

## DOUG DOERR, PE

### Education

MBA – University of Kansas, 1996

BS – Civil Engineering, University of Nebraska-Lincoln, 1991



### Professional Licenses

Professional Engineer – Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska

### Professional Affiliations

Air & Waste Management Association

Missouri Waste Control Coalition

Solid Waste Association of North America

### Professional Experience

Doug Doerr is SCS Engineers' President and CEO effective January 1, 2024. He served as the Business Unit Director of our Central Business Unit for 10 years, providing leadership, guidance, and the necessary resources for SCS's Central Business Unit. While guiding the region, he continued to serve clients and provide technical expertise to national, regional, and local clients in the solid waste management and utility sectors. As a civil engineer with formal and practical business education, he prides himself on being able to help provide solutions to clients' technical and regulatory challenges while understanding the various business drivers that frame each challenge. Since joining SCS in 2002, he has successfully completed hundreds of projects that involve studies, permitting, compliance, and design across various market sectors for both public and private clients.

Doug has directed or conducted numerous projects involving all facets of solid waste management nationwide, including the permitting, design, construction, and compliance of various types of disposal facilities and supporting infrastructure. Projects include feasibility and financial studies, due diligence, facility siting, site investigations, environmental studies, and permitting, design, and construction services for solid waste landfills, industrial waste landfills, utility waste/coal combustion residuals impoundments and landfills, transfer stations, power plants, and various other industrial and commercial facilities. Permitting and compliance efforts have involved solid waste, stormwater, and air permits along with various other environmental and local/regional/state use and zoning requirements.

### Project Experience

#### Landfill Engineering

**Oak Grove Landfill; Arcadia, Kansas – Waste Corporation of Kansas, Inc.** Project manager for various projects at the landfill facility. Most notably, the existing landfill was redesigned as part of an ownership transition of the site. Among the highlights of the redesign was the addition of approximately 2,000,000 cubic yards of airspace within the original permitted footprint of the disposal area. Most recently, served as project manager and engineer of record for the construction

of a 4.2-acre landfill cell, including field oversight, testing, documentation, and construction quality assurance reporting.

**Central Missouri Landfill; Sedalia, Missouri – Waste Corporation of Missouri, Inc.** Project manager for the design and permitting of the horizontal expansion at this facility. The 50-acre expansion is unique in that it is situated in a current quarry pit and will serve as the reclamation tool for the site. Unique features of the design included the use of leachate recirculation and a demonstration to the regulatory authority for the use of a geosynthetic clay liner (GCL) in place of a portion of compacted soil in the bottom liner and cap systems. Other recent projects have ranged from directing the closure of two non-Subtitle D landfills to assisting with the permitting and design and redesign of a portion of the active Subtitle D landfill. Mr. Doerr directed construction quality assurance activities for both the closure of the two older landfills and the construction of the new Subtitle D disposal cells.

Mr. Doerr also provided project management and design services for the design and permitting of a leachate recirculation system for the Subtitle D landfill at the site. The design included retrofitting the existing leachate collection system to recirculate leachate into horizontal trenches constructed during normal landfilling operations. The recirculation system should minimize or remove the need for leachate to be disposed of off-site at the local wastewater treatment plant, thus saving Waste Corporation thousands of dollars in leachate management costs.

**Lee's Summit Resource Recovery Park; Lee's Summit, Missouri.** Principal in Charge for various projects for the Lee's Summit Sanitary Landfill. He has been involved with the facility for nearly 15 years and has directed or managed nearly all projects at the site. Recent projects have included groundwater monitoring and reporting; gas system design and implementation; annual volume calculations; closure/post-closure plan updates; air permitting/compliance; and various operational and management issues. Mr. Doerr routinely assists with groundwater assessment and gas migration negotiations with the MDNR.

**Lee's Summit Resource Recovery Park; Lee's Summit, Missouri.** Project manager for various projects for the Lee's Summit Sanitary Landfill. Most recently, projects have included construction quality assurance for a Subtitle D landfill expansion; quarterly groundwater monitoring and reporting; preparation of annual volume calculations; revision of closure/post-closure plans and costs; preparation of an emissions inventory questionnaire; and the design and permitting of the City's connection of its leachate collection system to a sanitary sewer. Mr. Doerr also served as project manager for a landfill gas investigation that addressed gas migration at the City's sanitary landfill. Activities included assisting the City with quarterly and weekly gas monitoring as directed by the Missouri Department of Natural Resources (MDNR). The project included a joint effort with the MDNR to thoroughly investigate the area of concern using a membrane interface probe (MIP) to characterize geologic features and their relation to gas migration. Ultimately, the investigation led to a modification to the City's solid waste operating permit and compliance with Missouri Solid Waste Regulations.

**Solid Waste Planning, Design, and Permitting; Lawton, Oklahoma Sanitary Landfill.** Project manager for a solid waste master planning project for the City's existing sanitary landfill site. The project consisted of analyzing the City's current and future status and developing a master plan that included a horizontal expansion to the current landfill. The planning project led directly to the decision to commence a landfill expansion project including hydrogeologic site investigation, design, and permitting.

Mr. Doerr also served as the Project manager in the design of a sanitary landfill for the City of Lawton, Oklahoma. This project involved the vertical and horizontal expansion of an existing landfill.

Included in Mr. Doerr's responsibilities were final grading, surface water drainage, and leachate management. He also aided in the preparation of the engineering report and drawings and prepared a stormwater pollution prevention plan (SWPPP) and a spill prevention control and countermeasure (SPCC) plan.

**Landfill Design Enhancement, Southside Landfill, Pueblo, Colorado.** The Southside Landfill located just west of Pueblo, Colorado had historically constructed its bottom composite liner system using claystone that it excavated from the landfill property. The challenge for the landfill's owner was that the claystone was buried beneath significant rock overburden and could only be accessed through costly rock excavation. Mr. Doerr led a design team and served as the certifying engineer to modify the facility design and its associated Engineering Design and Operations Plan (EDOP) to enhance the design and create a more efficient landfill. Bottom grades were raised above the subsurface rock deposits to avoid the costly rock removal. The need for the claystone was removed by modifying the design to incorporate the option to use a geosynthetic clay liner (GCL) in place of the 2 feet of compacted clay that was previously permitted. Final grades were modified to recoup the disposal capacity lost by raising the base grades. In summary, the landfill was transformed to save the owner money and construction headaches while also providing additional disposal capacity (i.e., revenue).

**South Canyon Landfill, City of Glenwood Springs, Colorado.** Principal in Charge of numerous projects for the South Canyon Landfill including groundwater monitoring, statistical analysis, and reporting; design and permitting for horizontal and vertical expansions; Certificate of Designation amendment, septage management, environmental sampling, volumetric calculations, composting design and operations plan preparation, APEN and Construction permitting with the Air Quality Control Division, and surface water management design.

**Tier 2 Sampling and Analysis Reporting; Private Client, Various Locations in Colorado.** Principal in Charge of landfill gas sampling and subsequent reporting in accordance with the Tier 2 testing and reporting requirements of New Source Performance Standards (NSPS) at the facilities. This included the collection of landfill gas samples, calculation of site-specific non-methane organic compound (NMOC) concentration, and modeling with the use of the Landfill Gas Emissions Model (LandGEM) to determine NMOC emission rates for four different facilities located along the front range of Colorado.

**Landfill Design, Bidding Services, and Construction Services, Waste Connections; Various Sites, Colorado.** Project Director or Project Manager for several projects for Waste Connections in Colorado. SCS was retained to provide final design, preparation of bid documents, and construction quality assurance (CQA) for eight separate projects at five landfills that included over 50 acres of new disposal cell construction. For each of the projects, the SCS team worked closely with the client to identify the most efficient and constructible design that still met each facility's Engineering Design and Operations Plan (EDOP). Seamless services were provided to carry each project from the initial design to the final approval of the construction quality assurance (CQA) report by the CDPHE. Value-added services provided by SCS during the projects included "on the fly" design and construction modifications, EDOP revisions, continuous owner/engineer/contractor communication, and expedited CQA report submittal and approval by the CDPHE.

**Springfield Sanitary Landfill, Springfield, Missouri.** Principal in Charge for various projects for this municipal regional landfill facility. Recent projects have included leachate management design/permitting, financial and airspace planning, cell design and construction assistance, and landfill gas system upgrades. Most recently he was involved with the successful completion of the design, permitting, and construction of a 9-mile leachate force main that allowed the City to save millions of dollars over the life of the landfill.

**City of Salina MSWLF - Salina, Kansas.** Principal in Charge of permitting a Master Plan for the City's MSW landfill. The Master Plan was developed to allow the City to plan and budget for the next 150+ years of waste disposal. The design and planning process gained the City nearly 30 million cubic yards of additional disposal airspace.

**Sanitary Landfill; Stanton County, Nebraska – Northeast Nebraska Solid Waste Coalition.** Project manager for the 2001 annual volume analysis and financial assurance update. The project consisted of verifying waste placement information for the fiscal year and calculating landfill capacity used and remaining; borrow material used and remaining; and approximate in-place waste densities. A final report and drawings were generated for submittal to the Coalition.

**Bluff Road Sanitary Landfill; City of Lincoln, Nebraska.** Project manager for various aspects of environmental monitoring at the Bluff Road Landfill. Included in these activities were laboratory coordination, field sampling, statistical analysis, and reporting for groundwater, leachate, and stormwater. Project tasks included close coordination with the NDEQ with regard to monitoring results and follow-up reporting.

**Construction & Demolition Landfill; Olathe, Kansas – Asphalt Sales Company.** Project engineer for the permitting of a 52.5-acre construction and demolition (C&D) landfill near Olathe, Kansas. Mr. Doerr was involved with obtaining a permit from the Kansas Department of Health and Environment (KDHE) to construct and operate a C&D landfill as a means of reclaiming land at an active quarry site. The final land use for the site at the time of landfill closure is planned to be a light industrial park. In addition to the state permitting requirements, the project required a large portion of the site to be rezoned by the City of Olathe. A special use permit was also required from the City prior to approval.

**Alternative Final Cover System, Timber Ridge Landfill, Richwoods, Missouri.** When it comes to the closure of a landfill facility, the ability to save thousands of dollars in construction and maintenance costs is a deal that most owners would take. For the Timber Ridge Landfill located southwest of the St. Louis metropolitan area, the option for a final cover system that didn't require the prescriptive amount of soil was ideal. The site was generally short of the quantity and quality of soil needed to fully close the landfill once it reached the final permitted heights. Mr. Doerr led a design team in evaluating design options and preparing a permit modification package for submittal to the Missouri Department of Natural Resources that provided an option to use a synthetic turf product as part of its final cover system. The synthetic turf would save the site thousands of cubic yards of soil as well as provide many years of minimal cover maintenance. Additionally, an added benefit of utilizing synthetic turf was the cleaner stormwater runoff that it produced when compared to a natural vegetation and soil cover system.

**Landfill Closure – Olin Corporation.** Project manager for the closure of approximately 18 acres of the sanitary landfill at the Lake City Army Ammunition Plant near Blue Springs, Missouri. Professional engineering services were provided to contract out the closure activities and certify that the constructed cap met all applicable solid waste regulations imposed by the Missouri Department of Natural Resources and the approved closure plan for the facility.

**Butler County Sanitary Landfill; Butler County, Missouri.** Project engineer for the vertical and horizontal extension of the Butler County Sanitary Landfill in Missouri. The project included modifying the landfill's solid waste disposal permit to include an expansion to the existing landfill and redesigning the remaining permitted area to comply with state and federal RCRA Subtitle D regulations. Mr. Doerr was responsible for preparing the engineering report, including closure and post-closure plans and cost estimates.

**Sanitary Landfill; Grand Forks, North Dakota.** Project engineer for the permitting and design of a municipal solid waste disposal facility for the City of Grand Forks, North Dakota. The site is currently involved with site selection activities and permitting through the North Dakota Department of Health (NDDH). Presently, pre-application packages, as required by the NDDH, have been prepared and submitted for four potential sites northwest of the city. Complete permit applications and design packages will be prepared once the final site is selected.

**Show-Me Landfill; Warrensburg, Missouri – Republic Services, Inc.** Project manager for the redesign of the Show-Me Landfill located near Warrensburg, Missouri. The project included performing additional hydrogeologic investigations to further define the underlying groundwater conditions at the site and redesigning the original landfill to increase its vertical extent. Throughout the project, the MDNR was intimately involved and coordinated with on a regular basis. The final design included raising the floor of the Subtitle D landfill to create separation from the uppermost aquifer, adjusting the originally permitted landfill footprint for operational purposes, and vertically expanding the landfill to provide an additional 2,000,000 cubic yards of disposal capacity.

**Tier 2 Landfill Gas Analysis and Reporting, Oak Grove Landfill; Arcadia, Kansas.** Directed the field activities, analysis, modeling, and reporting associated with the Tier 2 testing that took place at this landfill near Arcadia, Kansas. The project utilized SCS's track-mounted Geoprobe® to extract gas samples from approximately 25 acres of the landfill for quantification of nonmethane organic compounds (NMOCs). The resulting data was used to model the landfill's NMOC emissions and maintain compliance with New Source Performance Standards (NSPS). The results of the Tier 2 analysis indicated that the facility was required to install a gas system in accordance with NSPS requirements. The facility chose to contract with SCS to design and permit an active gas extraction system.

**Tier 2 Landfill Gas Analysis and Reporting, Springfield Sanitary Landfill; Springfield, Missouri.** Principal-in-charge for the Tier 2 testing and reporting for the Springfield Sanitary Landfill in 2006. For this project, a request for an alternative Tier 2 sampling protocol was submitted to the EPA Region 7 and subsequently approved due to the presence of an active gas collection system utilized for migration and utilization purposes. The alternate approach allowed sample collection to occur from a gas header pipe in the system. The resulting data was used to model the landfill's NMOC emissions and maintain compliance with New Source Performance Standards (NSPS). The results of the Tier 2 analysis indicated that the facility was below the 50 Mg/year NMOC threshold.

**Tier 2 Landfill Gas Analysis and Reporting, Black Oak Landfill; Hartville, Missouri.** Principal-in-charge for Tier 2 testing that took place at this landfill facility in south central Missouri. SCS's track-mounted Geoprobe® was used to extract 18 gas samples from the Subtitle D portion of the landfill while 14 additional samples were collected from existing gas vents on the non-Subtitle D portion of the landfill. Samples were collected via Summa canister and shipped to a licensed laboratory for appropriate analysis. The resulting data was used with USEPA's LandGEM model to calculate NMOC emissions for the site. A final report was prepared and submitted to the Missouri Department of Natural Resources.

**Closed Private Landfill Gas Utilization; Kansas City, Missouri.** Currently, Mr. Doerr serves as the principal-in-charge for providing turnkey design/construction services for the construction of the infrastructure required to transport landfill gas from two closed MSW landfills in the Kansas City metro area to an adjacent cement manufacturing plant. The cement plant will utilize the landfill gas in its on-site boiler to heat the cement in the kiln. The project consists of three phases. Phase One of the project is a feasibility study to analyze the economic implications of using landfill gas in the cement manufacturing process. Phase Two includes the design of the landfill gas transport system, and Phase Three is the construction of the transport and fuel retrofit system.



**Closed Private Landfill; Wichita, Kansas.** Principal-in-charge of providing this closed Kansas landfill with assistance regarding their groundwater compliance issues and monitoring network maintenance. The facility located in the Wichita, Kansas area has required extensive investigation and refurbishment of its groundwater monitoring well network as well as its active treatment wells. In addition, the project included downhole, video logging of several of the monitoring wells to further identify occlusion problems and obstructed well screens. The ultimate solution for this site was to replace several of the aging monitoring wells in the same boreholes that were originally drilled to maintain consistent well characteristics.

**Landfill Regrading; City of Kansas City, Missouri.** Project Engineer in charge of regrading the Round Grove Creek Landfill to promote surface water runoff and reduce infiltration. The intent of the project was to reduce liquid infiltration into the landfill to ultimately reduce leachate production and subsequent seepage at the base of the landfill near the adjacent creek. The project consisted of adding soil to the top of the landfill and minimizing any cut into the surface to avoid excavation into solid waste. Final slopes were designed at a minimum of 5 percent to promote surface drainage. The design also accounted for the stabilization of the adjacent creek bank to minimize the potential for erosion during heavy storm events. Stormwater modeling was completed to determine the effect of the regrading and to satisfy Corps of Engineer 404 permit requirements. Plans and specifications were also prepared as part of this project.

### **Solid Waste Facilities**

**Maintenance Building Design; Lawton, Oklahoma Sanitary Landfill.** Project manager for the design of a full-service maintenance building to serve the sanitary landfill site and its equipment fleet. The facility included service bays, an office area, locker rooms, and a lube/oil facility. Ancillary facilities included a heavy equipment wash pad, truck scales, a septic system, and a wastewater lagoon.

**Solid Waste Baling Facility; Grand Forks, North Dakota.** Project manager for the permitting and design of a solid waste baling facility. This project included an initial economic analysis to determine the financial feasibility of constructing a baling facility to process waste for hauling it to a new Subtitle D landfill. Once the project was determined to be feasible, Mr. Doerr directed the permitting and design efforts for a 450-ton-per-day facility. The project was unique due to the long-term settlement problems caused by the consolidation of the underlying lake deposit soil materials. The consolidation was avoided by using a lightweight structural geofoam as the basis for the foundation design.

**Solid Waste Processing/Disposal – U.S. Naval Station Roosevelt Roads.** Solid waste project engineer for the design of a multipurpose facility at the Roosevelt Roads Naval Station in Puerto Rico. Mr. Doerr was responsible for evaluating potential solid waste processing equipment and designing the facility around the most efficient and cost-effective options. The design included a materials recovery facility/transfer station (MRF/TS), a maintenance building, a control building/scale house, and a landfill. The MRF/TS was designed to process all municipal solid waste generated at the base and recover various recyclable materials. It included a conveyor system/sorting line to manually remove recyclables from the waste stream, a magnetic separator, a bag breaker, and a horizontal baler to prepare the recovered materials for off-site shipping. The maintenance building included an autoclave system to sterilize garbage from ships and aircraft originating in foreign countries. The landfill was a vertical expansion of an existing landfill and included a yard waste composting facility.

**Material Recovery Facility Design; City of University City, Missouri.** Project engineer for the design and siting of a centralized materials recovery facility (MRF) to process commingled recyclable materials. Mr. Doerr was responsible for evaluating the feasibility of different processing options

and their constructability at University City's existing solid waste transfer station. Specific processing equipment was selected based on the materials to be processed and the physical limitations of the existing building. Special attention was given during the design to ensure that the existing solid waste transfer operations were not disrupted. The final design provided for the receiving of materials on the top floor of the transfer station and conveying it down to a sorting line on the first floor to be processed.

**Solid Waste Composting Facility – Private Entity.** Project engineer in the conceptual design of a full-stream municipal solid waste composting facility. This design included a materials recovery facility capable of recovering and processing plastics, aluminum, ferrous metals, glass, and corrugated cardboard. The design called for residual MSW to be processed through a mill grinder and transported to a composting floor.

**HHW/CESQG Facility Siting Analysis, Lincoln-Lancaster County Health Department (LLCHD), Lincoln, Nebraska.** Project Manager for the completion of a Facility Siting Analysis (FSA) to potentially co-locate a Household Hazardous Waste/Conditionally Exempt Small Quantity Generator (HHW/CESQG) facility at the City's existing North 48<sup>th</sup> Street Transfer Station Complex. The FSA was completed to analyze the technical, physical, and operational characteristics and limitations of the proposed site. As the project progressed, it became apparent that "fatal flaws" were not present at the site and the development of the facility was feasible. In addition to the analysis, multiple location options were reviewed from a technical and cost perspective in an attempt to identify an ideal facility location on the site. The SCS team also facilitated a ½-day workshop with City staff and other community stakeholders to educate the group with regard to common facility design approaches, national trends, and conceptual design development.

**Wichita Area Transfer Station; Sedgwick County, Kansas.** Project manager for the permitting, design, and construction of a 500-ton-per-day MSW transfer station to serve the Wichita metropolitan area. The project included rezoning of the transfer station site and issuance of a conditional use permit from Sedgwick County. Additionally, coordination with the Kansas Department of Health and Environment (KDHE) was required to obtain an operating permit for the facility. The final design consisted of a grade-separated 4-bay transfer station with a single waste transfer pit. The facility was designed to accommodate the future expansion of the tipping floor as well as an additional waste transfer pit.

**Transfer Station; Independence, Missouri – Republic Services, Inc.** Project engineer responsible for preparing an application and report to obtain a permit to construct and operate a solid waste processing facility, including preparing preliminary building and site layouts, obtaining pertinent information necessary for the permit application, and preparing a report and permit drawings. He also performed a traffic study necessary for evaluating the facility's effects on local traffic patterns.

**Joplin Transfer Station; Joplin, Missouri – Waste Corporation of Missouri, Inc.** Project manager for the conversion of a compactor-type transfer station into a top-loading trailer facility. The project was expedited due to the breakdown of one of the facility's waste compactors which essentially shut down the operation. Immediate communication with the MDNR allowed the facility to temporarily convert its operation to a top-loading trailer facility while a redesign and permit modification was completed. Technical features of the project included the structural design of a new push wall system and the filling of several in-floor pits to expand the tipping floor.

**Central Missouri Landfill Transfer Station; Sedalia, Missouri – Waste Corporation of Missouri, Inc.** Project manager for the design and permitting of a solid waste transfer station located at an existing landfill near Sedalia, Missouri. The transfer station was designed to serve as a temporary facility for diverting waste from the existing landfill to other regional landfills as the site awaited approval of the

landfill's horizontal expansion. The project was expedited such that the landfill would not be filled to capacity prior to receiving the expansion approval. The entire process of designing, permitting, and constructing the new transfer station took less than 12 months.

**Transfer Station; Doolittle, Missouri – Private Owner.** Project Manager for the design, permitting, and construction of a solid waste transfer station in southern Missouri. The project consisted of the design of all civil, structural, mechanical, and electrical features of the facility. Permitting was completed with the Missouri Department of Natural Resources and was one of the first projects in Missouri to utilize the Public Participation program for permitting.

**Solid Waste Transfer Station; City of Claremore, Oklahoma.** Project Manager for a four-phase project to provide the City of Claremore with a solid waste transfer station. The four phases include feasibility study, permitting, design, and construction services. Currently, the project is in the feasibility phase of the project to quantify the economic and siting variables of the project. If constructed, the transfer station will serve the City of Claremore and the surrounding areas.

**Transfer Station; Harrisonville, Missouri – Republic Services.** Assisted in preparing an addendum to the facility's permit to construct and operate a solid waste processing facility. Coordinated the preparation of as-built drawings for the facility that were submitted as part of state requirements for solid waste processing facilities.

**Transfer Station Modification – USA Waste Services, Inc.** Project manager for the design modification to a transfer station located in Chillicothe, Missouri. The project consisted of preparing a design/operational report and associated drawings required to obtain a permit modification from the Missouri Department of Natural Resources. The original permit was issued for a small facility capable of handling approximately 20 tons of municipal solid waste per day. The modification included upgrading the facility to handle 100 tons per day.

**Pitkin County Solid Waste Disposal Center, Pitkin County, Colorado.** Principal in Charge for several projects completed for Pitkin County. SCS was retained by Pitkin County to perform an evaluation of the County's existing household hazardous waste (HHW) facility and to develop a conceptual design and budgetary cost estimate of a new HHW facility to be located at the Pitkin County Landfill. SCS performed a site visit to evaluate the current operations, estimated projected material quantities based on tipping receipts, prepared a conceptual site plan for the new HHW Facility and reconfiguration of the current citizen drop-off facility, and prepared budgetary cost estimates for the design and construction of the new HHW and citizen drop-off facilities. The County is currently planning to implement the HHW facility design/layout by repurposing the existing on-site MRF and modifying the building to be compliant with code requirements for this higher-level facility.

## **Solid Waste Studies**

**Kansas State Solid Waste Plan – State of Kansas.** Mr. Doerr was a member of the project team that developed the statewide solid waste plan for the state of Kansas. Mr. Doerr was responsible for researching various data sources and compiling solid waste background data for all 105 counties in Kansas. Throughout the research, all data was entered into a database that he developed specifically for this project. The completed database was used to generate queries and reports for client review and verification as well as for use in the final solid waste plan.

**Pitkin County Solid Waste Disposal Center, Pitkin County, Colorado.** Mr. Doerr provided quality control oversight for several projects completed for Pitkin County. One of the projects consisted of a feasibility study to identify and recommend different disposal options available for domestic septage that the facility accepted. The study addressed five different disposal options, evaluated the



advantages and disadvantages of each option, and recommended which disposal options were appropriate for Pitkin County. Additionally, Mr. Doerr provided senior-level consulting for a proposed water line extension to supply potable water to the site.

**On-Site Leachate Treatment Study; Springfield Sanitary Landfill, Springfield, Missouri.** Project director for various projects completed for the City's solid waste landfill, including an on-site leachate treatment study. The intent of the project was to identify various, economically feasible options for the treatment and/or disposal of the site's leachate. Options that were reviewed included evaporation through the site's gas collection and control system; phyto-treatment (i.e., wetlands/poplar tree farm); land application; and package plant treatment and discharge. The project is currently in progress with the goal being to attain one or more options for the City to manage approximately 10 million gallons of leachate per year.

**Solid Waste Management Planning; Wichita, Kansas.** Assisted in a project for the City of Wichita, Kansas that included an evaluation of solid waste alternatives for the City. Mr. Doerr assisted in the evaluation of constructing and operating a new local landfill and constructing a transfer station to transport waste to a remote landfill. His contributions to the project included an economic evaluation of the options based on engineering cost estimates for the landfill and actual proposed costs for several transfer station options. Required tipping fees were calculated for each option to allow for further analysis and cost comparisons. Fees were also projected for varying quantities of waste as well as varying operator contract periods.

**Waste Minimization Plan; Kansas City, Missouri – Trans World Airlines' Ground Operations Center.** Assisted with the development of a waste minimization plan for Trans World Airlines' ground operations center. His responsibilities included the tracking and quantitation of past waste streams and previous waste minimization efforts.

Mr. Doerr played a key role in the compilation of applicable environmental reporting requirements for seven of Trans World Airlines' ground operations centers. This project required intense research and review of pertinent federal, state, and local regulatory documents for all environmental reporting requirements that applied to the client's facilities. He also prepared an overview of federal acts and laws of the present environmental regulations.

**Bioreactor Feasibility Study, Columbia Sanitary Landfill; Columbia, Missouri.** Solid Waste Consultant for a feasibility study to address the viability of developing the existing City landfill as a bioreactor. The study included an analysis of anticipated capital and operating costs as well as revenues generated from utilizing the increased methane gas production. The final report discussed pertinent regulatory and design components of the projects, development timeframe, and included pro forma financials to identify economic impacts of the project. The City ultimately based its decision to proceed with a bioreactor permitting and design project on the results of this study.

## Electric Utilities

**CCR Impoundment Closure, Blue Valley Power Station, Independence Power & Light.** Project Director for a project that included the closure of two fly ash and one bottom ash impoundment at the BVPS. The project included conceptual planning, closure design, contract and construction management, and compliance with the federal CCR Rule. The planning component of the project included analysis of various design and construction approaches to allow for efficient and cost-effective closure execution as well as approaches to ensure compliance with the new rules. The project also included the permitting and design of a wastewater settling basin that was constructed in a portion of the former bottom ash impoundment that underwent "clean closure". The unique design and bidding

approach saved the client thousands of dollars in construction while SCS came in under budget as well.

**CCR Landfill Closure, North Omaha Power Station, Omaha Public Power District.** Project Director and Certifying Engineer for the partial closure of the station's CCR Landfill. The project included the design of the final cover system for approximately 5 acres of side slope of the disposal area. A modification to the facility's state permit was required and received on an expedited basis so that construction could commence as soon as possible. Overall project tasks included the preparation of design drawings, technical specifications and bid documents; bidding assistance; construction management and contract administration; and construction quality assurance services. In addition to closing a portion of the CCR landfill, the project incorporated the cleanout of a settling pond and run-on/run-off system upgrades. Challenges during this project included designing and constructing the final cover system up against the facility property line and addressing an unknown water line that ran beneath the landfill that was discovered during construction.

**CCR Impoundment Closure Alternative Cover Design Peer Review, Central Illinois Coal-Fired Power Plant, Confidential Client.** SCS completed a project for a confidential utility client in Illinois to provide a peer review of an alternative final cover system design for one of their active CCR impoundments. Project Director for the peer review that included a review of a "closure turf" type cover system and an exposed geomembrane cover system. SCS reviewed all facets of the two designs but paid particular attention to slope stability, wind uplift, and stormwater design components of the systems. A final report was provided to the client that summarized findings and provided recommendations to improve both alternatives.

**Sibley Fly Ash Landfill, Sibley, Missouri – Kansas City Power & Light.** Mr. Doerr served as Principal in Charge for the Phase V Fly Ash Landfill construction project at this site. The project included the preparation of plans and specifications for the fly ash pond clean-out and landfilling project; bid coordination; construction management and oversight; and final cover construction quality assurance. It was apparent at the conclusion of Phase V that the landfill was nearing full design capacity and additional space was required. Therefore, following the completion of the Phase V project, the team assisted Aquila in selecting the location for a new fly ash landfill. Two sites were evaluated and coordination with the MDNR-DGLS took place to complete the Preliminary Site Investigation (PSI) for both sites. Conceptual design and volume estimates were completed, and a recommendation for the most beneficial site was made to KCP&L.

**Groundwater Monitoring and Reporting - Kansas City Power & Light, Kansas and Missouri Facilities.** Mr. Doerr has served as the project director for groundwater sampling, analysis, and reporting at KCP&L's Iatan, Montrose, and Sibley power generating stations. SCS has assisted the client with developing a strategic compliance approach and the associated documents to address groundwater requirements of the CCR Rule. Tasks have included groundwater sampling and laboratory coordination, data validation, statistical analysis, and reporting.

**CCR Rule Compliance - Kansas City Power & Light, Kansas and Missouri Facilities.** Significant work was completed in an effort to respond to the federal CCR Rule and its associated compliance requirements and deadlines. Mr. Doerr was the project director for several compliance projects for four separate generating stations in the Kansas City area. Projects included Hazard Potential Assessments, various location restriction demonstrations, and annual inspection reporting. SCS was instrumental in allowing the client to become compliant with the new rule for all nine units across the four stations.

**CCR Surface Seep Investigation/Remedial Action, Tecumseh Energy Center.** Project Director for a surface seep investigation and remedial action project at Westar Energy's Tecumseh Energy Center

near Topeka, Kansas. The project included the completion of an investigation to identify the source of surface seeps that were originating adjacent to and downgradient of the site's CCR landfill. SCS completed an initial "desk review" of available information to provide insight into potential causes of the seep and to define the subsurface conditions at the site. SCS completed an intrusive investigation program including boring and piezometer installation, surface water sampling, waste sampling/characterization, groundwater sampling, and ongoing surface and subsurface water elevation measurements to develop a hydrogeologic model of the area. Upon completion of the investigation, a hydrogeologic model was developed for the immediate vicinity of the landfill to identify groundwater flow pathways and the most likely source of the seeps. Laboratory testing indicated some correlation between the surface water and waste chemical makeups; thus, potential impacts may be present. Mitigation options were developed for the site should it be determined that such actions be taken. Mr. Doerr has served as the client's main point of contact and liaison with the Kansas Department of Health and Environment for the duration of the project to ensure its success.

**Construction Quality Assurance, James River Power Station.** Served as a construction quality assurance (CQA) officer for the installation of a flexible membrane liner at the James River Power Station near Springfield, Missouri. During the project, he was responsible for observing and documenting the placement of the geomembrane liner and the accompanying preparation and seaming procedures. In his documentation, he recorded all pertinent installation information; including geomembrane roll number, panel number, seamer, and any possible deficiencies.

**CCR Rule Compliance, Ames Municipal Electric System, Ames, Iowa.** Project Director for several compliance projects for the City of Ames, Iowa's power plant. Projects included the initial liner evaluation report, initial hazard potential classification assessment, structural stability assessment, factor of safety assessment, the inflow design flood control system plan, and annual inspection report. SCS also assisted the City with evaluating compliance strategies for groundwater monitoring compliance. As a result, SCS developed a groundwater monitoring system work plan and subsequently implemented it to install a new monitoring system at the plant. A sampling and analysis plan and statistical analysis methodology plan were also developed. SCS maintained or exceeded an aggressive implementation timeline for all projects and assisted the City in gaining compliance with the CCR Rule.

**CCR Landfill Closure Alternative Cover Design, Central Illinois Coal-Fired Power Plant, Confidential Client.** SCS completed a project for a confidential utility client in Illinois to design an alternative final cover system for a portion of one of their CCR landfills. Mr. Doerr is serving as the Principal in Charge for the alternative closure design that included the use of a "closure turf" type liner product to replace a portion of the originally permitted compacted soil portion of the approved capping system. The project was planned to be completed as a Research, Development, and Demonstration (RD&D) permitted project to provide a basis for potential future use of the design as a permanent full-site closure option. Performance of the alternative cover system will be monitored and documented as required by RD&D requirements and appropriate reporting will be completed for submittal to the IEPA.

**Cement Kiln Dust Monofill; Louisville, Nebraska – Ash Grove Cement Company.** Mr. Doerr served as project manager for the environmental compliance and hydrogeologic investigation at Ash Grove's Louisville, Nebraska and Chanute, Kansas facilities. Environmental compliance consisted of providing groundwater monitoring services for the existing Cement Kiln Dust (CKD) landfill and revising the site's sampling and analysis plan (SAP). The hydrogeologic investigation was completed at Ash Grove's Louisville, Nebraska facility as part of its efforts to close an existing CKD waste pile in place. The investigation included defining the uppermost aquifer and determining if the CKD pile had adversely affected the groundwater. The successful investigation ultimately led to approval for

the waste pile to be closed in place and subsequently saved Ash Grove several million dollars in capital costs.

**Sludge Pond Closure – Murphy Oil USA.** Project engineer for the closure of two sludge ponds located at the Murphy Oil Refinery in Superior, Wisconsin. The project consisted of designing a composite cap according to Wisconsin regulations for the two ponds which contained approximately 20,000 tons of petroleum-based refinery sludge. Prior to selecting a composite cap that consisted of 40 mil HDPE geomembrane overlain with 2 feet of compacted clay ( $1 \times 10^{-7}$  cm/sec), various other equivalent options were considered. Closure and post-closure plans were also developed in addition to construction drawings and specifications used for bidding and construction purposes.

**Stability and Seepage Evaluation, Blue Valley Power Station, Independence Power & Light.** Project Director for the evaluation of stability, seismic, and seepage characteristics of the coal-fired power plant's fly and bottom ash ponds located adjacent to the plant near Independence, Missouri. The evaluation was completed in response to the EPA's request for additional characterization and evaluation of the existing earthen pond embankments. In addition, a number of wet areas within a stormwater drainage ditch adjacent to the toe of the North Fly Ash Pond embankment were evaluated. The evaluation included the advancement of multiple Geoprobe borings for soil logging, sampling, and electric conductivity readings. Six nested piezometers were also installed to document the groundwater piezometric surface. Upon completion of field and lab activities, the resulting data was used to model the earthen embankments and ultimately determine that the embankment systems were stable, thus satisfying the EPA's requirements.

**Hazard Potential Assessments, Sibley and LaCygne Power Stations, Kansas.** Due to the Coal Combustion Residual (CCR) Final Rule that impacted coal-fired power plants nationwide, many utility owners struggled to meet regulatory deadlines. Kansas City Power & Light (KCP&L) was one of many utilities that met the challenge of applying the CCR Rule to multiple plants. One specific need that turned into a time-sensitive project was that of preparing Hazard Potential Assessments for two of KCP&L's power plants. Mr. Doerr was well-versed with the CCR Rule and, in particular, the section of the Rule that dealt with Hazard Potential Assessments. He in turn coordinated with a team of experts to review appropriate documentation, inspect multiple CCR impoundments at each facility, and prepare the assessment reports while ensuring compliance with the Rule. The projects were able to go from start to finish within a matter of weeks and KCP&L was able to comply with the strict compliance deadlines.

**East Point Waste Facility; Ashtabula, Ohio – Centerior Service Company.** Project engineer for Centerior Service Company's East Point waste facility near Ashtabula, Ohio. His responsibilities included reviewing Ohio's residual solid waste regulations and assisting in the preparation of the engineering report and design of a landfill that will accept ash and scrubber sludge. His design responsibilities included modeling leachate production using the Hydrogeologic Evaluation of Landfill Performance (HELP) model to size the leachate collection and disposal system. Mr. Doerr also was responsible for preparing a leachate monitoring plan, final closure and post-closure plans, and assisting in the characterization of the waste streams to be disposed.

## Environmental Services

**Storm Water Pollution Prevention – Scott Tie Company.** Mr. Doerr served as a project engineer on a project for the Scott Tie Company in southeast Missouri. The project consisted of preparing a stormwater pollution prevention plan and a spill control and countermeasure plan for the railroad tie treatment facility. The facility, which manufactures railroad ties from raw lumber and treats them with creosote to serve as a preservation agent, includes fuel tanks, creosote holding tanks, treatment pressure vessels, creosote transfer areas, and finished product storage areas. In addition

to preparing the SWPPP and SPCC plans, Mr. Doerr assisted in taking samples from the water hydrants at the facility.

**Storm Water Management – Hewlett Packard, San Diego Facility.** Project engineer for various stormwater management tasks at Hewlett Packard's San Diego, California production facility. Mr. Doerr reviewed various construction and as-built drawings for all facility storm sewer, sanitary sewer, and process piping in an attempt to locate unknown combined sewers. He also conducted several dye tests to verify questionable pipe locations and critical process effluent flows. All information collected from on-site investigations was used to revise the facility's existing stormwater pollution prevention plan.

**Storm Water Pollution Prevention Plan – Enogex, Inc.** Responsible for the development of stormwater pollution prevention plans (SWPPPs) for numerous sites across the country. Sites ranged from industrial facilities to landfill facilities. One plan that was rather unique was developed for Enogex, Inc. of Oklahoma. This SWPPP was developed for the construction of natural gas pipeline installation and the construction associated with these projects. The plan was written to perform as a generic plan that could be used for numerous locations at the client's discretion.

**Storm Water Management – Ash Grove Cement Company.** Project Manager for the completion of as-constructed record drawings for various stormwater management structures that were completed at Ash Grove's Louisville, Nebraska plant. Included in the project was field verification of the completed structures and preparation of record drawings to comply with the Nebraska Department of Environmental Quality's directives.

**Cement Kiln Dust Monofill; Louisville, Nebraska – Ash Grove Cement Company.** Mr. Doerr served as project manager for the environmental compliance and hydrogeologic investigation at Ash Grove's Louisville, Nebraska and Chanute, Kansas facilities. Environmental compliance consisted of providing groundwater monitoring services for the existing Cement Kiln Dust (CKD) landfill and revising the site's sampling and analysis plan (SAP). The hydrogeologic investigation was completed at Ash Grove's Louisville, Nebraska facility as part of its efforts to close an existing CKD waste pile in place. The investigation included defining the uppermost aquifer and determining if the CKD pile had adversely affected the groundwater. The successful investigation ultimately led to approval for the waste pile to be closed in place and subsequently saved Ash Grove several million dollars in capital costs.

**Toxic Release Inventory – Scott Tie Company.** Mr. Doerr was responsible for compiling and reporting the railroad tie treatment facility's toxic chemical releases under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). The project involved reporting the amounts of creosote that the facility released, recovered, recycled, or treated yearly. Mr. Doerr prepared the proper forms and submitted them on behalf of the client to the EPCRA Reporting Center.

**Facility Response Plans; Oklahoma – Oklahoma Gas & Electric Company.** Due to the Oil Pollution Act, Mr. Doerr was able to assist with the preparation of facility response plans for the Oklahoma Gas & Electric Company. His responsibilities included gathering site-specific information for four facilities throughout Oklahoma and determining emergency procedures during oil spill situations.

**Remedial Investigation; Oklahoma – Air Force Base.** Assisted with a remedial investigation for an Air Force base in Oklahoma. For this project, Mr. Doerr compiled groundwater and soil sampling data, aided in the analysis of the data, and helped prepare contaminant level isopach maps for the site.

**Environmental Permitting/Compliance, Soybean Processing and Biodiesel Facility, Eve, Missouri.** Principal in Charge of multifaceted permitting and compliance projects for Prairie Pride, Inc. (PPI),



which operates a 2,000 tons per day soybean oil extraction facility with an integrated 30 million gallons per year biodiesel production facility located near Eve, Missouri. Projects initiated during the planning stages of the facility included the preparation of all environmental permits and associated plans and programs. Several of these tasks required revisions due to design changes as the project evolved. The project team successfully negotiated through these processes while working closely with the Missouri Department of Natural Resources (MDNR) to keep the project on schedule. Major tasks that were completed for PPI include the following.

- Air construction permitting, including dispersion modeling
- NPDES permitting for plant construction (land disturbance)
- Construction permitting for on-site wastewater treatment
- Construction oversight and certification of on-site wastewater treatment system
- Industrial wastewater and stormwater discharge permitting
- Spill Prevention Control and Countermeasures (SPCC) plan
- Facility Response Plan (FRP)

**Multi-Site Phase I ESAs – EOS Petro, Inc.** Principal in Charge for a fast-track project that consisted of performing Phase I Environmental Site Assessments (ESAs) on 85 separate oil and gas lease properties in the Illinois Basin of southern Illinois. The scope of services was completed in general conformance with ASTM standards and included site visits, environmental database and records reviews, property owner interviews, and preparation of a final report summarizing the findings. The project was completed within a 75-day window to accommodate project financing schedules.

**Tier One Environmental Record Review, City of St. Joseph, Missouri.** As part of ongoing services to the City of St. Joseph, served as the Project Director to complete a Tier One Environmental Review Record (ERR) for a three-census tract-wide area within the city limits. The assessment was required because the City was a selected recipient of Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD), administered by the Missouri Department of Economic Development. Resources evaluated for the entire study area, and potential impacts evaluated, included air and water resources, biological resources (wetlands, threatened and endangered species, protected resources), socioeconomic resources, land use, farmland, cultural and/or historical resources, air traffic zones, and others. The ERR described elements that could be affected by the proposed actions and highlighted resources that would need to be specifically assessed in a Tier Two Review upon identification of the properties for which the CDBG funds will be utilized. The project employed the use of Geographic Information Systems to plot resources of concern relative to sensitive areas and local features. The project was approved and funds were released to the City following the submittal of the ERR.

**Environmental Assessment and Remediation, Williams Pipeline Company.** Mr. Doerr served as Principal in Charge of multiple projects that provided a broad range of environmental engineering assessment investigative and remedial system design and implementation services. These services were provided across the Williams Pipeline geographic territory, including Minnesota, Nebraska, Kansas, and Oklahoma. Services included quick response assessment of pipeline releases, requiring an immediate assessment of the problem by which risk posed to the public health and the environment was quickly determined. In certain instances, prompt remedial action was required to minimize the release on public health and the environment, resulting in remedial system design and construction.

**Brownfields Voluntary Cleanup, State of Missouri.** SCS was awarded a contract with the State of Missouri to provide Phase I and Phase II Environmental Assessment Services for various state, federal, and local agencies throughout the State of Missouri. Mr. Doerr serves as Principal in Charge

for projects completed under this contract; to date, over 35 Phase I Environmental Site Assessments (Phase I ESAs) at former industrial facilities such as glass manufacturing plants, former government facilities such as NIKE missile bases, and military hospitals, undeveloped properties, former schools, and former residential and commercial properties. In addition, SCS staff has conducted Phase II Environmental Site Assessments (Phase II ESAs) of more than 10 properties based on the recognized environmental conditions (RECs) identified in the Phase I ESAs. Properties have included sites contaminated with heavy metals, hazardous solvents and chemicals, and gasoline and diesel contamination related to previous property uses as service stations former foundries, and properties impacted by historic regional activities. SCS prepared detailed work plans for each Phase II ESA which was submitted to the MDNR-BVCP for approval prior to the sampling and analysis for each site. The Phase II ESAs have been conducted in accordance with the generic MDNR Quality Assurance Project Plan (QAPP) for Brownfield Assessments. The QAPP includes requirements for sampling methods, sampling analysis, and site-specific health and safety plans.

**BVCP Remediation, Former Odessa Market Site, Kansas City, Missouri.** Principal in Charge for a remedial action project that followed up Phase I and II ESAs for a former neighborhood grocery store. The project included the preparation of a Risk Management Plan (RMP) and Quality Assurance Project Plan (QAPP) describing the proposed remedial action plan, including soil pre-excavation screening activities, excavation, post-excavation confirmation sampling, excavation backfill, and impacted soil disposal activities. Execution of the remedial plan included the use of XRF screening for various contaminants, Geoprobe investigation to collect soil and groundwater samples, and the installation of temporary and permanent groundwater wells. The site was excavated to remove documented soil contamination and a groundwater monitoring program was developed and implanted to comply with Missouri Department of Natural Resources Brownfields/Voluntary Cleanup Program (MDNR-B/VCP) directives.

## Presentations

**2017 - Environmental Technical Conference** by Air & Waste Management Association; “CCR Improvement Closure” presented by Doug Doerr – Overland Park, KS

**2017 Annual Environmental Conference** by Missouri Waste Control Coalition; “Minimize Your Leachate, Maximize Your Money!” presented by Doug Doerr - Lake Ozark, MO

**2019 Annual Environmental Conference** by Missouri Waste Control Coalition; “A Balancing Act - The Many Requirements at a Modern Landfill” presented by Doug Doerr - Lake Ozark, MO

**2021 - Annual Environmental Conference** by Missouri Waste Control Coalition; “An Uncommon Approach to Landfill Emissions Control” presented by Doug Doerr – Lake Ozark, MO