Michael R. Goudreau, PE

Education

B.S. - Agricultural Engineering/Soil & Water Conservation, University of Maryland, 1985

Professional Licenses

Professional Engineer – Maryland, Pennsylvania, Virginia, West Virginia

Professional Affiliations

Alpha Epsilon (Agricultural Engineering Honor Society Alumnus)

Professional Experience

Mr. Goudreau has been with SCS Engineers since 1997, and serves as a Senior Project Advisor for solid waste projects including municipal, rubble and industrial waste landfills, landfill closures, solid waste transfer stations, and public convenience/recycling centers. Project responsibilities typically include multi-disciplined project management, senior technical review, facility design, preparation of plans, studies, reports, specifications, contract documents, quantity and cost estimates, regulatory permit applications, shop drawing reviews, work plans, and reports required for environmental and landfill permitting. Design expertise includes stormwater management and conveyance, grading, erosion and sediment control, landfill cell layout, fill sequencing, leachate management systems, and landfill closure. Examples of his project experience include:

Solid Waste Management Engineering

**Frederick County Regional Landfill, VA.** Project manager and designer for numerous projects including major permit amendments for two landfill vertical expansions, alternate liner systems and new leachate storage lagoon, new landfill cells and partial closure for construction/demolition debris (CDD) and municipal solid waste (MSW) landfills. Obtained regulatory approval of major amendments to the MSW Landfill permit for alternative bottom liner and alternative final cover systems, and vertical expansions. Obtained regulatory approval of major amendment to the CDD Landfill permit for alternative bottom liner. Provided phased plans in support of an application for Research, Development and Demonstration (RDD) Rule project for leachate recirculation over an alternative bottom liner. Provided site evaluation and conceptual designs of citizen convenience center, as well as preparation of a Storm Water Pollution Prevention (SWPP) Plan and Spill Prevention Containment and Control (SPCC) Plan for the landfill facility. Provided construction documents for upgrades to a leachate storage lagoon with pump station, and drainage improvements to an existing closed landfill. Provided engineering for a minor permit amendment to update the CDD closure plan to improve surface drainage measures. Provided construction documents for partial closure of CDD landfill. Provided construction and permit modification documents for design/build of a 4 million gallon leachate storage lagoon.

**Gude Landfill Remediation, Montgomery County, MD.** Provided constructability review, technical support for construction management engineering services for 100-acre landfill closure.

**Millersville Landfill Cell 9 and Subcell 9.1, Anne Arundel County, MD.** Project manager for disposal planning for new Cell 9, including preliminary planning, reporting and evaluations of landfill capacity. Developed design improvements for facility to optimize operations and lifespan of existing Cell 8 and proposed Cell 9. Provided project management and engineering for construction documents for the initial Subcell 9.1 and infrastructure for new Cell 9. Provided engineering during construction.

**Millersville Landfill Subcell 9.2, Anne Arundel County, MD.** Provided construction management engineering and certification for Subcell 9.2 construction involving excavation of approximately 600,000 cubic yards of soil, construction of compacted clay liner subbase, double-lined geosynthetics installation , protective cover, leachate collection and detection system and connection to existing leachate removal system, storm drainage, roads and ancillary features.

**Millersville Landfill Cell 567 Replacement Cap, Anne Arundel County, MD.** Provided constructability review, construction management engineering and certification for Cell 567 Replacement Cap construction involving approximately seven (7) acres of subgrade preparation, geosynthetics installation, protective cover soil placement, modifications to the landfill gas system, cover terrace construction/repairs, erosion/sediment control and storm drainage, and permanent stabilization.

**New Ivy Solid Waste Transfer Station, Charlottesville, VA.** Project Director and senior technical reviewer for design and construction bid documents for a new transfer station for the Rivanna Solid Waste Authority.

**Greater Lebanon Refuse Authority, PA, Landfill Expansion and Landfill Closure.** Senior technical review and design of phasing plans, sediment control/stormwater management ponds, storm drainage, erosion/sediment control plans, leachate collection/removal system plans for new landfill to be constructed over existing closed landfill. Senior technical review of construction documents to cap part of the existing active landfill.

**Mt. Hope Citizens’ Drop-off Area, Calvert County, MD.** Project Manager responsible for environmental permitting, engineering, construction bid documents for development of a new convenience center for dropoff of waste and recyclables on a relatively small site with an existing drop-off area that had to remain open during construction of the new facility. Provided engineering during construction.

**New York, NY, Fresh Kills Landfill Closure.** Provided senior technical review for landfill closure engineering, erosion/sediment control, storm drainage and stormwater management design, construction documents.

**Prince William County Landfill Expansion, VA, New Cells and Partial Capping.** Design of new landfill cells and partial capping for municipal solid waste landfill. The project included preparation of grading, erosion/sediment control plans, leachate collection/removal system plans, specifications and cost estimates.

**Prince William County Landfill Expansion, VA, Permit Amendments.** Preparation of grading, erosion/sediment control plans, leachate collection/removal system plans, for obtaining regulatory approval of permit amendments of a vertical and lateral expansion.

**Prince William County Landfill Expansion, VA, Phase I, Parts 3 & 4 Lined Cells.** Design of two 9-acre landfill cells for a municipal solid waste landfill. The project included preparation of grading, erosion/sediment control plans, leachate collection/removal system plans, specifications and cost estimates.

**Hilltop Landfill, Virginia.** Design and preparation of permit documents for closure of a construction and demolition debris (CDD) landfill. Design tasks included grading, stormwater measures, cap, and cost estimating. Provided engineering for construction documents for closure of Phases II and III, part of which is being redeveloped as access/parking for a mixed use development.

**City of Annapolis.** Providing ongoing solid waste and environmental consulting on a variety of issues including dam rehabilitation; repair of culvert under old landfill using directional drilling techniques; evaluation of existing slopes on old landfill and recommendations for improvements and monitoring.

**Frederick County, MD Landfill Vertical Expansion and Construction Projects.** Provided engineering and project management to obtain regulatory approval of permit document modifications including a vertical expansion and alternate bottom liner system. Landfill permit documents included geotechnical analyses, stormwater management analysis, plans, specifications, and report for the 58-acre Site B Landfill vertical expansion. Prepared construction documents for three new landfill cells totaling 40 acres, 73-acre Site A Landfill closure and LFG collection/control system, and 17-acre Rubble Landfill closure. Unique aspects of the designs include an alternate liner system and use of pipe gutters and diversion berms for stormwater runoff control, as well as measures to provide continued access across the existing landfill to the adjacent new Site B landfill during Site A closure activities.

**Washington County, MD, Forty West Sanitary Landfill.** Project tasks were the preparation of landfill and wetland permit documents including plans, specifications, and report for a 190-acre municipal landfill, and construction documents for the initial landfill cell and supporting facilities. Unique aspects of the design include an alternate liner system and use of pipe gutters and diversion berms for stormwater runoff control. Design includes stormwater quality management utilizing retention ponds.

**White Marsh, MD, Days Cove Road Landfill, Enviro-Gro Technologies.** Prepared plans, specifications, and reports for permitting and construction of a rubble landfill. Performed and managed ongoing topographic and construction stakeout surveying. Performed volume studies to evaluate adjacent property for potential lateral landfill expansion. Provided permitting assistance for landfill and surface mining activities.

**USDA Agricultural Research Center, Beltsville, MD, Beaver Dam Road Landfill Mulch Biowall.**  Prepared construction drawings and erosion/sediment control plans for a design/build project to install a groundwater remediation mulch biowall trench downgradient of a closed landfill.

**Prince George's County, MD, Brown Station Road Sanitary Landfill.** Managed design and permitting for grading, stormwater management, wetland/waterway alterations and sediment control for stockpile areas associated with the landfill. Performed technical and cost evaluation of landfill closure cap alternatives. Performed quality control review of landfill closure plans, and erosion and sediment control plans for new landfill cells.

**Washington D.C. Transfer Stations.** Responsible for sitework, stormwater management and sediment control design for expansions to two transfer stations. The project includes preparation of plans, specifications and cost estimates, as well as obtaining regulatory approval.

**Magnesita Refractories, York, PA.** Provided senior technical review of construction plans for the final lift of a residual waste landfill, and for vertical expansion stormwater management and sediment control.

**USACE, Fort Drum, NY, Old Sanitary Landfill Cell 2 Closure Improvements.** Provided project management and engineering design for a design/build project to recap 17-acre Cell 2, which included impermeable barrier cap, erosion/sediment control, and stormwater drainage design.

**GenOn, Gibbons Road Property, Surface Mine Reclamation with Coal Combustion Byproduct (CCB).** Provided engineering and permitting services to reclaim an inactive sand and gravel mine using CCB material over an area to be lined with geomembrane. Permitting phase of project included alternative liner demonstration, slope stability analyses, leachate collection and storage system, grading, erosion and sediment control for an 85-acre reclamation area. Currently providing engineering services for the preparation of construction documents for the first two reclamation cells and associated infrastructure.

**Brazil. Novo Gramacho Landfill, Rio de Janeiro.** Closure design for a 6000 ton per day landfill that may remain active up to 2016. The work involves coordination with local Brazilian engineering consultants, construction planning, final grading and drainage plans, leachate control and gas control.

**Israel, Hiriya Landfill Restoration.** Engineering related to alternatives for restoration of the existing closed landfill which will become part of a regional park. Design of stormwater conveyance systems for the four alternatives. Design of interim storm drainage system for the current conditions. The project includes preparation of reports, plans, specifications and material lists.

**Israel, Effe Landfill.** Evaluated cell configurations and phasing for a new municipal solid waste landfill. Design of grading, liner and leachate collection system for the first landfill cell, and perimeter roads and drainage. The project includes preparation of plans, specifications and material lists.

**Delaware Solid Waste Authority, Sandtown Sanitary Landfill, Area C.** Designed leachate collection systems, subgrade and final grading plans, haul roads, and site drainage. Designed double-lined landfill test cells to evaluate liner materials and also designed runoff flow monitoring system. Reviewed construction shop drawings.

**Harford County, MD, Abingdon Landfill Closure.** Evaluated existing cover for use as landfill cap barrier layer and delineated waste limits. Managed surveying and wetland delineation sub-consultants. Prepared grading plans for improving existing landfill cover thickness and drainage.

**Harford County, MD, Spencer’s Rubblefill Closure.** Provided engineering, stormwater management, and senior technical review for landfill closure design. Construction is in progress and site is slated to be redeveloped as a County park.

**Howard County, MD, Alpha Ridge Landfill.** Preparation of the Stormwater Pollution Prevention (SWPP) Plan to comply with the General Discharge Permit for Industrial Activities. Designed stormwater management pond retrofits to comply with updated regulations and to support expansion of the citizen convenience center. Prepared a leakage monitoring program and response action plan for a 30-acre, double-lined sanitary landfill.

**Howard County, MD, New Cut Landfill Closure Improvements.** Project management, design and permitting of grading, drainage improvements, wetland/waterway alterations, sediment control and stormwater management for a 40-acre, closed municipal Landfill, including addressing compliance with the NPDES Surface Water Discharge Permit and preparation of the Storm Water Pollution Prevention Plan. Design included stormwater quality management measures such as a bio-retention area, and swales designed to filter stormwater runoff.

**USACE Baltimore District, MD, Fort Detrick Sanitary Landfill.** Provided engineering, surveying, shop drawing review, and permitting assistance for design of a lined sanitary landfill and closure cap of an existing landfill. Designed stormwater management ponds.

**Worcester County State Commissioners, MD, Snow Hill Sanitary Landfill.** Prepared a report summarizing landfill closure options and preliminary design.

**Hanover, PA, Keystone Sanitation Landfill.** Design and preparation of contract documents for closure of a former sanitary landfill. Design tasks included grading, sediment control measures, cap, and passive landfill gas collection and control system.

**USAF, Anderson AFB Draft Environmental Impact Statement.** Prepared conceptual design of geogrid reinforcement of a landfill closure cap, to address concerns about differential settlement of cap foundation. Calculated leachate generation rates using Hydrologic Evaluation of Landfill Performances (HELP) computer model.

**ERCO Properties Tree Farm Culvert Crossing.** Designed a culvert for a private road crossing of Burch Branch, for a biosolids land applications site. Prepared floodplain study and permit application for wetland/waterway construction. Prepared plans, cost estimates and grading permit application.

**Onandaga County, NY, Sanitary Landfill Site Search.** Studied feasibility of 31 considered sites. Helped develop criteria matrix used to narrow down site choices.

Hazardous/Other Waste Management Engineering

Managed the remedial design and remediation activities for transformer sites with PCB containing soils and concrete. Designed remediation plans for PCB contaminated storm drains. Managed remedial designs for cleanup and upgrades related to small arms ranges at Air Force bases. Designed a closure cap for a PCB-contaminated site for a private client. Designed implementation plans for treatment and removal of 10,000 cubic yards of solvent-contaminated soil. Designed a double-lined explosive testing pad for a government client. Designed a decontamination waste system upgrade for a government testing facility building.

**U.S. Navy, Northern Division:**

* **Interim Removal Action at Site 3 Burn Pits.** Designed implementation plans for removal, treatment, and disposal of 10,000 cy of solvent-contaminated soil and debris from former burn pits. Designed stormwater management pond and sediment control measures. Performed cost estimate and prepared design analysis report. Processed project specifications. Prepared permit applications for local sediment control approval and NPDES Surface Water Discharge permit.
* **Transformer Site Soil, Naval Station Brooklyn.** Developed a remedial action work plan for sampling and remediation of PCB-containing soil and concrete at two active transformer substation and one former transformer substation. Coordinated site remediation tasks and sampling efforts during the remediation of the project.
* **Remediation of Sub-Basin E Storm Drains.** Developed plans, specifications, reports, and cost estimates for removal of PCB-containing sediments from storm drains. Designed new storm drains to replace deteriorated portions of existing pipes. Performed review of contractor submittals, including shop drawing review.
* **NCBC, Davisville, RI, Allen Harbor Landfill.** Provided project management and engineering design for a landfill closure, which included an impermeable barrier cap, coastal protection measures and wetlands enhancement. Prepared work plan for sub-surface geotechnical investigation of coastal revetment foundation and environmental sampling of sediments, and coordinated geotechnical and environmental sampling of sediments, cap design, plans, reports, specifications, and cost estimates.
* **NSPCC, Mechanicsburg, PA.** Responsible for senior technical review of contract documents for sediment control measures for a lead ingot storage area. Also responsible for project management of construction phase services including shop drawing reviews.
* **NSPCC, Mechanicsburg, PA, PCB Soil Removal, Lot 22-C.** Project task management for development of sampling plan and excavation plan for remediation of PCB-containing soil at a site adjacent to a former transformer storage area. Coordinated site remediation tasks and sampling efforts during the remediation phase of the project.
* **Edson Drive and Facility No. 22.** Designed implementation plans for removal and disposal of 125 cy of PCB-containing soil at two transformer sites. Prepared plans, reports, cost estimates, and specifications. Responsible for performing review of contractor submittals including shop drawing review.

**Eglin Air Force Base, FL, U.S. Air Force Center for Environmental Excellence (AFCEE) Remediation of Former Transformer Site Soil.** Developed a remedial action work plan for remediation and verification sampling of PCB-containing soil at a former transformer substation.

**Air Combat Command, U.S. Air Force Small Arms Range Upgrades:**

* **Langley Air Force Base, VA.** Responsible for task management of conceptual design and cost estimates for upgrades to rifle and pistol ranges including recommendations for soil remediation and installation of total containment bullet traps and overhead range baffles.
* **MacDill Air Force Base, FL.** Responsible for project management of conceptual design and cost estimates for upgrades to rifle and pistol ranges including recommendations for soil remediation and installation of total containment bullet traps and overhead range baffles.

**USACE, Baltimore District, MD:**

* **Aberdeen Proving Ground Interim Remedial Measures.** Developed conceptual designs and cost estimates for interim remedial measures (IRM) to remove potential sources of contamination at several sites. Developed Field Sampling Plans for several IRM sites.
* **Havertown PCP Superfund Site.** Responsible for civil engineering aspects of the design of storm drain remediation, ground water collection trench, extraction wells, and piping for a ground water treatment facility for a former wood-treating site.
* **Aberdeen Proving Ground Building E3724.** Designed new piping, pumps, and storage tanks for decontamination wash down water. Prepared plans, specifications, and reports. Responsible for performing review of contractor submittals, including shop drawing review.
* **Aberdeen Proving Ground Range 12A Test Pad.** Designed double-lined test pad, piping, and underground storage tank (UST) for containment of liquids resulting from explosives testing.

Land Development

Served as a project engineer on residential and commercial land development projects. Responsibilities included design of roadways, storm drains, and grading; preparation of regulatory permit applications including those for wetlands, grading, and subdivision approval; quality control review of site plans, road plans, and storm drain plans. Design of pressure-dosed mound septic systems and primary contact with regulatory agencies and clients.

**Curtis Bay, Baltimore, MD, Herring Pond Diffuser Installation Design, W.R. Grace.** Responsible for civil design of effluent outfall pipe, diffuser, and overflow spillway from wastewater treatment pond.

**Fairfax, VA, Realty Corporation Raven Ridge, S.A.D.** Designed roads, storm drains, stormwater management and site development plans for an 88-lot single-family subdivision. Processed wetlands permit application.

**Edgewater, MD, Friendswood Development Company South River Colony.** Designed site grading, storm drains, water lines, and sanitary sewers for a 120-acre Planned Unit Development, which included multi-family residential, office, and retail space. Prepared cost estimate and permit applications. Performed quality control for roads, storm drains, sewer, and water plans for commercial developments.

Underground Storage Tanks

**USACE Baltimore District, U.S. Military Academy West Point, NY UST Upgrades.** Responsible for senior technical review of engineering and economic cost analysis, and contract documents for upgrades to UST sites. Upgrades included removal and replacement of USTs and conversions of some facilities to natural gas use.

### Other Experience

Surveying. Performed topographic surveying, boundary surveying, and construction stakeout surveying. Served as party chief on survey field crews for topographic and stakeout surveys.