

DAVID S. GREENE, PE

Education

MS – Environmental Engineering, University of Tennessee

MBA – University of Tennessee

BS – Industrial Engineering, University of Tennessee



Professional Licenses

Professional Engineer – North Carolina, South Carolina

Professional Affiliations

Air and Waste Management Association (Chair, Waste Management Division)

Professional Experience

Mr. Greene is a project manager with a variety of solid waste related environmental engineering experience, including air permitting, landfill gas, financial analysis, landfill due diligence efforts, regulatory development and analysis, compliance planning, greenhouse gas monitoring, emission inventory including emission factor development, SPCC and SWPPP development. Mr. Greene also consults internationally in Southeast Asia focusing on the areas of training and evaluating the feasibility of LFG energy projects at solid waste disposal sites. Since joining SCS in 2009, he has completed numerous air permitting applications for landfills, environmental assessments, landfill due diligence projects, and other environmental study projects for municipal and private clients as well as the federal government.

Notable projects that Mr. Greene has been involved with are described below.

Landfill Air Permitting and Compliance

New Hanover County Landfill, NC. Conducted feasibility study for energy development, performed air permitting, developed initial GCCS design plan, responded to state regulators on behalf of the Landfill, managed federal GHG reporting for Landfill, prepared air emissions inventory submittals. Assisted with LFG planning including managing gas well installations and initial GCCS buildout. Developed planning scenarios for implementation for NSPS Subpart XXX requirements.

Waste Management, Great Oak, and Piedmont, NC, Hickory Hill, Oakridge, Palmetto, Richland County SC, Keene Road/Visita in FL, and R&B Landfill in GA. Responsible for a variety of air permitting and air compliance activities. Experience includes air construction permitting of innovative landfill gas fired Leachate Evaporator systems at two landfill sites-including leading initial performance testing efforts, greenfield MSW landfill Title V permitting, and a variety of modifications, Tier 2 sampling/reporting, renewals, and regulatory reporting. Prepared permit applications for landfill gas fired engines, and the preparation of an NSPS exemption demonstration. Prepared a submittal a first-through PSD Title V permit for a C&D landfill. Assisted Environmental Protection staff with implementation for NSPS Subpart XXX requirements. Additionally, prepared a Leachate Evaporator air permitting guidance document for use by Waste Management corporate offices.

Cumberland County Ann Street Landfill, NC. Assisted landfill planning and implementation for NSPS Subpart XXX requirements. Prepared emissions inventory submittal and federal greenhouse gas reporting for Landfill as well as developed planning scenarios for NSPS Subpart XXX requirements.

Santek Environmental, Haywood County White Oak Landfill, NC. Initial air permitting consulting and Title V permitting of site, NSPS Subpart XXX permitting, Tier 2 testing; and assisted with groundwater monitoring well installation, and water quality sampling.

Buncombe County Closed Landfill, NC. Responsible for air-related reporting and coordination, stack testing for on-site LFG-energy project, Title V permitting, Emission inventory Initial development of greenhouse gas monitoring plan and the preparation and submittal of federal Best Available Monitoring Methods documentation for reporting. Assisted Buncombe County in coordinating with third party energy developer and completing mandatory reporting on schedule. Submittal and obtained the Landfill's exit from federal greenhouse gas reporting obligations.

White Street Landfill, Greensboro, NC. Prepared air emissions inventories, federal greenhouse gas reporting, and regulatory determination for treatment systems for municipal site. Assisted in semi-annual reporting and annual certification statements

Berkeley County Water and Sanitation Landfill, SC. Air consulting for county-owned Landfill. Title V permitting renewal and flare modification. Prepared emissions inventories, managed federal greenhouse gas reporting for Landfill and semi-annual air reporting requirements. Supervised Tier 2 NMOC sampling and testing activities under federal NSPS regulation.

LFG Feasibility Study, Wake County, NC. Developed financial *pro forma* analyses and energy option feasibility study for landfill gas to energy project. Responsibilities included investigating proximate industrial facilities for direct-use potential of landfill gas, obtaining steam and energy-use information for potential energy users. Further assisted County with evaluation of the technical component of a landfill gas developer agreement contract and examined various ownership options for the County

Republic Services, Upstate Landfill, SC. Air permitting of large disposal area expansion, NSPS Subpart XXX permitting, assembled and submitted GCCS design plan under Subpart XXX requirements, prepared air emissions inventories, federal greenhouse gas reporting, and regulatory determination for treatment systems. Supervised air dispersion modeling for site. Assisted in semi-annual reporting and annual certification statements.

Republic Services, Foothills, NC. Managed Title V permitting efforts Prepared air emissions inventories, federal greenhouse gas reporting, and permitting and initial performance testing for an open flare. Assisted in semi-annual reporting and annual certification statements and in evaluating leachate treatment options.

Republic Services, Charlotte Motor Speedway Landfill, NC. Permitted enclosed flare, prepared air emissions inventories, federal greenhouse gas reporting, and regulatory determination for treatment systems. Assisted in semi-annual reporting and annual certification statements

Lockhart Power Landfill Gas to Energy Projects, SC. Prepared Title V air permit applications for two separate landfill gas to energy projects utilizing engines to generate electricity for sale on the local grid. Other responsibilities included developing landfill gas sampling protocol, analyzing landfill gas and submitting test results to state regulatory agency for permitting purpose.

Republic Services, Foothills. Prepared air emissions inventories, federal greenhouse gas reporting, and permitting and initial performance testing for an open flare. Assisted in semi-annual reporting and annual certification statements and in evaluating leachate treat options.

Republic Services, Uwharrie. Prepared air emissions inventories, federal greenhouse gas reporting, and permitting and initial performance testing for an enclosed flare, permitting of leachate treatment

system. Assisted in semi-annual reporting and annual certification statements. Worked with site partner to permit LFGE facility beneficially utilizing gas from Uwharrie Landfill.

Republic Services, Upper Piedmont, NC. Permitted new flare, prepared and submitted Air Emissions Inventories for facility, federal greenhouse gas reporting,. Other activities included Title V compliance certification efforts.

Republic Services, East Carolina, NC. Prepared and submitted Air Emissions Inventories for facility, federal greenhouse gas reporting, permitting expanded flare capacity Other activities included Title V compliance certification efforts.

Republic Services, Twin Oaks, TN. Prepared permitting documents, air emissions inventories, assisted with responses to local regulator regarding air compliance.

Element Markets Landfill Gas to Energy Project, NC. Prepared Title V air permit applications for landfill gas to energy projects utilizing an engines to generate electricity for sale on the local grid.

UGI Energy Services Landfill Gas to Energy Project, Hegins, PA. Prepared Title V permit application and Startup, Shutdown, Malfunction (SSM) Plan for a Turbine-based landfill gas to energy project; worked with project officials and regulators. Prepared Title V renewal for the site

Additional Landfill Experience

International Finance Corporation. Conducted landfill and market due diligence as technical mission participant for a municipal solid waste landfill project in Southeast Asia. Activities included landfill gas projection evaluation, solid waste market evaluation, electric sales assessment, and assessment of the technical component of waste delivery contract. Worked closely with IFC team and landfill owner and met with local environmental and solid waste officials.

Confidential Client, US. Conducted landfill environmental and operational due diligence for three municipal solid waste landfills projects. Investigation included records review, site visits, mobile equipment court, and evaluation of potential environmental liabilities.

U.S. Environmental Protection Agency, Landfill Methane Outreach Program (LMOP) – Global Methane Initiative (GMI) and Climate and Clean Air Coalition (CCAC). Served as GMI Landfill Sector Country contractor manager for Indonesia and CCAC contractor manager for Jakarta. Facilitated meetings with government officials and private parties to gain understanding of solid waste sector in Indonesia, organizational dynamics impacting landfill energy development, and other factors impacting GMI success in the country. Managed Indonesian subcontractors and managed and delivered technical landfill maintenance and operations workshop targeted to landfill operators. Visited numerous landfill sites in Indonesia including landfill-gas-to-energy projects.

U.S. Environmental Protection Agency, Landfill Methane Outreach Program (LMOP) – Additional Projects. Provided support for domestic (U.S.) and international outreach activities. Assisted with international feasibility studies for potential landfill gas energy projects landfill gas modeling, assisted the development of domestic fact sheets for greenhouse gas markets overview and High-BTU project descriptions. Developed tools and conducted financial *pro forma* analysis for an LFGE project in Brazil.

Industrial Experience

Mercury Paper, VA. Provided support in developing particulate matter (PM) emissions estimates for production line as well as permitting and impact analysis in a paper converting facility. Assistance included designing and supervising dust collection study which included analysis of filtered material.

Fumigation Industry NC, NJ, SC, GA, TN. Assisted providers of fumigation services for commodities involved in exporting or importing in locations from NJ, NC, SC and GA. Activities included examining air permitting requirements for various locations, estimating emissions from fumigation activities and in discussions with state regulators regarding air permitting of fumigation facilities.

Scotts Miracle-Gro, SC. Assisted with emissions estimates and site review.

Strategic Material Incorporated, NC. Conducted environmental due diligence for asset purchase, and follow-up air regulatory assistance

Schweitzer Engineering Laboratories, Pullman, WA. Assisted manufacturing facility with an urgent, regulatory-driven feasibility study and equipment selection of VOC emission control system for process lines.

Lockhart Power, SC. Prepared Spill Prevention Control and Countermeasures (SPCC) plans for variety of facilities, including two hydroelectric dams and two diesel peak electric power generation stations.

Evergreen Packaging-Blue Ridge Paper Products, Canton, NC. Environmental Projects and Compliance Engineer. Supported daily evaluation of mill operations (pulp and bleaching processes, chemical recovery processes, and boiler operations) in order to maintain compliance with applicable federal, State, and local emission standards. SPCC certification responsibilities. Managed external contract to develop site-specific GHG emissions attributable to Industrial Landfill. Responsible for the creation and assembly of corporate-wide greenhouse gas inventory. Contributed to the development of air toxics modeling submittal which required investigation, review, and verification of over 1,000 data points and the interpreted relevant state regulations. Coordinated with mill personnel to improve efficiency and minimize air emissions and other environmental aspects. Responsible for mill Environmental Management System (EMS) and the delivery of environmental awareness for mill employees. Familiar with Kraft pulping processes and applicable environmental requirements at pulp and paper mills.

Tennessee Valley Authority. Manger Bondholder Relations. Responsible for ensuring effective communication with bondholders and related parties including institutional and individual investors and financial analysts. Coordinated all activities with corporate Treasury department managing approximately \$25B in debt. Experience includes authoring press releases and international road-shows. Regularly communicated with senior executives. Experience in international business travel. Familiar with electric utility industry from technical and economic perspectives including issues involving grid supply.

Publications and Presentations

Greene, D., Peterson, E., "Pipeline-Quality Landfill Gas: Renewed Interest for Your Landfill?" EM Magazine, March 2020.

Greene, D., "Landfill Leachate: Just Evaporate the Problem? or Permitting Issues for Using Landfill Gas to Reduce Leachate Volume" EM Magazine, June 2019.

Greene, D., "Lost in Transition: Where Do the New Landfill Air Regulations Stand?" EM Magazine, March 2018.

Greene, D., Moderator and Presenter, "Landfills: An Overview of the Latest in Air Regulations, Sustainable Operations, and Energy Recovery," Air & Waste Management Association Webinar, October, 2017

Greene, D., "Landfills and Air Emissions: The Clock Has Started for Compliance with New Federal Regulations," EM Magazine, March 2017.

Greene, D., Hudgins, M., "Aerobic Landfill Bioreactors as an Alternative Method of Managing Municipal Solid Waste," Air and Waste Management Association International Conference, June 2010.

Greene, D. "Air Emissions Inventory Reporting – An Industry Perspective." Carolinas Air Pollution and Control Association. October 2008.

Greene, D., Davis W., Pendergrass, W., Renfro, J., Tunkel C., "Comparison Between Tapered Element Oscillating Monitors (TEOM) and Federal Reference Method (FRM) for PM2.5 Measurement in East Tennessee." Air and Waste Management Association. Conference Proceedings. June 2004.

Diaz, L., Greene, D., Doraiswamy P., W., Reed, G., Fu, J., "Alternative, Clean, and Reformulated Fuel Effects on Ozone Formation in the Great Smoky Mountains National Park." Air and Waste Management Association. Conference Proceedings. June 2004