$0
Senior Field Engineer	\$126.00		\$104.00		\$0
Field Engineer	\$102.00		\$86.00		\$0
Construction Inspector	\$90.00	3642.7	\$74.00		\$327,843
Land Acquisition Manager	\$126.00		\$102.00		\$0
Appraiser Level V	\$154.00		\$144.00		\$0
Appraiser Level IV	\$139.00		\$127.00		\$0
Appraiser Level III	\$115.00		\$107.00		\$0
Appraiser Level II	\$115.00		\$107.00		\$0
Office Manager	\$90.00		\$76.00		\$0
Administrative Assistant, Sr.	\$80.00	185.4	\$68.00		\$14,832
Administrative Assistant	\$60.00	1119.1	\$50.00		\$67,146
Computer Aided Facility Management Systems Consultant Senior	\$148.00		\$129.00		\$0
Landscape Architect, Principal	\$160.00		\$140.00		\$0
Landscape Architect	\$130.00		\$113.00		\$0
Landscape Designer	\$98.00		\$86.00		\$0
Architect, Principal	\$162.00		\$140.00		\$0
Architect	\$140.00		\$125.00		\$0
Interior Designer	\$133.00		\$118.00		\$0
Graphic Designer	\$100.00		\$88.00		\$0
<b>Task Order Labor Totals</b>		<b>19455.0</b>			<b>\$2,073,593</b>
<b>Laboratory Expense</b>					<b>\$301,536</b>
<b>Task Order Total</b>					<b>\$2,375,129</b>

\***Laboratory Expense:** Based on per sample cost for each ground and surface water monitoring event. Analytical Environmental Services, a certified WBE Firm will perform all testing.

Agreement Number: FC-4906A Architectural Engineering and Design Services  
Task Order Consultant: ARCADIS/BPA a Joint Venture

**Task Order Template – End Result Project**

This Task Order is made a part of the Professional Services Agreement referenced above between the City and the Consultant.

Task Order Commencement Date: **At Notice to Proceed**

Task Order Completion Date: **June 2014**

Task Order Terms for Expenses: **Reimbursed at Cost**

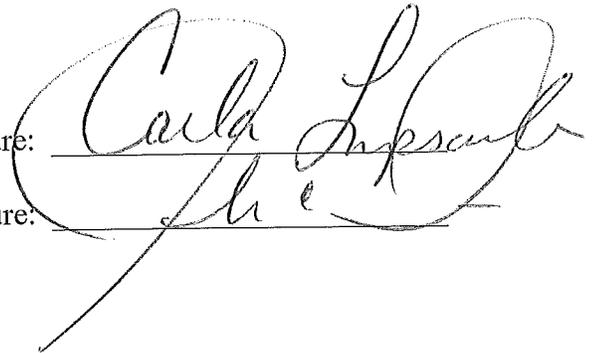
Task Order Billing and Payment Terms: **Attached and incorporated as Exhibit B**

Maximum Allowable Compensation: **\$2,375,129**

Authorized Representatives and Signatures:

City of Atlanta Representative: **Carla Lipscomb**

Signature:



Consultant Representative: **John Dean**

Signature:

Estimated MBE/WBE Summary:

MBE/WBE Firms Utilized in Task Order: **Oasis Consulting Services (FBE) and Analytical Environmental Services (FBE)**

Estimated APABE Percentage: **0.0%** Amount: **\$0**

Estimated FBE Percentage: **64.8%** Amount: **\$1,540,129**

Total Estimated APABE/FBE Percentage: **64.8%** Amount: **\$1,540,129**

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post

Agreement Number: FC-4906A Architectural Engineering and Design Services  
Task Order Consultant: ARCADIS/BPA a Joint Venture

Page 5

### Task Order Template – End Result Project

---

City Invoicing Contact Information:

Consultant Invoicing Contact Information:

**Carla Lipscomb**

Solids Waste Disposal Operations Manager  
Department of Public Works  
55 Trinity Avenue, SW  
Suite 47  
Atlanta, GA 30303  
Phone: 404-787-3894  
Fax: 404-739-4133  
E-Mail: clipscomb@atlanta.gov

**Frankie Raper**

ARCADIS/BPA, A Joint Venture  
2410 Paces Ferry Road  
Suite 400  
Atlanta, GA 30339  
Phone: 770-384-6624  
Fax: 770-435-2666  
E-Mail: frankie.raper@arcadis-us.com

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post



Exhibit A  
Scope of Services

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post



**Exhibit A**  
Scope of Services

**Overview**

ARCADIS/BPA, Joint Venture is pleased to present this scope of services and fee estimate for the Landfill Post-Closure Care and Operational Maintenance project for the Key Road, Cascade Road, Gun Club Road, and East Confederate City of Atlanta (COA) landfills. ARCADIS/BPA, Joint Venture team members involved in the project include ARCADIS U.S., Inc. (ARCADIS), Oasis Consulting Services (Oasis), and Analytical Environmental Services, all of which have past experience working as a team. See attached resumes.

Our proposal is based on our continuation of the services provided during fiscal year 2013 for each of the COA landfill sites as requested by Ms. Carla Lipscomb, Solids Waste Disposal Operations Manager for the Department of Public Works. The proposal is based on performing the work over an approximate 12-month period ending June 30, 2014. The tasks outlined in the Scope of Work are further defined below, including any assumptions made for a basis of the cost for this proposal.

**Task 1: Annual Site and Landfill and Gas System Evaluation (Not Included, Required Annually)**

- No services to be provided for this task.

**Task 2: Project Management, Scheduling, Record Keeping, and Reporting**

- Project management and scheduling for all landfills
  - Manage coordination between subcontractors
  - Handle project invoicing and payment of subcontractors
  - Set and manage the overall schedule of activities for the landfills and coordinate with subcontractors and the City
  - Prepare one year-end report on the results of the CAP and ACM for each landfill

**Task 3: Landfill Compliance Inspections (Monthly by COA Staff)**

- No services to be provided for this task. COA will conduct the required compliance inspections and complete reporting as required for Georgia EPD.

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



## Exhibit A

### Scope of Services

#### Task 4: On- and Off-Site Meetings

- Meet with City Solid Waste staff on a monthly basis to review progress and coordinate project activities.
- Meet as needed with City officials
  - Schedule meetings as needed with City officials to review the status of each landfill; assume that two ARCADIS staff members will attend each meeting with Oasis staff members attending as needed
- Unscheduled meetings with the Georgia Environmental Protection Division (EPD)
  - Up to two unscheduled meetings with Georgia EPD; assume that two ARCADIS staff members will attend each meeting with Oasis staff members attending as needed

#### Task 5: Landfill Maintenance Inspection and Repair (Monthly by COA Staff)

- No services to be provided for this task. COA will complete routine inspections and make any necessary repairs.

#### Task 6: Obtain Any Necessary Permits (Not Included)

- No services to be provided for this task.

#### Task 7: Landfill Gas Management and Optimization (Quarterly by COA Staff)

- No services to be provided for this task. COA will conduct routine monitoring, tuning, and maintenance of gas wells and flares; download data from chart recorders; and report all initial and adjusted well and flare data in a monthly report for each landfill gas system.

#### Task 8: Methane Gas Monitoring and Reporting (Monthly by COA Staff)

- No services to be provided for this task. COA will conduct the required gas monitoring complete reporting as required for Georgia EPD.

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



**Exhibit A**  
Scope of Services

**Task 9: Groundwater Monitoring and Reporting (Required Semiannually)**

- Task includes the second 2013 and first 2014 semiannual monitoring event only.
- Semiannual field events and reporting for each landfill, including annual Appendix II and annual monitored natural attenuation (MNA) analyses.
- Annual summary report on MNA/Corrective Action Plan (CAP)

**Task 10: Surface Water Monitoring and Reporting (Required Semiannually)**

- Task includes the second 2013 and first 2014 semiannual monitoring event only.
- Semiannual field events and reporting for each landfill concurrent with general groundwater monitoring as addressed in Task 9.
- Includes collection points at each landfill per approved monitoring plan.

**Task 11: Support COA in Greenhouse Gas Monitoring and Reporting**

- Greenhouse gas monitoring and reporting for the Key Road Landfill, Gun Club Road Landfill, and Cascade Road Landfill. Monitoring to be performed weekly by COA staff. ARCADIS/BPA is to assist COA with reporting.
  - Record gas quality once a week (COA)
  - Download data from chart recorder (COA)
  - Prepare data for annual report (ARCADIS/BPA)
  - Schedule flowmeter calibration (including meter loan, meter removal and replacement, and shipping) (ARCADIS/BPA)

**Task 12: Preventive Maintenance (Performed on an As-Needed Basis)**

- Preventive maintenance as needed for the Key Road Landfill, Gun Club Road Landfill, and Cascade Road Landfill (assume up to six events per landfill for estimating purposes)
  - GCCS wellheads

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



**Exhibit A**  
Scope of Services

- Sample ports, port caps, thermometers, and covers replaced as required
- Clamps and couplings tightness check and adjusted as required
- Compressed air
  - Fittings tightened as required
  - Compressor oil levels checked and topped as required
  - Air lines drained at appropriate locations
- Condensate line fittings tightened as required
- Valves lubricated if accessible at manufacturer-specified intervals
- Flare
  - Motors and blowers lubricated (typically quarterly)
  - Belts tensioned, couplings aligned (typically annually)
  - Flame arrestor cleaned as required (typically annually)
  - KOP demister pad cleaned as required (typically annually)
  - Valves and louver bearings greased as specified (typically quarterly)
  - Debris removed from base of enclosed flare stacks – as required

**Task 13: Supplemental Monitoring/Adjustments to Gas System (Not Included, Performed Monthly or As Needed Based on Annual Evaluation Findings)**

- No services to be provided for this task.

**Task 14: Blower Repairs and Maintenance (Scheduled Maintenance by COA Staff)**

- No services to be provided for this task. COA will perform scheduled maintenance on equipment and make any necessary repairs.

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



**Exhibit A**  
Scope of Services

**Task 15: Unscheduled Maintenance and Emergencies**

- Unscheduled maintenance and emergencies for the Key Road Landfill, Cascade Road Landfill, Gun Club Road Landfill, and East Confederate Landfill
  - Replace wellheads, flexible couplings, hoses, and hose clamps with specified type
  - Replace thermocouples (pilot and main thermocouples) – includes supply of thermocouples and man-lift rental
  - Blocked/flooded laterals/headers
    - Inspection to include differential pressure testing methods, camera inspection, and repair recommendations
    - Repair or upgrade will be an on-call task
  - Restart of flare (after flame failure, flooded sump, failed air compressor, etc.)
    - Determine cause and take appropriate action
      - Check propane, ignition, and thermocouple operation
      - Check compressed air or nitrogen supply/restart compressor or switch nitrogen bottle if required
      - Drain sump
    - Restart flare
    - Send report to City, including any additional action required
  - Restart flare after power failure
    - Determine why auto restart failed
    - Restart flare
    - Send report to City, including any additional action required

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



## Exhibit A

### Scope of Services

- Remove water from vaults as required
  - Use suitable pump and transport to vault
    - Pump valve vaults
    - Pump sump vaults
  - Dispose of liquids as determined by City

#### Task 16: Reserved.

#### Task 17: Phase 3 GCCS Repairs and Upgrades

- Phase 3 GCCS repairs and upgrades for the Gun Club Road Landfill.
  - Gun Club Road Landfill, 10 Planned New Wells
    - Provide engineering, design and CQA services during construction
    - Repair leaking air line/force mains
    - Install new wells to an average depth of 60 feet
    - Install header, laterals, compressed air line and force main extension
    - Install wellheads
    -

#### Task 18: Cascade LF Slope and Drainage Improvements, Construction

- Construct the improvements per the design drawings and technical specifications developed as part of the FY 2013 services and provide as-built survey of the completed project.

*Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.*



**Exhibit A**  
Scope of Services

**Compensation**

The estimated fee to perform the above-mentioned services is as follows:

		FY13 (thru 6/30/14)
Task 1	Annual Site and Landfill and Gas System Evaluation	\$0
Task 2	Project Management, Scheduling, Record Keeping	\$100,000
Task 3	Landfill Compliance Inspections (Monthly)	(By COA)
Task 4	On- and Off-Site Meetings	\$36,228
Task 5	Landfill Maintenance Inspection and Repair (Monthly to be Included in the Compliance Inspection)	(By COA)
Task 6	Obtain Any Necessary Permits (Major and Minor Modifications)	\$0
Task 7	Landfill Gas Management and Optimization (Quarterly)	(By COA)
Task 8	Methane Gas Monitoring & Reporting (Monthly)	(By COA)
Task 9	Groundwater Monitoring & Reporting (2 <sup>nd</sup> 2013 & 1 <sup>st</sup> 2014 Event)	\$532,000
Task 10	Surface Water Monitoring & Reporting (2 <sup>nd</sup> 2013 & 1 <sup>st</sup> 2014 Event)	\$20,000
Task 11	Support COA in GHG Monitoring & Reporting	\$48,000
Task 12	Preventive Maintenance (As Needed)	\$40,000
Task 13	Supplemental Monitoring/Adjustments to Gas System (As Needed)	\$0
Task 14	Blower Repairs and Maintenance	\$0
Task 15	Unscheduled Maintenance and Emergencies	\$100,000
Task 16	Reserved	\$0
Task 17	Phase 3 GCCS Repairs and Upgrades, Gun Club LF	\$168,901
Task 18	Cascade Slope and Drainage Improvements, Construction	\$1,330,000
Total		\$2,375,129

Use or disclosure of information contained on this sheet is subject to the restriction and disclaimer located on the cover letter of this document.



**Exhibit B**  
Billing and Payment Terms

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post



**EXHIBIT B  
TASK ORDER BILLING  
AND PAYMENT TERMS**

Page 1

**8**      Payment Procedures.

8.1      General. City will not be obligated to pay Consultant any amount in addition to the Charges set forth in an applicable Task Order for Consultant's provision of the Services. Consultant Personnel hourly rates, reimbursable expenses, and other compensable items under this Agreement and issued Task Orders are set forth on Exhibit A.1, Compensation.

8.2      Invoices. Consultant shall prepare and submit to City invoices for payment of all charges in accordance with the applicable Task Order. Each invoice shall be in such detail and in such format as City may reasonably require. To the extent not set forth in a Task Order, Consultant shall invoice City monthly or as needed for Services rendered.

8.3      Taxes. The Charges are inclusive of all taxes, levies, duties, and assessments ("Taxes") of every nature due in connection with Consultant's performance of the Services. Consultant is responsible for payment of such Taxes to the appropriate governmental authority. If Consultant is refunded any Tax payments made relating to the Services, Consultant shall remit the amount of such refund to City within forty-five (45) days of receipt of the refund.

8.4      Maximum Amount. City shall not be obligated to pay any amount in excess of the Annual Maximum Payment Amount for all Services under all Task Orders, nor shall City be obligated to pay any amount in excess of a Task Order Maximum Payment Amount.

8.5      Payment. City shall endeavor to pay all undisputed Charges within thirty (30) days of the date of the receipt by City of a properly rendered and delivered invoice. Notwithstanding the forgoing, unless otherwise provided in the Task Order, all undisputed Charges on an invoice properly rendered and delivered shall be payable within forty-five (45) days of the date of receipt by City.

8.6      Disputed Charges. If City in good faith disputes any portion of an invoice, City may withhold such disputed amount and notify Consultant in writing of the basis for any dispute Within thirty (30) days of the later of: (a) receipt of the invoice; or (b) discovery of the basis for any such dispute. City and Consultant agree to use all reasonable commercial efforts to resolve any disputed amount in any invoice within thirty (30) days of the date City notifies Consultant of the disputed amount.

8.7      No Acceptance of Nonconforming Work. No payment of any invoice or any partial or entire use of the Services by City constitutes acceptance of any Services.

8.8      Payment of Other Persons. Prior to the issuance of final payment from City, Consultant shall certify to City in writing, in a form satisfactory to City, that all subcontractors, material men, suppliers, and similar firms or persons engaged by Consultant in connection with this Agreement have been paid in full or will be paid in full utilizing the monies constituting final payment to Consultant.

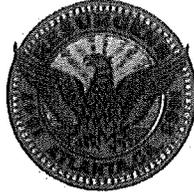
*This proposal and its contents shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate the proposal. This proposal is not intended to be binding or form the terms of a contract. The scope and price of this proposal will be superseded by the contract. If this proposal is accepted and a contract is awarded to ARCADIS/BPA as a result of—or in connection with—the submission of this proposal, ARCADIS/BPA and/or the client shall have the right to make appropriate revisions of its terms, including scope and price, for purposes of the contract. Further, client shall have the right to duplicate, use, or disclose the data contained in this proposal only to the extent provided in the resulting contract.*

g:\www\gabpa100-coa contract-ll-general items\1\_gen\3\_proposal\landfill post closure care & o & p\appendix b templatey template\_br.doc



**Exhibit C**  
FBE Certification  
Oasis Consulting Services

**Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post**



## CITY OF ATLANTA

Kasim Reed  
Mayor

SUITE 1700  
55 TRINITY AVENUE, SW  
ATLANTA, GA 30303  
(404) 330-6010 Fax: (404) 658-7359  
Internet Home Page: [www.atlantaga.gov](http://www.atlantaga.gov)

OFFICE OF CONTRACT COMPLIANCE  
Hubert Owens  
Director  
[howens@atlantaga.gov](mailto:howens@atlantaga.gov)

March 08, 2012

Ms. Claudia Zibanejadrad  
**Oasis Construction Services, Inc.**  
45 Woodstock St.  
Roswell, GA 30075

Dear Ms. Zibanejadrad:

Your firm has been certified as a **Female Business Enterprise (FBE)** with the City of Atlanta Equal Business Opportunity Program (EBO). Your company's certification will last for a period of two (2) years from the date on this certification letter. Certification entitles your firm to be included in EBO plans submitted by contractors bidding on City of Atlanta projects. You may apply for recertification as a **FBE** utilizing a short form application if the short form is filed in the Office of Contract Compliance no later than January 15, 2014. Any request for certification following that date must be made utilizing the complete long form application for certification.

As a certified firm, you are required to notify the Office of Contract Compliance if the ownership or control of your firm changes or if your office relocates outside of the twenty-county Atlanta Regional Development Commission (ARDC) area: **Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Pickens, Rockdale, Spalding and Walton counties.** Failure to provide this notification, in writing, may result in your firm being removed from the Equal Business Opportunity Program.

Sincerely,

Hubert Owens  
Director, Mayor's Office of Contract Compliance

Certification #: 2012-084

Vendor #: 908349

Phone #: (678) 739-2400

Fax #: (770) 552-5550

**Business: Engineering, Geotechnical Engineering, Environmental Consulting**



**Exhibit D**  
FBE Certification  
Analytical Environmental  
Services

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post



## CITY OF ATLANTA

Kasim Reed  
Mayor

SUITE 1700  
55 TRINITY AVENUE, SW  
ATLANTA, GA 30303  
(404) 330-6010 Fax: (404) 658-7359  
Internet Home Page: [www.atlantaga.gov](http://www.atlantaga.gov)

OFFICE OF CONTRACT COMPLIANCE  
Hubert Owens  
Director  
[howens@atlantaga.gov](mailto:howens@atlantaga.gov)

November 4, 2011

Ms. Andria Yildirim  
Analytical Environmental Services, Inc.  
3785 President Pkwy.  
Atlanta, GA 30340

Dear Ms. Yildirim:

Your firm has been certified as a **Female Business Enterprise (FBE)** with the City of Atlanta Equal Business Opportunity Program (EBO). Your company's certification will last for a period of two (2) years from the date on this certification letter. Certification entitles your firm to be included in EBO plans submitted by contractors bidding on City of Atlanta projects. You may apply for recertification as a **FBE** utilizing a short form application if the short form is filed in the Office of Contract Compliance no later than September 15, 2013. Any request for certification following that date must be made utilizing the complete long form application for certification.

As a certified firm, you are required to notify the Office of Contract Compliance if the ownership or control of your firm changes or if your office relocates outside of the twenty-county Atlanta Regional Development Commission (ARDC) area: **Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Pickens, Rockdale, Spalding and Walton counties.** Failure to provide this notification, in writing, may result in your firm being removed from the Equal Business Opportunity Program.

Sincerely,

Hubert Owens  
Director, Mayor's Office of Contract Compliance

Certification #: 2011-443

Vendor #: 700631

Phone #: (770) 457-8177

Fax #:

Business: Environmental Consulting Hazardous Waste Management/Removal, Asbestos Abatement

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post



Exhibit E  
Résumés

Attachment: FC-4906A, Arcadis Task Order legislation (13-R-3546 : Task Order for FC-4906A with Arcadis for Landfill Maintenance and Post

# ARCADIS

## Education

BS, Civil Engineering, Georgia  
Institute of Technology, 1970

## Years of Experience

Total – 40  
With ARCADIS – 12

## Professional Registrations

Professional Engineer in  
Georgia, Florida, Iowa,  
Kentucky, New York,  
Pennsylvania

## Professional Qualifications

National Society of Professional  
Engineers  
American Water Works  
Association  
Water Environment Federation  
Georgia Water and Pollution  
Control Association,  
President 1997-98  
Consulting Engineers Council of  
Georgia (Director)

## John C. Dean, PE

### Vice President/Water Resources Business Practice Manager

Mr. Dean has 40 years of experience in engineering design and management. He is experienced in the management of projects related to watershed assessments, water supply, treatment, and distribution; wastewater collection, treatment and disposal; development of feasibility studies related to such projects; development of financial studies related to the funding and continued operations of such projects including grant applications, where appropriate, rate studies and projections, and revenue bond reports. He developed specific rate structures for several utilities and assisted with the continued evaluation and updating of those structures on a regular basis. Mr. Dean is experienced in civil engineering related to industrial, institutional and commercial site development and permitting.

#### Solid Waste Management

##### Seminole Road Landfill

DeKalb County, DeKalb County, GA

Principal-in-Charge and Project Manager for design, bidding, construction administration and Construction Quality Assurance for a 50 acre closure for a Subtitle D cell. The project included a subtitle D landfill cap, 8,000 feet of access roads, storm water drainage design including buried down drains, inlet structures, rock toe drains, and terrace drainage flaps. Coordination was required on the active gas system to maintain, extend and assure continuous operation of existing wells in order to allow for continuous operation of the on-site cogeneration facility.

##### LaGrange Sanitary Landfill

City of LaGrange, LaGrange, GA

Principal-in-Charge 47-acre Subtitle D landfill. Design included bentonite-amended clay liner system and direct discharge of leachate to city sewer system.

##### Seminole Road Landfill

DeKalb County, DeKalb County, GA

Principal-in-Charge 38-acre "piggyback" Subtitle D cell, most of which is on top of existing Phase I unlined area. Design included special overlift liner for portion of cell on top of Phase I fill.

ARCADIS

John C. Dean, PE

Vice President/Water  
Resources Business  
Practice Manager

#### Program Management

##### **Atlanta Annual Contract for Architectural and Engineering (A/E) Services**

City of Atlanta, Atlanta, GA

Principal-in-Charge for the ARCADIS/ BPA, Joint Venture (JV) with ARCADIS serving as the managing partner to perform services for the Annual Contract for A/E Services for the Departments of Public Works, Watershed Management, Planning and Community Development, and Parks, Recreation, and Community Development, and the Office of General Services for Architectural and Engineering Services. The JV provides technical, professional, and other services for various City projects on an as-needed basis. Services include design of treatment facilities, conveyance systems, sewer systems, stormwater control, structures, customary sanitary, and civil, mechanical, electrical, architectural, and control instrumentation; structural engineering; easement and real estate acquisition services; contract administration, prequalification and bidding; and construction observation services.

##### **CCWS Construction Management Capital Improvement Program (CIP)**

Cobb County Water System (CCWS), Cobb County, GA

Principal-in-Charge since 1985, while ARCADIS worked as a direct part of CCWS to provide construction management, administration, and observation; survey, design, and CADD services; a variety of miscellaneous consulting and support functions; and utility locating services. All basic construction, survey, design, and CADD duties are performed by a staff located within the CCWS offices that acts as an integral department of CCWS' Engineering and Records Division.

##### **HCWSA Engineering Program**

Henry County Water and Sewerage Authority (HCWSA), Henry County, GA

Client Advocate for system-wide management, planning, engineering, and construction administration services. With ARCADIS' assistance, the Authority's service area has grown to include the entire county from its limited start. The Authority serves a population in excess of 100,000 and continues to meet the needs of one of the country's fastest growing counties. ARCADIS has developed and managed more than 70 projects at a net under-run from original bid contract amount.

##### **Standby Engineering Services**

Fulton County Department of Public Works, Fulton County, GA

Principal-in-Charge for a 3-year contract to provide standby engineering services for Fulton County Department of Public Works. A total of 22 projects have been completed or remain ongoing under this contract. Services provided to date include design of several culvert extensions, MS-4 permit assistance, hydrologic/hydraulic review and analysis, water quality assessments, and design of complete drainage system replacements.



#### Education

BS, Civil Engineering, Texas  
A&M University, 1996  
MBA, Texas Christian  
University, 2001

#### Years of Experience

Total – 16  
With ARCADIS – 5

#### Professional Registrations

Professional Engineer In  
Texas, 2001, #87898  
Arkansas, 2001, #10810  
Mississippi, 2002, #15508  
Georgia, 2008, #33355

#### Professional Qualifications

American Water Works  
Association  
Georgia Association of Water  
Professionals  
GAWP Reuse Committee  
American Society of Civil  
Engineers

#### ARCADIS Qualifications

Certified Project Manager, 2008  
Technical Knowledge and  
Innovation Water Core  
Group, 2009  
Senior Leadership Council,  
2010

## J. Carleton Sherrer, PE

### Project Manager/Principal Water Resources Engineer

Mr. Sherrer has more than 15 years of experience in engineering studies, permitting, design, construction, and project management for water resources projects. These include large-diameter pipelines; raw, treated, and wastewater pump stations; ground storage tanks, and dams. To date, he has been the project manager/engineer-of-record for more than 990 mgd of pump station capacity, 465,000 linear feet of pipelines, and 15 million gallons (mg) of ground storage reservoirs with combined construction costs approaching \$300 million. He has recent experience in construction management for plant expansions totaling more than \$28 million. Mr. Sherrer also has experience in solid waste management projects, including permitting, design, and construction, with more than 2.6 million square feet of designed and constructed U.S. Environmental Protection Agency (USEPA) Subtitle D liner.

#### Solid Waste Management

##### **Pinecrest Landfill, USEPA Subtitle D Upgrade**

McClain County, Oklahoma

Design engineer for permitting of an existing facility to comply with USEPA Subtitle D regulations. Key design components included a composite liner system for future cells, a leachate collection system sized using leachate generation rates predicted by the Hydrologic Evaluation of Landfill Performance model, final cover design, and stormwater management facilities.

##### **Iowa Park Landfill, Major Permit Amendment**

Iowa Park, Texas

Design engineer for permitting of an existing facility to comply with USEPA Subtitle D regulations as part of a major site expansion. Led the stormwater and leachate collection system design efforts for a facility with waste depths up to 100 feet.

##### **Long Point Landfill, New Permit Application**

Fort Bend County, Texas

Project manager/design engineer for permitting of a new USEPA Subtitle D Regional Disposal Facility serving a multicounty area in south Texas. Project included establishing optimal facility footprint to maximize waste volume, soil balance for liner, daily cover and final cap construction, and site drainage, entrance facility, leachate collection, and landfill gas system design.



**J. Carleton  
Sherrer, PE**  
Project  
Manager/Principal  
Water Resources  
Engineer

**Royal Oaks Landfill, Alternate Liner Design**

Jacksonville, Texas

Design engineer for permitting of an alternate liner design for expansion of an existing USEPA Subtitle D facility. Alternate liner system included a composite liner system with recycled tire chips for the leachate collection system drainage media.

**Ellis County Landfill, Cells 2B and 3A Construction**

Ellis County, Texas

Design engineer for construction of 345,000 square feet of composite liner. Design included modifications to the existing site drainage plan because a portion of the new liner was to be constructed in an area used for stormwater detention.

**City of Arlington Landfill, Sector 2 Construction**

Arlington, Texas

Design engineer for construction of 1,215,000 square feet of composite liner, including connection with a pre-USEPA Subtitle D liner system. Improvements also included a 2,400-foot leachate force main with submersible pumps installed in leachate collection system risers.

**City of Pampa Landfill, Initial Cell Construction**

Pampa, Texas

Design engineer for construction of the initial 219,000 square feet of composite liner out of a total lined area of 4.2 million square feet. Initial cell construction required management of more than 600,000 cubic yards of spoil produced as a result of the excavation, 550 linear feet of leachate collection system force main, and 1,500 feet of site access roads.

**Dripping Springs Landfill, Landfill Gas Migration Evaluation and Control**

Grayson County, Texas

Developed and implemented a soil gas survey plan to determine the extent of landfill gas migration at the site. Landfill gas concentrations were mapped on a 50-foot grid. Phase 2 of the project included the design of an active collection and control system, incorporating existing passive vents with a new collection system and flare.



**J. Carleton  
Sherrer, PE**  
Project  
Manager/Principal  
Water Resources  
Engineer

**Tajiguas Landfill, Landfill Gas Collection and Control System**

Santa Barbara County, California

Design engineer for an active landfill gas collection and control system that included more than 70 extraction wells on 250-foot centers, condensate storage and handling facilities, and an enclosed flare. Project was designed to obtain federal tax credits for the use of landfill gas to generate electrical power.

City of Atlanta

**Hemphill Finished Water Pumping Station**

City of Atlanta, Georgia

*Anticipated Completion 2011, \$18,900,000*

Project manager for rehabilitation of the existing 200 mgd Hemphill Finished Water Pump Station and 210 mgd Reservoir Pump Station, consisting of eight 25 mgd and three 70 mgd vertical turbine pumps, respectively, each equipped with variable frequency drives. The project also includes refurbishment of the pump control valves and accumulator system, replacement of actuators on 84- and 96-inch isolation valves, leak detection for the 72-inch discharge pipe, building modifications and coordination with construction of the plant's power system improvements and SCADA system modifications.

**Southwest Water Transmission Mains**

City of Atlanta, Georgia

*Design Complete 2008, \$72,000,000*

Technical Advisor and Quality Control Manager for 61,500-linear-feet of 30- and 54-inch water transmission main through urban areas in southwest Atlanta, providing technical direction and representation for the City at neighborhood planning meetings. Because of the urban environment, close coordination with other utilities was required, including existing water, sewer, gas and telephone lines and utility poles carrying overhead distribution power. Conflicts were avoided, where possible, or coordination of utility relocations was undertaken to allow a corridor for the new mains. Coordination of permits with permitting with the Georgia Department of Transportation (GDOT) and railroads. Once complete, the new mains will improve system pressures, fire protection and reliability of service by forming a looped network of mains in the area.



#### Education

BS, Biological Engineering,  
University of Georgia, 2003

#### Years of Experience

Total - 10  
With ARCADIS – 5

#### Professional Registrations

Professional Engineer, Georgia,  
2008

#### Professional Qualifications

American Water Works  
Association  
Georgia Association of Water  
Professionals

#### Professional Certifications

Level II Certified Design  
Professional, Georgia Soil  
and Water Conservation  
Commission

## Vincent T. (Tom) Zarzaca, Jr., PE

### Water Resources Engineer

Mr. Zarzaca offers 10 years of experience in the design of wastewater water treatment and conveyance systems, design of water distribution systems, water system hydraulic modeling, preparation of construction plans and specifications, and bidding phase activities. He has been involved in the concept development, permit acquisition, design and construction management of a wastewater plants, wastewater lift stations, gravity sewers, manhole rehabilitation, water distribution system projects and earthwork projects.

His field work has included lift station draw-down tests, survey work, data collection, wastewater plant start-up activities, construction inspection and problem resolution, construction and installation of remote sensing equipment, water quality sampling, and fire flow tests.

### Water Resources

#### Wastewater Plant Expansion

City of Fayetteville, Fayetteville, GA

Held responsibility in all phases of 5.0 million gallons per day (mgd), \$12 million wastewater treatment plant expansion, including concept development, permit acquisition, detailed design, and construction management. The project included the following tasks:

- Hydraulic profiles (numerical and CAD representations) for sizing process piping, open channel conveyances, and treatment processes
- Pump station/force main hydraulic design and equipment specification for Influent pump station, return and waste sludge pump station, sludge transfer and dewatering pump station, and reuse water pump station
- Plant drain hydraulic design, including horizontal plans and vertical profiles
- Influent equalization pond sizing, grading layout, and process piping layout
- Chlorination and dechlorination systems sizing and equipment specification
- Construction plans, including piping and structure demolition plans; site layout plans and details; process piping plans, profiles, and details; grading and erosion control plans and

**Vincent T.  
(Tom) Zarzaca,  
Jr., PE**  
Water Resources  
Engineer

details; and mechanical plans and details

- On-site construction observation and problem resolution including inspections, equipment start-ups, stakeholder coordination and correspondence, and project administration

#### **Wastewater Lift Stations and Sanitary Sewers**

City of Fairburn, Fairburn, GA

Site layout/grading requirements, pump station/force main hydraulic design and equipment specification, and gravity system hydraulic design and layout.

#### **Water System Inventory and Hydraulic Modeling**

City of Fairburn, Fairburn, GA

Extensive municipal water system inventory used to construct and functionalize a phased, city-wide water system hydraulic model.

#### **Water System Design**

City of Fairburn, Fairburn, GA

Site layout/grading requirements, and distribution system sizing and equipment specification based on modeling results.

#### **Water System Hydraulic Modeling and Design**

3-D Communities, Hamilton, GA

Steady state and extended period hydraulic models used to design and specify distribution system layout, booster pump stations, and elevated storage tank.

#### **Water and Sewer System Design**

Georgia Department of Transportation, GA

Water distribution and sanitary sewer design for DOT welcome center including systems layout, hydraulic design, and technical specifications.

#### **Wastewater Plant Expansion Site Services**

Henry County Water and Sewerage Authority, Henry County, GA

Responsible for on-site construction inspections, and coordination and problem solving during equipment start-up and plant commissioning periods.

#### **Wastewater Plant Expansion Construction Administration**

Henry County Water and Sewerage Authority, Henry County, GA

Responsible for daily coordination and communication during construction phase of treatment plant and land application system. Performed on-site inspections and coordination during start-up and commissioning.

#### **Engineering Report Writing**

**Vincent T.  
(Tom) Zarzaca,  
Jr., PE**  
Water Resources  
Engineer

City of Fayetteville, City of Fairburn, Henry County Water and Sewerage Authority, GA  
Wastewater plant operation and maintenance (O&M) manuals, water system hydraulic models; lift station designs; options and cost analyses; risk management plans; Phase 2 Disinfection Byproducts Rule program preparation and field data collection and processing, and stormwater pollution prevention plans.

**Engineering Design and Construction Management**

Paulding County, GA

Site design, system layout, and erosion and sediment control design for dam and spillway reconstruction project. Performed on-site inspections, resolved construction problems, provided coordination among project stakeholders, and processed pay requests and project documentation.

**Engineering Design and Construction Management**

Paulding County Industrial Building Authority, GA

Design work for a project that included a 750,000 gallon ground storage tank used for fire protection at Paulding Northwest Atlanta Regional Airport. Performed on-site inspections, resolved construction problems, provided coordination among project stakeholders, and processed pay requests and project documentation.

**Construction Management**

Paulding County, GA

Performed construction phase services for earthwork project involving reconstruction of recreation trail, including construction inspections, problem resolution, stakeholder coordination, and project documentation.

**Engineering Design**

CSX Intermodal Terminals, Fairburn, GA

Site and systems design for connection of existing facilities to local water and sewer services.



**J. Robin (Robbie) Blanton, P.E.**  
 Vice President  
 Senior Project Manager

#### **EDUCATION**

Bachelor of Civil Engineering,  
 Georgia Institute of  
 Technology, 1987

#### **PROFESSIONAL REGISTRATIONS**

**Professional Engineer:**  
 Georgia 19978  
 Alabama 20746  
 Florida 54219  
 Louisiana 32930  
 North Carolina 24327  
 South Carolina 25272  
 Texas 106594  
 Virginia 43247  
 Puerto Rico 23795

#### **CERTIFICATIONS**

Georgia Certified Landfill  
 Operator No. 683

GSWCC Level II Certified Design  
 Professional No. 45831

40-hour Hazwoper

#### **PROFESSIONAL AFFILIATIONS**

Solid Waste Association of North  
 America

#### **Professional Experience**

J. Robin (Robbie) Blanton is a graduate in civil engineering with more than 23 years of experience primarily in solid waste management, with prior experience in civil/site design, water and wastewater storage, and hydrology/hydraulics, for both public and private clients. His management and design responsibilities have included landfill design, landfill closure, grading design, hydrologic analyses and reports, storm drainage layout and sizing, sanitary sewer layout, force main and pumping design, reservoir and water storage tank design, and effluent pond design. In addition to design and quality control oversight, Mr. Blanton's responsibilities for projects include technical specifications, contractor prequalification documents, bidding, contract administration, Georgia Environmental Protection Division permitting, land disturbance and building permitting, public hearing technical support, bond issuance support, construction management, landfill construction certification, landfill operations support, and consulting. Mr. Blanton has managed landfill construction projects in excess of \$90 million. He has also provided training for landfill operations personnel as a part of State Continuing Education. In addition, Mr. Blanton has provided expert witness testimony and presented case studies at the Georgia Chapter of Solid Waste Association of North America technical sessions. Following is a list of key project experience.

#### **Solid Waste Management**

**LaGrange Sanitary Landfill, City of LaGrange, LaGrange, GA.** Performed feasibility analysis, system economics analysis, and preliminary design for gas-to-energy project. Landfill gas from the site was piped to an industrial facility for use in a boiler, creating energy savings and a "green" power source.

**LaGrange Sanitary Landfill, City of LaGrange, LaGrange, GA.** Managed design, permitting, and construction of gas collection and control system for unlined municipal solid waste (MSW) landfill using vertical wells. Design features included the use of horizontal gas collectors in Subtitle D cells to work in conjunction with leachate recirculation system.

**LaGrange Sanitary Landfill, City of LaGrange, LaGrange, GA.** Managed design and permitting for leachate recirculation system on 47-acre Subtitle D landfill to promote accelerated anaerobic bioreduction and increase landfill capacity.

**LaGrange Sanitary Landfill, City of LaGrange, LaGrange, GA.** Managed design and operational plans for vertical expansion of 47-acre Subtitle D landfill to increase landfill capacity by 1.8 million cubic yards, a 45-percent volume increase.

Robbie Blanton, P.E.  
Page 2

**LaGrange Sanitary Landfill, City of LaGrange, LaGrange, GA.** Prepared and permitted design and operational plans for 47-acre Subtitle D landfill. Design included bentonite-amended clay liner system and direct discharge of leachate to city sewer system. Prepared and permitted design and operational plans for a 10-acre construction/demolition landfill unit and construction plans for a 6.5-acre Subtitle D lined Cell 1, 7.4 acre Cell 2, Cell 3, and Cell 4. Completed Engineer's Feasibility Report for \$8 million bond issued to finance Subtitle D landfill. Prepared updated closure plan and managed construction cap for 40-acre unlined MSW landfill. Included negotiations with Georgia EPD to allow capping of overfilled areas to minimize mass waste excavation. Completed permit application that allowed landfill to obtain industrial wastewater discharge permit. Designed and managed construction of 4,000-foot leachate force main to tie into city sewer system. Provided leachate sampling and analysis plan to assist the city in meeting the requirements of wastewater discharge permit and solid waste permit. Performed Tier 2 sampling and analysis to determine site-specific methane generation data to postpone installation of gas collection and control system. Completed Title V permit application and New Source Performance Standards (NSPS) Initial Notification Form. Prepared and implemented Storm Water Pollution Prevention Plan (SWPPP). Provided annual comprehensive site evaluation and annual reports required by SWPPP. Implemented first phase of geosynthetic reinforced wall for vertical expansion to extend capacity and life of landfill by 50 percent.

**Seminole Road Landfill, DeKalb County, GA.** Prepared construction plans, contract documents, and technical specifications for 38-acre "piggyback" Subtitle D cell, most of which is on top of existing Phase 1 unlined area. Design included special overlift liner for portion of cell on top of Phase 1 fill. Certifying Engineer and Construction Manager for \$7 million, 20-acre Unit 1 and \$4 million, 14-acre Unit 2 of a "piggyback" Subtitle D cell. Prepared construction plans, contract documents, and technical specifications and performed construction administration for \$6.6 million, 17-acre Subtitle D cell. Design included an alternative liner system and leachate holding tank. Prepared construction plans for 30-acre gas collection and control system, including flare station and condensate disposal system. Certifying Engineer and Construction Manager responsible for directing plans and technical specifications for construction of 24-acre Subtitle D Phase 1 Closure. Directed master plan preparation of site suitability demonstration, and design and operational plans for upgrade of the Phase 3 and 4 design to incorporate a 240-acre waste footprint with more than 50 years of disposal capacity. Coordinated all permitting activities for Phase 3 and 4 upgrade including DeKalb Soil & Water Conservation E&SC Plan approval, EPD stream buffer variance, EPD water quality certification, Corps of Engineers Individual 404 Permit, and EPD major modification. Directed preparation of construction plans, contract documents, and technical specifications for 39-acre Phase 3, Unit 1 construction. Phase 3, Unit 1 included ½-mile-long geogrid reinforced slope, underdrain system, groundwater gradient control system, and double-composite alternative liner system. Provided construction management and construction certification for Phase 3, Unit 1 construction, an 18-month, \$27 million project. Provided site design and coordination for Landfill Gas-to-Energy (LFGTE) project, a system which generates 3.2 MW of "green" power to Georgia Power. Provided

Robbie Blanton, P.E.  
Page 3

construction management and certification for 50-acre Subtitle D Final Closure of Phase 2A.

**Waste Management-Bolton Road Landfill, Atlanta, GA.** Certifying Engineer for approximately 32-acre Subtitle D final closure, consisting of 12-inch intermediate cover, 12" compacted fill layer, Agru America Super Gripnet liner, 8 oz/sy non-woven geocomposite, 12-inch protective soil layer and 6 inches of topsoil. Design also included features to mitigate steep slopes.

**Republic Services-Hickory Ridge Landfill, Conley, GA.** Project management and Certifying Engineer services for Solar Energy Cover (SEC) closure system. Approximately 46 acres of Subtitle D closure using 60-mil scrim-reinforced thermoplastic polyolefin (TPO) liner, with a portion of south facing slopes utilizing solar panels integrated into TPO.

**Republic Services-Prattville C&D Landfill, Prattville, AL.** Project manager and Certifying Engineer for 4-acre Cell 1 NW construction.

**DeKalb County Sanitation North Lot, DeKalb County, Chamblee, GA.** Prepared concept plan for future expansion of facility adjacent to DeKalb-Peachtree Airport. Designed to bring facility into compliance with FAA regulations.

**DeKalb County Central Transfer Station, DeKalb County, Decatur, GA.** Prepared concept plan for 36,000-square-foot top-loading transfer station and site plan, including two-story office building with interior tour area and observation deck.

**DeKalb County Sanitation Solid Waste Management Plan, DeKalb County, Decatur, GA.** Assisted senior county staff with preparation of solid waste management plan in accordance with Atlanta Regional Commission and Department of Community Affairs requirements for the State of Georgia's largest public sanitation operation.

**B.J. Landfill and Recycling Center, Confidential Client, Norcross, GA.** Prepared drawings and operational plan for obtaining a major modification to solid waste permit to construct and operate a 700-TPD materials recovery facility (MRF). Prepared documentation and presentation materials for a mandatory Gwinnett County public hearing. Prepared site design for construction of the MRF. Prepared closure plan for 20 acres of lined and unlined MSW landfill. Closure plan included negotiations with Georgia EPD to limit amount of area requiring synthetic cap, saving the owner more than \$500,000.

**Live Oak Landfill and Recycling Center, Confidential Client, DeKalb County, GA.** Prepared design, drawings, and documentation planned for construction and operation of a 4,000-TPD transfer station. Performed design and contract administration for domestic waste force main and pump station facilities for office building and maintenance shop. Responsible for designing leachate collection and force main system for two Subtitle D landfill cells. Performed design and contract administration for new scale installation, pneumatic tube system, and associated site

Robbie Blanton, P.E.  
Page 4

improvements. Completed construction plans for site grading, utilities, and storm drainage improvements to build a transfer station and future materials recovery facility. Designed vertical expansion of 130-acre facility utilizing geosynthetic reinforced steepened slopes to extend capacity of landfill by more than 30 percent.

**Inland Rome Landfill, Inland Paperboard and Packaging, Inc., Rome, GA.** Prepared Subtitle D closure plan for 23-acre industrial waste landfill. Prepared closure plan for 27-acre ash pond. Provided consulting services for operation of unlined, 23-acre industrial waste landfill.

**Talladega Landfill, Waste Away, Sylacauga, AL.** Prepared conceptual cell layout, cell bottoms, final grades, air space volume calculations, and cost estimates for a 120-acre and a 400-acre expansion.

**Baldwin County Landfill, Baldwin County, GA.** Construction manager and certifying engineer for 6.5-acre Subtitle D lined cell.

**LaGrange Recycling Center, City of LaGrange, LaGrange, GA.** Prepared construction plans and technical specifications for expansion to existing recycling center to accommodate processing and capacity improvements.

**Greenville City Landfill, City of Greenville, Greenville, SC.** Prepared prequalification documents, construction plans, and technical specifications, and managed construction of 32-acre Subtitle D landfill closure. Design and construction performed in a manner necessary to maintain stability of steep slopes adjacent to the environmentally sensitive Reedy River.

**High Ridge Construction and Demolition Landfill, Cherokee County, GA.** Provided oversight and quality control for siting, design, and permitting for 30-acre construction and demolition landfill. Prepared and presented documents at required public hearing.

**Hickory Ridge Landfill, BFI Waste Systems, DeKalb County, GA.** Construction manager and certifying engineer for Phase 2 gas system expansion.

**East DeKalb C&D Landfill, BFI Waste Systems, Lithonia, GA.** Construction Manager and Certifying Engineer for Phase 4 cell construction.

**Taylor County Landfill, Allied Waste, Mauk, GA.** Certifying Engineer for 15-acre Subtitle D geomembrane closure. Construction Manager and Certifying Engineer for 7-acre Subtitle D Cell 13. Certifying Engineer for 2007 gas system expansion.

**Timberlands Landfill, Allied Waste, Brewton, AL.** Construction Manager and Certifying Engineer for 9-acre Subtitle D Cell 7 and 11-acre Subtitle D Cell 9. Prepared Fill Sequence Plans for Cells 7-10A.

**Ponce Landfill, Ponce, Puerto Rico.** Certifying Engineer for 7.5-acre Subtitle D cell (Development Area 5).

Robbie Blanton, P.E.  
Page 5

**Hazardous Waste Management**

**Escambia Wood Treating Corporation, Escambia County, FL.** Responsible for senior oversight of liner installation and construction quality assurance for a Superfund containment cell for creosote-containing wastes.

**Water and Wastewater Storage**

**Electric Utility Company, Georgia Power, Forest Park, GA.** Responsible for the design of a piping system and three lined ponds to be used for containment and detention as part of a spill prevention system for a 60-acre facility.

**Springdale Road WWTP, Henry County Water and Sewerage Authority, Henry County, GA.** Performed civil/site design of plant. Design included roadway layout, grading design for a 460,000-gallon holding pond, channel relocation, and floodplain compensation area.

**Springdale Road WWTP, Henry County Water and Sewerage Authority, Henry County, GA.** Designed synthetic liner system for 4.5-acre spray irrigation holding pond.

**Buford WTP, City of Buford, Buford, GA.** Performed civil/site design for plant improvements including grading design for two 10,000-square-foot sludge ponds.

**Cornelia Water Tank, City of Cornelia, Cornelia, GA.** Prepared construction plan and technical specifications for 1.5-MG steel water tank.

**Solid Waste Training**

**Solid Waste Training for Inland Rome Landfill, Inland Paperboard and Packaging, Inc., Rome, GA.** Provided training for landfill personnel in the operation and maintenance of the facility.

**Continuing Education Class for Landfill Closure/Post-Closure, University of Georgia, Athens, GA.** Co-taught short course for state-certified landfill operators on closure/post-closure landfill operations.

**Continuing Education Class for Landfill Leachate Management, University of Georgia, Athens, GA.** Co-taught short course to state-certified landfill operators on leachate management in landfill operations.

Robbie Blanton, P.E.  
Page 6

Civil/Site

**Apartment Complexes, State of Georgia, DeKalb and Statesboro Counties, GA.** Responsible for design and plan production for land development of apartment complexes.

**Land Development, Private Developers, Various Locations, GA.** Design, plan production, and permitting for 1- to 20-acre commercial/industrial developments, usually consisting of one building and associated parking and detention facilities. Mass grading and infrastructure design for land development of the following:

82-acre office/distribution facility, Gwinnett County, GA

80-acre mixed-use development, Cobb County, GA

15-acre subdivision, Douglas County, GA

**Encroachments, Georgia DOT, Various Locations, GA.** Land development permits for entrances onto state routes, utility encroachment into state right-of-way, and special encroachments into state right-of-way.

**Cloudland Canyon State Park, Georgia Department of Natural Resources, Cloudland Canyon, GA.** Grading, roadway, and storm drainage design for day-use recreation area.

Hydrology/Hydraulics

**Farley Branch Channel, City of East Point, East Point, GA.** Responsible for floodplain analysis of the 2-mile channel. Analysis included use of the HEC-2 and HY-8 computer programs. Recommendations were made to the client for possible locations of regional detention facility.

**Desert Drive Bridge, City of East Point, East Point, GA.** Performed FEMA floodway analysis of bridge over Camp Creek, which included use of the HEC-2 computer program. Provided no-rise certification to the city.

**Pine Crossing Apartments, Freddie Mac, College Park, GA.** Performed FEMA floodway analysis and culvert sizing for a triple 10-foot by 10-foot culvert crossing on Camp Creek. Provided no-rise certification to the city of College Park.

**TownPark, Taylor & Mathis, Cobb County, GA.** Responsible for designing floodplain volume compensation/detention areas, which included use of the HEC-1 and HEC-2 computer programs for hydrograph generation and routing for TownPark mixed-use development.

Robbie Blanton, P.E.  
Page 7

**Burke County Public Fishing Lake, Georgia Department of Natural Resources, Burke County, GA.** Performed hydrology/hydraulics calculations for designing the 38-foot-high dam and the 100-acre fishing lake. Design met criteria set forth for a Georgia Category I dam. Design also included using HEC-1, HEC-2, and HEC-3 computer programs and various SCS Technical Report design publications.

*Expert Testimony*

**JAE Inert Landfill, Elliott vs. Forsyth County, GA.** Expert witness for plaintiff in rezoning denial case.



**Paul C. Augood, Ph.D.**  
Landfill Gas Specialist

#### **EDUCATION**

Ph.D., Applied Energy, UK,  
1997

M.S., Energy and the  
Environment, UK, 1991

B.S., Physics, University of  
Southampton, UK, 1990

#### **CERTIFICATIONS**

40-Hour HAZWOPER Training

Ferguson Waterworks Certified  
'HDPE Fusion Proficiency'

Fusion Provida Certified 'Fully  
Automated Butt Fusion' (UK)

Waste Management Certified  
'LFG Collection and Control  
System Operator Training'

#### **PROFESSIONAL AFFILIATIONS**

Solid Waste Association of North  
America – Landfill Gas  
Technical Committee

#### **Professional Experience**

Dr. Paul Augood has over ten years of experience in the fields of landfill gas management, landfill gas to energy (LFGTE), waste to energy, and thermal systems. He has worked on several projects involving design, construction, construction quality assurance, monitoring, and operation and maintenance of landfill gas collection and control system (GCCS) and LFGTE projects. He is a recognized expert in conducting methane migration investigations and in evaluating the efficiency and performance of GCCS and LFGTE facilities. Dr. Augood conducted research at the Department of Applied Energy at Cranfield University in Bedford UK for five years in the general fields of waste-to-energy and thermal systems. He has two patents for methodologies he developed for combustion, gasification, and pyrolysis of waste material using specialized fluidized beds that do not require air for fluidization. Recently, he moderated a session on landfill gas management in the Annual Georgia SWANA Conference and is also serving as an invited expert reviewer for SWANA's GCCS Construction Technical Specifications. Dr. Augood was the recipient of the Institute of Electrical Engineers (IEE), UK, John Hopkinson Premium Award in 2000.

#### **Landfill Gas Management**

##### **OPERATIONS AND MAINTENANCE (O&M) OF GCCS**

**Seminole Road Landfill, DeKalb County, GA.** Responsible for undertaking many onsite O&M activities including flare/blower maintenance, gas analyzer calibration and repair, knockout pot (KOP) maintenance and repair, well pumping, quarterly and supplemental perimeter methane monitoring, monthly GCCS, and Perimeter Gas Control System monitoring and adjustments. Provided on-call services for GCCS flare/blower shutdown response.

**Taylor County Landfill, Taylor County, GA.** Responsible for oversight of LFGTE operator. Performed review and analysis of NSPS monitoring data and well dewatering. Investigated gas migration at landfill boundary using thermocouple analysis in methane probes to determine methane migration pathways. Provided installation coordination and oversight for new 4,500 scfm flare skid. Provided monthly methane monitoring.

**LaGrange Sanitary Landfill, LaGrange, GA.** Responsible for monthly O&M of non-NSPS GCCS; performed troubleshooting and coordinated repairs for LFGTE facility. Installed GCCS connections to leachate cleanouts to maximize available gas to LFGTE project.

Paul C. Augood, Ph.D.  
Page 2

***GCCS CONSTRUCTION MANAGEMENT AND CONSTRUCTION  
QUALITY ASSURANCE***

**Seminole Road Landfill, DeKalb County, GA.** Managed the design/build construction of 30 vertical gas extraction wells, lateral and header collection pipes, condensate sump, and automatic well dewatering system at Seminole Road Landfill in DeKalb County, Georgia. Specific tasks included design of gas extraction wells, collection pipes, sump, pumps, forcemains, airlines, and compressor; overall project and construction management; and preparation of as-built drawing and report. The project was performed in a very short time period to increase gas production for the new LFGTE facility.

**West Camden Landfill, TN.** Provided specialized consulting services to the CQA team for the GCCS expansion project.

**Pine Bluff Landfill, Cherokee County, GA.** Designed and installed impact wells to assist the landfill owner in meeting a compliance deadline.

**Ponce Landfill, Ponce, PR.** Provided CQA Project Management for installation of first phase of GCCS. Provided startup coordination for enclosed flare which had been previously purchased and had been sitting dormant on the site for over 3 years. Installed Fleetzoom remote monitoring equipment into flare facility.

***INVESTIGATION AND ANALYSIS OF GAS COLLECTION  
AND CONTROL SYSTEM (GCCS) PERFORMANCE***

**Savannah River Mill Landfill, Rincon, GA.** Performed a system evaluation of the GCCS which was installed between April and July 1993 on the northern half of Cell 1 (Cell 1N). The system was evaluated to determine (a) what operational options were available to maximize gas control with the existing system, and (b) what modifications could be made to improve gas collection.

**Yeoman Creek Landfill, IL.** Analyzed the performance of the partially constructed GCCS. Inspected flare station and gas field to enable verification of system performance.

**Seminole Road Landfill, DeKalb County, GA.** Investigated the blockage of gas extraction well screens in wells located in the waste and soil using water level measurements and down-hole camera investigations.

**Catoosa County Landfill, Catoosa County, GA.** Investigated the performance of the GCCS. As part of the investigation, gas quantity and quality monitoring, water level measurements, down-hole camera investigations, and well pumping and recovery analyses were conducted.

**Wiamanalo Gulch Sanitary Landfill, Kapolei, HI.** Performed Isotope Sampling of landfill gas. As part of an investigation into the landfill gas production mechanisms at the landfill, gas samples were taken for subsequent isotope

Paul C. Augood, Ph.D.  
Page 3

analysis. Also performed detailed monitoring and recorded logging of excavated waste during the drilling of a number of new gas wells.

**Bennet Bank Landfill Site, UK.** Audited GCCS systems installed at the site. Audit included flare station review, well performance checks, water level monitoring, and well field integrity checks in both restored and active tipping area.

**Stewartby Landfill Site, UK.** Conducted Audit under contract for Owner/Operators Shanks Waste Solutions (Formerly Shanks & McEwan). Audit of well field focused on odor issues relating from poor performance of the gas well field.

#### ***GAS MIGRATION INVESTIGATIONS AND CORRECTIVE ACTION PLANS***

**Seminole Road Landfill, DeKalb County, GA.** Investigated methane migration using a network of perimeter methane monitoring probes and barhole punches. Developed a corrective action plan that included installation of seven gas extraction wells at select locations, construction of a jumper line across a condensate sump, operation of two blowers to increase vacuum levels, and optimization of well tuning. The implementation of this corrective action plan brought the methane concentrations to near zero levels from levels that were as high as 50% (10 times LEL) and resulted in regulators granting permission to reduce the perimeter methane monitoring frequency from monthly to quarterly.

**Catoosa County Landfill, Catoosa County, GA.** Ongoing investigation and corrective action plan development and implementation for methane migration.

**Richland County Landfill, SC; Live Oak Landfill, DeKalb County, GA; Bolton Road Landfill, Atlanta, GA.** Developed and operated temperature probes with data loggers to assess behavior of migrating gas detected in perimeter monitoring wells.

#### ***COMPLIANCE MONITORING AND REPORTING***

**Seminole Road Landfill, DeKalb County, GA; Live Oak Landfill, DeKalb County, GA; Pine Bluff Landfill, Cherokee County, GA; R&B Landfill, Banks County, GA.** Responsible for monthly NSPS Gas Monitoring. Duties included gas field monitoring and tuning, flare station checks, compliance reporting, and database development.

**Elstow Landfill, New Trees Quarry, Heath and Reach Inert Landfill, Finmere Landfill, Roxwell Landfill, and Aubrey Landfill in the United Kingdom.** Conducted landfill perimeter methane monitoring. Duties included installation of perimeter probes and groundwater sampling.

**Seminole Road Landfill, DeKalb County, GA; Catoosa County Landfill, Catoosa County, GA; City of Calhoun Landfill, Calhoun, GA.** Conducted perimeter methane monitoring using permanent probes and barhole punches. Prepared methane monitoring reports.

Paul C. Augood, Ph.D.  
Page 4

**Seminole Road Landfill, DeKalb County, GA; Live Oak Landfill, DeKalb County, GA; Pine Bluff Landfill, Cherokee County, GA; R&B Landfill, Banks County, GA.** Performed NSPS surface emission monitoring testing and cover integrity checks.

**Landfill Gas to Energy**

***LANDFILL GAS TO ENERGY (LFGTE) PROJECTS  
DEVELOPMENT AND CONSTRUCTION MANAGEMENT***

**Brixworth Landfill, UK (0.6MWe).** Project Engineer responsible for overseeing the installation of the flare and generator set. Responsible for design and installation of GCCS extension.

**Tythegston Landfill, UK (1.2MWe).** Project Engineer responsible for the design and installation of the gas system extension, flare system modification and generator set.

**Roxwell Landfill, UK (1.0MWe).** Project Engineer responsible for analysis and repair of existing gas system, extension of the gas system, and installation of generator set.

**Aubrey Landfill, UK; Corby Landfill, UK; Cranford Landfill, UK; Betton Abbots Landfill, UK; Barnsley Lane Landfill, UK; Rumford Lanfill, UK; Whisby Landfill, UK; Kenwick Landfill, UK.** Performed monthly or weekly gas field monitoring on a number of sites targeted for LFGTE development.

**Seminole Road Landfill, DeKalb County, GA.** Responsible for construction oversight for the 3.2-MW Green Energy Facility. Duties included conducting weekly project meetings, preparing meeting minutes, inspecting construction, verifying contractor invoices, and ensuring that the county's compliance commitments were not compromised due to the energy project.

**Santee Cooper Power Company, SC.** Served on the project team that evaluated the future gas recovery potentials at ten landfills in South Carolina for LFGTE project development.

***LANDFILL GAS TO ENERGY (LFGTE) OPERATIONS  
AND MAINTENANCE (O&M)***

**Elstow Landfill, UK (1.8MWe); Sundon Landfill, UK (2.0MWe); Brixworth Landfill, UK (0.6MWe); Boston Landfill, UK (1.2MWe); Shelford Landfill, UK (4.5MWe); Roxwell Landfill, UK (1.0MWe); Tythegston Landfill, UK (1.2MWe).** Project Engineer responsible for weekly onsite flare system checks, review of generator set O&M, power import/export data collection, weekly gas field checks, and monthly balancing and monitoring of the gas field.

Paul C. Augood, Ph.D.  
Page 5

Enderby Warren, UK (4.5MWe); Trumps Farm, UK (2.7MWe); Ferry Road Landfill, UK (0.9MWe); Docks Way Landfill, UK (2.7MWe); Chapel Farm Landfill, UK (0.9MWe); Nanty Caws Landfill, UK (0.9MWe). Served as part of a team with shared responsibility for the weekly onsite flare system checks, review of generator set O&M, power import/export data collection, weekly gas balancing of the gas fields, and 24-hr callout.

### ***THERMAL ANALYSIS***

**Tower Colliery Mine Gas Generation Project, Wales.** Performed thermal analysis of operating gas collection system to determine the source of excess condensation present in gas train arriving at the generator gas regulators. The analysis indicated that the coalescing filters were not functioning at design capacity. Remedial action enabled filters to perform at design capacity.

**Sundon Landfill, England.** Thermal monitoring of acoustic housing of gas blowers revealed that elevated temperatures were present leading to premature motor winding insulation failure.

**Cranfield University, UK.** Undertook thermo-physical analysis of hydrated hydrophilic polymers to determine their application as thermal energy storage media. Investigated their thermo-rheological properties, as suspended particles in turbulent mixtures, to produce engineering data for their application thermal storage and transmission media. This work formed the basis of the Ph.D. thesis of Dr. Augood and a subsequent UK Patent application.

**Cranfield University, UK.** The thermal depolymerisation of scrap polymers was studied, resulting in the development of a new method of depolymerising scrap polymers. The technology was expanded to incorporate the thermal gasification of MSW and bio-fuels to produce a range of byproducts dependent on operational parameters and feed stock. This technology became incorporated into a UK patent application.

### **Publications**

- 01-1 Augood, P. C., Newborough, M. and Highgate, D. J. "Thermal Behaviour of Phase-Change Slurries Incorporating Hydrated Hydrophilic Polymeric Materials," *Experimental Thermal and Fluid Science*, Vol. 25, 2001, pp. 457-468.
- 99-1 Newborough, M, and Augood, P. "Demand-Side Management Opportunities for the UK Domestic Sector," *IEE Proc.-Gener. Transm. Distrib.*, Vol. 146, No. 3, May 1999.
- 97-1 Augood, P. "Low-Temperature Thermal-Energy Storage Systems Employing Hydrophilic Polymeric Materials." Ph.D. Thesis, Cranfield University, Bedford, UK, March 1997.

Paul C. Augood, Ph.D.  
Page 6

- 96-1 Okorafor, E.U., Newborough, M., Highgate, D. and Augood, P. "Thermal Behaviour of Water in Cross-Linked Hydro-Active Polymeric Structures: Water Crystallization," *Journal of Materials Science*, December 1996.
- 95-1 Highgate, D. and Augood, P. "Hydrophilic Materials as Energy Storage Systems and Capacity Thermal Fluids," 19th International Congress of Refrigeration, The Hague, 20 March 1995.
- 91-1 Augood, P. "An Energy Audit of the Aston Martin Lagonda Production Site." M.S. Thesis, Cranfield University, Bedford, UK, August 1991.

Patents

GB-A-1587725, Apparatus and Material for Thermal Storage (filed as GB9606872.1). 1 April 1996.

GB2362335, Vibratory Mobile Bed (filed as GB0011722.6).



**Adam J. Hayes, P.E.**  
Environmental Branch Manager and  
Technical Director of Strategic Business Development

#### EDUCATION

B.S., Civil Engineering, Clemson  
University

M.S., Geophysical Sciences,  
Georgia Institute of  
Technology

M.B.A., Kennesaw State  
University, Coles College  
of Business

#### PROFESSIONAL REGISTRATIONS

##### Professional Engineer:

Georgia PE025071  
Alabama 23258  
Arkansas 9949  
North Carolina 025089  
South Carolina 19950

#### PROFESSIONAL AFFILIATIONS

Georgia Brownfields Association

American Society of Civil  
Engineers

Chi Epsilon National Civil  
Engineering Honor Society

Beta Gamma Sigma  
International Business Honor  
Society

#### Professional Experience

Mr. Hayes combines outstanding communication abilities with detail-oriented problem-solving skills to provide exceptional service to our clients. His development of solutions for commercial, municipal, and industrial projects includes Brownfields redevelopment, innovative remediation technologies, alternative energy solutions, and provision for environmental sustainability. His background experience ranges from solid waste management and soil and groundwater contamination assessments to regulatory compliance audits. He is also familiar with State and Federal protocols for environmental investigations, including soil and groundwater sampling procedures, field monitoring techniques, and soil vapor assessments.

#### Selected Project Experience

**Ponce Park South-Atlanta Beltline, Atlanta, Georgia.** The subject property included approximately 4.5 acres located within the Historic Old 4<sup>th</sup> Ward adjacent to the Atlanta Beltline multi-use project which had been impacted with a variety of substances including petroleum products, chlorinated solvents, pesticides, and PCBs. A rapid site investigation plan was developed and implemented and meetings were held with GEPD representatives to develop an acceptable Brownfield Corrective Action Plan which incorporated prior and new site investigation information. The CAP was accepted and GEPD quickly issued prospective purchaser limitation of liability in order to satisfy the planned closing date.

**Former Industrial Manufacturing Facility, Savannah, Georgia.** The Georgia Environmental Protection Division listed this site on the Hazardous Site Inventory (HSI) due to releases that impacted soil and groundwater with petroleum hydrocarbons, volatile organic compounds, and heavy metals. An extensive site investigation was completed to identify the extent of impacted soil and groundwater. Site-specific risk-reduction standards were developed for the site, and approximately 45,000 tons of impacted soil were excavated and removed from the site.

**Resins Manufacturing Facility, South Carolina.** A transfer pipe failure resulted in a release of methanol at this active resins manufacturing facility. Soil and groundwater were impacted with methanol concentrations as high as 600,000 mg/L. Bench scale pilot testing of an enhanced natural attenuation remediation approach was completed, and indicated that large volumes of methane were being generated through the degradation of methanol in the subsurface. A temporary vapor recovery system was designed and installed to mitigate methane concentrations at the plant.

Adam J. Hayes, P.E.  
Page 2

**CDC Building 107, DeKalb County, Georgia.** Construction activities for this multi-story building and parking deck encountered incinerator ash which had been disposed on the property over 50 years ago. A rapid site investigation plan was developed and implemented to identify the extent of the ash materials and perform waste characterization determinations. The project required several mobilizations as new pockets of ash were discovered. The materials were fully delineated, characterized and removed from the site without causing any delays to the project.

**Emory University Hospital, Atlanta, Georgia.** Construction activities encountered two abandoned, unregistered underground storage tanks. A rapid site investigation plan was implemented and meetings were held with GEPD representatives to develop an acceptable in-place closure plan. The CAP was accepted and GEPD quickly issued "no further action" status so that construction activities could proceed without delay.

**Aeropuerto Internacional Juan Santamaria (AIJS), San Jose, Costa Rica.** A three-week investigation was performed to document existing contaminant levels in shallow soils, sediments, surface water, and groundwater at the AIJS airport. The investigation included the collection of 225 samples around the general airport area, fuel facilities, the hanger area, a maintenance building, and a former landfill. Laboratory analyses were performed to evaluate the concentrations of total petroleum hydrocarbons, volatile organic compounds, semi-volatile organics, organochlorine pesticides, organophosphorus pesticides, polychlorinated biphenyls, herbicides, and metals. Preliminary remediation alternations, including site and institutional controls, excavation and disposal, phytoremediation, stabilization, bioventing, soil vapor extraction, chemical fixation, and enhanced bioremediation, were developed for the facility.

**Former Paint Manufacturing Facility, Brunswick, Georgia.** This site was listed on the GEPD Hazardous Sites Inventory (HSI) due to releases from a former paint pit that impacted soil and groundwater with VOCs and metals. An initial site investigation and subsequent detailed study of the limits of the former paint pit were completed. Preliminary, proactive remediation goals were established and limited excavation and removal was completed.

**Vadose Zone Soil Gas Assessment – Southeast Retail Service Station Facilities.** Vadose zone soil vapor and geotechnical data, along with site-specific facility information, was compiled into an Oracle database. The database included field data and collection method information from 48 retail gasoline service station facilities located across 7 states. Qualitative and quantitative analysis of hydrocarbon and oxygen behavior profiles was performed for each site. The empirical results were compared to the generalized soil gas profile behavior predictions of the Johnson-Ettinger risk-based corrective action soil gas computer model and presented at the University of Massachusetts at Amherst.

Adam J. Hayes, P.E.  
Page 3

**Georgia DOT Right of Way Acquisition – Darien, Georgia.** Performed a Phase II Environmental Assessment and contamination delineation evaluation for a right of way widening project at Highway 251 in Darien, McIntosh County, Georgia. The investigation included evaluation of potential impacts to soil and groundwater due to past and present activities at a nearby gasoline station. The testing plan included field screening with a photoionization detector (PID) as well as laboratory testing to evaluate concentrations of polynuclear aromatic hydrocarbons (PAH) and benzene, toluene, ethylbenzene and xylenes (BTEX).

**Private School Site, North Georgia Location.** A formerly unpermitted landfill was encountered as the result of development activities for this facility. Remediation activities were performed to remove all waste and unsuitable materials from the site. Confirmation soil, groundwater, and surface water sampling and testing were performed to evaluate the potential impacts from the landfill. Extensive soil vapor sampling was also performed to evaluate potential landfill gas impacts to the proposed structures.

**Methane Gas-to-Energy Feasibility Study, Walker County, Georgia.** Quarterly methane monitoring at this closed landfill indicated the significant production of methane gas. A feasibility study, which included an estimate of waste volumes, gas production potential, and an assessment of regulatory requirements applicable to the facility, was performed. Gas production estimates were developed using basic screening methods and the LandGEM and E-Plus first order decay models. Project cost estimates and financing options were evaluated for various alternatives that included electricity generation for sale to utility, electricity generation for on-site use, and the use of landfill gas as fuel for a proposed animal shelter crematory.

**Industrial Landfill Evaluation, South Georgia Facility.** Routine detection monitoring indicated elevated concentrations of arsenic in groundwater downgradient from this facility. A source demonstration report was performed and identified the placement of boiler ash as the source of the arsenic. The extent of impacted groundwater was delineated and an assessment of corrective measures (ACM) report was prepared in accordance with GEPD Solid Waste Management rules. The ACM included an evaluation of the potential corrective measures and the technical justification for corrective action via monitored natural attenuation.

**Georgia DOT Right of Way Acquisitions – Friendship Road Parcels 12A, 22, and 22A.** Performed Phase I and Phase II Environmental Assessments for three parcels that were part of a right of way widening project at Friendship Road in Buford, Hall County, Georgia. The investigations included evaluation of potential impacts to soil and groundwater due to past and present activities at nearby gasoline stations and commercial and automotive facilities.

**Bellsouth Mobility Tower Sites, Various Georgia Sites.** Phase I and Phase II Environmental Site Assessments were completed at over 100 potential cellular tower sites. The assessments were completed at a variety of sites including commercial, industrial, municipal and rural properties. The work was completed in accordance with ASTM E-1529 and BellSouth Mobility guidelines.

Adam J. Hayes, P.E.  
Page 4

**Chevron Retail Facilities, Various Georgia Locations.** Program management services were provided for approximately 75 retail service station facilities in Georgia. Activities included development of corrective action plans, negotiations with regulators, and completion of monitoring reports. Services also included design, installation, and management of active remediation systems at various locations. Remediation technologies included soil vapor extraction, dual-phase remediation, air sparging, bioventing, and enhanced aerobic bioremediation.

**Lockheed Martin Aeronautical Systems, Marietta, Georgia.** An industrial waste discharge line failure was discovered during construction of a new waste pipeline. The release resulted in soil and groundwater contamination with hexavalent chromium. Background concentrations were established and subsurface investigations were completed to delineate the extent of impacted soils.

**Lockheed Martin Aeronautics Company, Marietta, Georgia.** Storm water regulation changes required the preparation of an updated storm water pollution prevention plan (SWPPP) for this 900-acre facility. The SWPPP included the evaluation of numerous structures, storage yards, and manufacturing processes, and required the development of appropriate best management practices (BMPs). This SWPPP included development of a Geographic Information System (GIS) database and storm drain stenciling of 888 storm water inlet structures across the property.

**Black Liquor Sludge Stabilization and Waste Characterization.** Closure of a failed black liquor pond required disposal of approximately 4,300 yd<sup>3</sup> of sludge. A stabilization plan was developed using a combination of fly ash and Portland cement. A comprehensive waste characterization evaluation, including field and bench scale testing, was performed to evaluate the potential impacts to the industrial landfill accepting the waste. This successful characterization and assessment resulted in savings to the client of approximately \$3 million.

**Pipeline Release Site, Barrow County, Georgia.** A petroleum release from an active pipeline resulted in soil and groundwater contamination over a large area and impacted a nearby stream with concentrations greater than in-stream standards. An aggressive remediation system was designed and installed by others, but was not controlling the stream impacts. At the request of the client, the system design and installation were reviewed, and modification recommendations were developed and implemented. The resulting system improvements successfully reduced in-stream standards below allowable thresholds.

**Free Product Remediation System Design & Implementation, Marietta, Georgia.** A potentially abandoned underground storage tank (UST) was identified at this Marietta office building as the result of a commercial property transaction. The UST and impacted soil were removed after being located with ground penetrating radar. A free product recovery system with pneumatic in-well separator pumps was designed and installed at the facility. The system has successfully reduced free product thickness from over 2 feet to less than 1 inch.

Adam J. Hayes, P.E.  
Page 5

**Storm Water Pollution Prevention Plans (SWPPP) and Spill Prevention, Control, and Countermeasure Plans (SPCC), Cherokee and Paulding Counties, Georgia.** Odor complaints at solid waste transfer stations resulted in notices of violation from GEPD officials. A SWPPP was developed for each facility to address regulatory concerns and to comply with the industrial storm water regulations. One of the facilities required the development of a SPCC, including site security, personnel training, secondary containment structures, operations modifications, and spill response activities, to prevent discharge of oil into or upon State navigable waters.

**Industrial Landfill Semi-Annual Detection Monitoring, Warrenton, Georgia.** An automotive parts manufacturing facility operated an on-site industrial waste landfill for disposal of foundry sand and other waste materials. Semi-annual groundwater detection monitoring was performed using low-flow/low-stress (LF/LS) sampling techniques. Groundwater analytical data was statistically evaluated in accordance with GEPD regulations using EPA-approved methods.

**Construction & Demolition (C&D) Landfill Design & Operations Plan Development.** A change in solid waste management objectives initiated the need for modification of a partially-constructed municipal solid waste landfill (MSWL) to a C&D landfill. This major modification required close interaction with GEPD, as well as the development of a site-specific collapse detection and prevention system, to address concerns regarding karst geology.

**Commercial Storage Facility, Marietta, Georgia.** Site redevelopment activities at this facility led to the discovery of significant soil and groundwater impacts associated with a nearby dry cleaning facility. A HSRA release notification report was prepared and a site remediation plan was developed. The remediation plan included utilization of complex shoring equipment to prevent damage to structures on the adjoining property. Horizontal and vertical confirmation sampling was performed to demonstrate compliance with Georgia EPD Brownfield program requirements.

**Office Building Development, Marietta, Georgia.** Due diligence investigation activities for a new office development identified petroleum and heavy metals contamination due to activities at a nearby automobile service facility. A prospective purchaser corrective action plan was prepared for the Georgia EPD Brownfield program. Soil remediation activities were completed and a final compliance status report was submitted. The project included significant coordination with both the client and attorneys for compensation due to third-party damages.

**Lockheed Martin Aeronautical Systems Company Building B-90, Marietta, Georgia.** A release of diesel fuel from a backup generator near a former solid waste disposal area resulted in a co-mingled plume of groundwater impacted with petroleum compounds and chlorinated solvents. Services included the completion of a RCRA Facility Investigation (RFI), which included a long-term monitoring plan across this 40-acre site.

Adam J. Hayes, P.E.  
Page 6

**Former Cotton Mill, Greensboro, Georgia.** Plans were made to convert a former cotton mill facility to a residential loft facility. Due diligence investigation activities identified abandoned underground storage tanks (USTs) and petroleum-impacted soils and groundwater. A rapid response investigation and coordination with regulatory officials was successful to obtain grandfather acceptance to the Georgia EPD Brownfield program. A prospective purchaser corrective action plan was prepared and initial soil remediation activities were completed. The project included significant coordination with the client and Georgia EPD to manage construction schedules, remediation goals, and third-party financing challenges.

### Presentations & Publications

*Due Diligence for Site Development.* Presented to American Institute of Architects (AIA). Atlanta, Georgia. July 2012.

*Reading & Understanding Geotechnical Reports/ Understanding the Difference Between Phase I & II ESAs.* Presented to the University of Georgia – Office of University Architects. Athens, Georgia. November 2011.

*Georgia Bowl Business Plan Competition.* Best Verbal Presentation and Best Written Plan. February 2010.

*Underground Storage Tanks: Regulations, Assessments and Corrective Measures.* Presented at the Environmental Institute Course Conducting Environmental Evaluations: Assessments & Audits. September 2001.

*Vadose Zone Soil Gas Data Collection and Analysis.* Presented at the 15th Annual International Conference on Contaminated Soils & Water. University of Massachusetts, Amherst. October 1999.

*A Determination of Motor Vehicle Activity Factors for Atlanta, Georgia through Fuel Consumption Analysis,* Georgia Institute of Technology Master's Thesis, 1993.

*Speciated Biogenic Emissions Inventory for the Baton Rouge, Louisiana Area,* Louisiana Department of Environmental Quality, 1993.

*Spatial Analysis of Ozone and Ozone Precursors During the August 9-11, 1992 Ozone Episode of the Southern Oxidants Study Atlanta Intensive,* International Conference on Regional Photochemical Measurement & Modeling Studies, Air & Waste Management Association, San Diego, California, November 1993.

*Motor Vehicle Activity Factor Determination through Fuel Consumption Analysis: Atlanta, Georgia,* Transactions of the Air & Waste Management Association, VIP-27, 215, 1992.

*Alternative Methods for Evaluating Vehicle Miles Travelled,* U.S. Environmental Protection Agency, 1992.



Glenn B. Wallace  
Vice President  
Senior Project Manager

#### EDUCATION

Civil Engineering Technology

#### CERTIFICATIONS

40 Hours OSHA Training for  
Inspection of Underground  
Storage Tanks, Design  
Remediation, and Hazardous  
Waste

40 Hours Hazardous Materials  
and Site Investigations

Radiation Safety for Use  
of Nuclear Gauge Device

#### PROFESSIONAL AFFILIATIONS

Solid Waste Association  
of North America

#### Professional Experience

Mr. Wallace has over 23 years of experience in the arenas of solid waste construction management, construction quality assurance for solid waste projects, environmental compliance, remediation and asbestos abatement, geotechnical monitoring, and investigations. His experience includes private sector clients as well as public sector projects, especially at the federal level. Following is a list of key experience.

#### Solid Waste Projects

**Ponce Landfill, Ponce, Puerto Rico.** Provided CQA project management for two Subtitle D composite-lined cell construction projects, including the initial phase of a gas collection and control system. Managed repair of leachate outbreaks, design of leachate loading pad, stormwater pond remediation, leachate tank repairs, and general site environmental compliance consulting.

**Salinas Landfill, Salinas, Puerto Rico.** Provided project management for two Subtitle D composite-lined cell construction projects. Managed repair of leachate outbreaks, stormwater pond remediation, and general site environmental compliance consulting.

**Richland Creek Landfill, Buford, GA.** Approximately 33 acres of gas installation included leachate recirculation system and all related drilling and pipe installation.

**Hickory Ridge Landfill, DeKalb County, GA.** Project management for Solar Energy Cover (SEC) closure system. Approximately 46 acres of Subtitle D closure using 60-mil scrim-reinforced thermoplastic polyolefin (TPO) liner, with a portion of south-facing slopes utilizing solar panels integrated into TPO.

**Hickory Ridge Landfill, DeKalb County, GA.** Approximately 42 acres of gas installation included leachate recirculation system and all related activities.

**DeKalb County Seminole Road Landfill, DeKalb County, GA.** CQA project management for 50-acre Subtitle D Phase 2A Final Closure.

**Waste Management, Bolton Road Landfill, Atlanta, GA.** Project management for approximately 32-acre Subtitle D final closure, consisting of 12-inch intermediate cover, 12-inch compacted fill layer, Agru America Super Gripnet liner, 8 oz/sy non-woven geocomposite, 12-inch protective soil layer, and 6 inches of topsoil. Design also included features to mitigate steep slopes.

Glenn Wallace  
Page 2

**City of LaGrange Landfill, LaGrange, GA.** Approximately 12 acres of new cell included mass excavation, structural fill, construction of low-permeability clay with amended bentonite, 60-mil HDPE geomembrane liner, leachate collection system, and sand protective cover.

**Dougherty County Landfill, Albany, GA.** Approximately 12 acres of new cell included mass excavation, structural fill, construction of low permeable clay, 60-mil HDPE geomembrane liner, leachate collection system, and sand protective cover.

**Dougherty County Landfill, Albany, GA.** Approximately 88 acres of gas installation included leachate circulation system and all related activities.

**Hickory Ridge Landfill, Atlanta, GA.** Approximately 13 acres of new cell included mass excavation, structural fill, construction of low permeable clay, GCL, 60-mil HDPE geomembrane liner, geocomposite and leachate collection system, and protective soil layer.

**Seminole Road Landfill, DeKalb County, GA.** Twenty-one acres of new upslope cell included a fine-graded subgrade overlaid with a geosynthetic reinforcement layer, a 12-inch thick #57 stone gas transmission layer, a 16-oz/sy non-woven geotextile, a 24-inch thick compacted clay subbase, a high-density polyethylene (HDPE) geomembrane, a drainage geocomposite, a gravity leachate collection system, and a 24-inch thick granular sand protective layer.

**Appling Road Landfill, Sugar Hill, GA.** Approximately 15 acres of landfill closure included subgrade preparation, GCL and final vegetative layer.

**County Farm Drive Landfill, Cobb County, GA.** Approximately forty acres of landfill closure included structural fill, installation of gas collection system, construction of low permeable clay cap, and slope stabilization.

**LaGrange Landfill, LaGrange, GA.** Approximately 50 acres of landfill closure included clay cap and final vegetative layer.

**LaGrange Landfill, LaGrange, GA.** Seven and one-half acres of new cell included mass excavation, structural fill, construction of low permeable processed clay subbase mixed with sodium bentonite, 60-mil HDPE geomembrane liner, leachate collection system, and protective sand layer.

**Three Rivers Landfill, Aiken, SC.** Seventeen acres of new cell for new landfill included mass cut (approx. 2 million cubic yards), structural fill, construction of low permeable processed clay mixed with Sodium Bentonite, 60 mil HDPE geomembrane liner, geocomposite, leachate collection system with sump pump, and protective sand layer.

**LaGrange Landfill, LaGrange, GA.** Seven acres of new cell included mass excavation, structural fill, construction of low permeable processed clay subbase mixed with Sodium Bentonite, 60-mil HDPE geomembrane liner, leachate collection systems, and protective sand layer.

Glenn Wallace  
Page 3

**Catoosa County Landfill, Catoosa, GA.** Eight acres of new cell for new landfill included structural fill under foot print drainage system, construction of low permeable clay subbase, 60-mil HDPE geomembrane liner, leachate collection system, and protective sand layer.

**Seminole Road Landfill, DeKalb County, GA.** Seventeen and one-half acres of new cell included structural fill (1.5 million cubic yards), drainage system and headwall, surcharging for settlement analysis and slope stability, and construction of low permeable processed clay subbase mixed with Sodium Bentonite. Composite liner system included 60-mil HDPE (top and bottom), geocomposite and Bentonite clay liner, leachate collection system with sump pump, and protective sand layer.

**Jefferson County Landfill, Birmingham, AL.** Thirty acres of new cell included composite liner installation monitoring.

#### *Hazardous Waste Management*

**Escambia Wood Treating Corporation, Escambia County, FL.** Responsible for senior oversight of liner installation and construction quality assurance for a Superfund containment cell for creosote-containing wastes.

#### *Completed Environmental Soil Remediation Projects*

**Hess Oil Virgin Island Co-Operation, St. Croix, U.S.V.I.** Environmental Engineering Compliance Officer with duties including 110,000 y<sup>3</sup> soil removal and farming of hydrocarbon contamination and TPH testing.

**Florida Gas Transmission, Orlando, FL.** Supervisor with duties including asbestos abatement, contaminated soil removal, reviewing safety and respirator protocol, and conducting meetings with contractor's owner representative, as well as with local and federal authorities.

**P.S.E. & G. Utilities, Trenton, NJ.** Fifteen million dollar project included asbestos abatement, contaminated soil removal, assisting CIH in writing technical specifications, monitoring and reviewing contractor's documents, and making recommendation report to owner and government agency, as well as assisting in weekly meetings, representing owner at contractor's safety meetings, and reviewing pay request for approval.

**Holloman Air Force Base, Hobbs, NM.** Project Manager/Site Supervisor with duties including P.C.B. contaminated soil removal and disposal in lined site, overseeing replacement and composition of new material, reviewing safety protocol, quantifying amount of material removed, reviewing lab results, reviewing pay requests, and assisting in safety meetings.

**Super Fund Site, Houston, TX.** Field Supervisor Assistant with duties including soil removal and incineration by Westinghouse, quantifying yardage of soil removed, reviewing technical specifications, reviewing lab results and advising project manager, sitting in on

Glenn Wallace  
Page 4

safety meetings, writing daily and weekly reports, and interfacing with government authorities and chief engineers.

**White Sand Missile Range Asbestos Abatement, Mesilla, NM.** Field Coordinator with duties including reviewing technical specifications, coordinating work progress, keeping minutes of weekly meetings, and reviewing contractor's proposals.

**Tenneco Oil, Houston, TX.** Site Engineer with duties including soil remediation, reviewing technical specifications, coordinating daily activities, assisting in weekly meetings, reviewing pay requests, and day-to-day contact with owner and government agencies.

**Martin Marietta Aluminum, St. Croix, U.S.V.I.** Construction Manager/Site Engineer with duties including marsh land contamination (soil remediation), contaminated soil removal and farming, reviewing safety and work practices, monitoring contractor's progress, helping plan construction activities, reviewing technical specifications, reporting to Army Corps of Engineers, approving pay requests, and quantifying material removal and replacement.

**Container Corporation of America (Papermill), Brewton, AL.** Construction Manager with duties including asbestos abatement, removal of contaminated soil from active stream, and lining of streambed to prevent further contamination of streambed soil.

**Amoco Oil, Atlanta, GA.** Supervisor with duties including removal of underground storage tanks, soil disposal, and reviewing lab reports.

**DOE Site, Oak Ridge, TN.** Assisted CIH with duties including soil removal, reviewing lab reports, sitting in on contractor's site meetings, writing daily reports of work practices, reporting daily to CIH and project manager, maintaining safety files, and interfacing with government agencies.

**DOE Site, Plant Vogtle, GA.** Assisted CIH with duties including soil removal, reviewing lab reports, sitting in on contractor's site meetings, writing daily reports of work practices, reporting daily to CIH and project manager, maintaining safety files, and interfacing with government agencies.

#### Other Relevant Experience

**Environmental Engineering Construction, Conyers, GA.** Senior Project Manager with duties including managing asbestos and lead-based paint remediation sites, writing bids and take-off from plans and specifications, managing and training workers at construction site, and writing government compliance reports and final report for UST.

**Southern Asbestos Services, Atlanta, GA.** Managed crew of 35 workers in asbestos abatement projects, renovation, and underground storage tanks remediation. Wrote specifications for asbestos abatement and final report for remediation and construction.

Glenn Wallace  
Page 5

**Westinghouse Environmental, Atlanta, GA.** Managed asbestos, lead, and underground storage tanks remediation. Collected soil and water samples for groundwater remediation site. Conducted safety meetings and maintained project file and reports.

**Maxim Engineers, Inc., Dallas, TX.** Geotechnical Engineer with duties including testing of soils; inspection of rebar, post tension cables, and concrete; waste water remediation and inspection of well-drilling, and writing reports and recommendations on foundation design.