

Managing Industrial Liquids

Landfills and Waste Management
Food Processing
Construction Dewatering
Oil and Gas Operations
Power Plants and Utilities
Mining Operations
Military Facilities

SCS ENGINEERS

Environmental Consultants and Contractors



SCS Engineers' professionals provide environmentally responsible solutions that meet your schedule, budget, and help you minimize risks.



Our specialized technical teams offer wastewater treatment and disposal engineering and services to treat industrial waste liquids to meet environmental parameters. We use proven, leading-edge technologies and work with you to design efficient ways to treat leachate-produced water, industrial wastewaters, high-strength wastewaters, and mixed waste streams.



Managing landfill leachate and industrial wastewater is increasingly challenging and costly. In some cases, publicly owned treatment works (POTWs) are required to impose limitations on liquids received at their facilities, resulting in increased charges, or the POTW could refuse to permit or process the wastewater altogether. These developments are due in part to stringent regulations and the shift to new technology that has limited ability to accept higher strength industrial wastewaters. As a result, many industrial facilities and landfill operators are facing higher costs and fewer options for disposal.

We adopt your issues as our own as we work together to address the financial, technical, and regulatory challenges.

SCS Engineers' professional staff will work side-by-side with you through each step of the initial fact-finding process to make sure that your needs are discussed and your desired outcomes are clear. We will then execute the technical scope with your needs and outcomes as the foundation of our work, be it a deep injection well, dewatering treatment system, industrial pre-treatment solution, or landfill leachate design-build. Regular and concise communication throughout the project is a key element of our approach.

Landfill Leachate Reduction, Integrated Design-Build and OM&M

The Monarch Hill Landfill is 525- acres with a waste intake flow of 5,000 tons per day. Waste Management, Inc. hired SCS to provide stormwater management, reduce leachate formation, and design, permit and construct their leachate management conveyance system to a POTW. SCS designed and provided monitoring services during installation of a 10-acre temporary geomembrane cap over a portion of the top intermediate plateau of the landfill. The cap reduces leachate generation, decreases odors, increases gas collection efficiencies, and addresses leachate seeps on the slope. The cap facilitates the handling of surface water runoff over the top of the landfill. Final covers are equipped with leachate toe drain systems below the final cover geomembrane, enabling leachate seeps to be collected then disposed of effectively. The design allows gas collection from the lower portion of the slope. Rainwater toe drain systems above the final cover geomembrane

enable water to be collected and diverted to the landfill perimeter ditches, preventing pore pressure build up and keeping the system stable. Tack-on swales catch runoff and convey water to down-chute pipes. They can be adjusted easily based on the size of each partial closure and the overall management of stormwater.

SCS completed a leachate management conveyance system that pumps to a POTW a few miles south of the landfill, through dedicated buried 8-inch pipe. Special booster pump stations on site provide additional pressure. The landfill accepts sludge from the POTW, which offsets the costs of leachate disposal. High moisture content sludge is mixed with incoming waste to assist with the stability of the landfill slope. Leachate from an existing closed ash monofill is handled separately, before being mixed with leachate from the rest of the landfill, and then it enters the off-site force main to

the POTW. Liquids from gas wells are stored in tanks to settle suspended solids before the liquid pushes into the leachate force main. Condensate collected from the gas system is placed directly in the leachate force main.

We provided a stormwater management system for the entire facility that accommodates the growing landfill footprint. The system includes stormwater drainage perimeter ditches that are classified as dry detention systems connected to a wet detention pond. The permitting agency allows infiltration of stormwater through the detention system, into the underlying aquifer. This was incorporated in the stormwater modeling for storm periods, and percolation is allowed after a storm.

SCS continues to provide OM&M and compliance reporting, sampling, and laboratory analysis.



Landfill Leachate Management and Containment

Hillsborough County needed a long-term plan for managing leachate at the Southeast County Landfill. The County wanted to evaluate its options, so it retained SCS to conduct a feasibility study. The analysis included biological, physical, and physicochemical treatment processes and off-site disposal of leachate at a POTW. The County desired to manage leachate on site. The primary constituent of concern was ammonia.

SCS selected an activated carbon treatment process, which included nitrification and denitrification unit processes. The design is based on leachate generation estimates using the USEPA's Hydrologic Landfill Performance Model (HELP) and leachate characterization studies. The system includes a 570,000-gallon

leachate storage tank, a full secondary containment system for treatment and storage vessels, an effluent storage pond, and a 21-acre leachate spray field.

SCS successfully addressed regulatory concerns throughout the project. The state's Department of Environmental Protection instituted stringent spray irrigation limitations on system-based rainfall patterns, so our team adapted the site's leachate management plan to accommodate the limitations. SCS continues to provide operational support for the treatment plant.



Landfill Leachate Treatment Using Reverse Osmosis

New Hanover County had a 50,000-gpd treatment system for landfill leachate. SCS supported the County's treatment system upgrade to meet stricter regulatory standards for surface water discharges, particularly standards relating to arsenic and ammonia.

The SCS project team designed a 75,000-gpd plant, using existing equipment when appropriate, that consistently meets the discharge standards, even during cold weather. The project was fast-tracked to meet the regulatory deadline. SCS enabled the County to meet the new standards by successfully delivering the first RO-equipped leachate treatment plant in North Carolina.

The process included a leachate study to pinpoint the characteristics that could affect the new treatment process, such as high ammonia concentrations (> 700

mg/l) that could inhibit the biological part of the treatment process. The treatment includes a membrane bioreactor with ultrafiltration, followed by RO membranes. The system includes bioreactor tanks for the denitrification process and membranes to separate the biosolids from the treated water.

The team also designed a 3,200-square foot control building and several pumping stations and force mains. This involved preparing a conceptual design and contacting process vendors for preliminary engineering and cost budgeting. SCS also provided the final construction plans, specifications, and construction phase services.

New Hanover County volunteered to be the first landfill to participate in North Carolina Department of Environmental Quality's

(NCDEQ) new landfill leachate sampling protocol in 2019. After learning about landfill leachate as a possible source of PFAS, New Hanover County's Board of Commissioners and landfill management looked at the NCDEQ sampling protocol as an opportunity to be proactive in evaluating the existence of PFAS in leachate and in the treatability for removal of the PFAS.

The County's reverse osmosis (RO) treatment system designed by SCS treats the leachate and recirculates the RO reject water back into the landfill. While NCDEQ's results show PFA compounds in the raw leachate, no detectable levels of the thirty-three PFAS tested for were found in the treated leachate. This confirmed that the system works effectively to protect human health and the environment. New Hanover County continues working with NCDEQ's landfill sampling plan.



All Aboard Florida, Dewatering System

Since joining the project team in 2007, SCS has proven to be an invaluable asset and resource to many of our highest-profile projects.

Jose M. Gonzales, Senior Vice President of Corporate Development, Florida East Coast Industries

MiamiCentral is the Brightline passenger rail connecting Miami and Orlando. During construction, tests revealed elevated concentrations of arsenic in the groundwater, preventing ordinary dewatering methods and delaying construction of the rail station and commercial towers. The groundwater arsenic levels exceeded the allowable limits to directly discharge the extracted groundwater. Facing regulatory requirements and a tight construction schedule, All Aboard Florida, through Florida East Coast Industries, engaged SCS to design a dewatering system; secure required permits; and then construct, operate, and maintain the system.

Within a week SCS had designed, permitted, and mobilized a 1,500-gpm treatment system consisting of four 18-foot-tall treatment vessels containing approximately 50,000 pounds of granular activated alumina. To extend the life of the alumina, SCS included a series of bag filters

on the influent side of the groundwater treatment system.

The system successfully reduced the high levels of arsenic in the groundwater, allowing dewatering for the foundation work to proceed. All Aboard Florida engaged SCS to deliver another system for additional capacity to save more time in the construction schedule and OM&M services.

The extent of groundwater treatment depended in part, on whether the effluent was discharged to surface waters, groundwater, or a deep injection well. SCS has experience with large construction sites where we extract, treat, and discharge high volumes of water. Our team of hydrogeologists, licensed engineers, construction experts, and regulatory professionals provide clear advice based on extensive experience with all aspects of dewatering systems on contaminated sites nationwide.



Wastewater Mercury Removal

A national medical testing laboratory needed to meet the low mercury concentration levels for its local POTW's wastewater discharge permit pre-treatment standard. By not meeting the mercury requirement, the laboratory could not discharge wastewater to the POTW and was forced to contain and haul its wastewater off site for treatment and disposal. This interim solution quickly became a heavy financial burden at more than \$100,000 per month.

The laboratory chose SCS to design and oversee the construction of a wastewater mercury removal pre-treatment system. SCS assessed the wastewater issues, set up data loggers to measure process flows, tested grab and 24-hour composite wastewater samples, conducted and evaluated bench scale pre-treatment testing, and coordinated with POTW staff. SCS also evaluated drain line mercury sampling and pipeline isolation, with specifications prepared for pump-over and in situ pipe liner options.

For mercury in wastewater pre-treatment system design, SCS conducted treatability testing, and prepared engineering design drawings and specifications, including the piping design and wastewater treatment equipment. The team then helped laboratory staff select wastewater pre-treatment filtration and adsorption technologies, resolved bid and construction issues, and conducted pre-treatment system multi-week pilot tests and daily sampling required for POTW approval.

The SCS team worked closely with laboratory staff to characterize the 24/7 ongoing laboratory activities, performing evaluations during nights and weekends to gather the data required to evaluate the laboratory's wastewater generation. Once the characterization was complete, we were able to design the most effective pre-treatment system. The laboratory's pre-treatment system now operates in full compliance, and the laboratory discharges wastewater to the POTW once again.



Wastewater pH Neutralization System Design

Timeliness and personal nature of the services – SCS really seemed concerned for our needs.

James Carroll, CFO, IPM Foods

To maintain the high quality of their soups, IPM Foods has a rigorous process to clean their food processing equipment using high and low pH cleaners, high temperatures, and sanitizing chemicals. The process ensures the high quality and safety of IPM Foods' products; however, the local POTW determined it might not accept the wastewater because the cleaning process made the pH unacceptable.

To determine facility compliance, the POTW required 24-hour pH monitoring, with pH readings taken every minute. SCS was hired to design a wastewater equalization and pH neutralization system. SCS assessed the wastewater issues, set up data loggers to measure process flows, tested grab and 24-hour composite wastewater samples, conducted bench scale pH buffering tests, and coordinated with the POTW staff.

The SCS project team created a cleaning chemical inventory and ways to reduce the overall water and cleaning chemicals used throughout the process, prepared engineering design drawings and specifications, then supported IPM Foods with the selection of pH neutralization equipment. Our support included bidding and construction issue resolution, reviewing the pretreatment system's pilot testing results, and preparing the documentation required by the POTW.

During the design of the pH neutralization system, SCS worked closely with IPM Foods' staff to characterize ongoing water use by gathering data to assess the amount of water used and monitoring wastewater generation to perform a water use evaluation.



FOG in Wastewater Exceeds Pre-treatment Permit

ButterBuds® Food Ingredients supplies concentrated dairy flavors to consumers and food businesses all over the world. ButterBuds called SCS after the concentrations of fats, oils, and grease (FOG) in their wastewater exceeded their pretreatment permit standards. They had reached the end of negotiations with the City and simply needed to comply with the City's standards.

The compliance schedule required a swift solution, but for the company it was critical that ongoing production would not be disrupted. Both goals were accomplished.

SCS began by performing a multi-level review of the wastewater pretreatment issues. We conducted a process water balance, prepared a process flow diagram, measured process flows, collected and analyzed wastewater samples, evaluated

chemical treatment testing, and maintained communications with City staff.

Next, the SCS team prepared engineering design drawings and specifications for the wastewater pretreatment system and provided support with the selection of equipment, bidding, construction, and startup, as well as resolving operational issues.

The wastewater treatment system needed to be housed in a separate building, away from the food ingredient manufacturing processes. The wastewater discharge piping needed to be installed beneath the existing building floor slab. It was completed using directional drilling to minimize production disruption. Butter Buds now operates in full compliance with the permit standards. SCS effectively managed the political and regulatory aspects for the manufacturer.

SCS really helped us out with our wastewater pre-treatment compliance issue!

John Kueffer, Manager of Special Projects, ButterBuds Food Ingredients



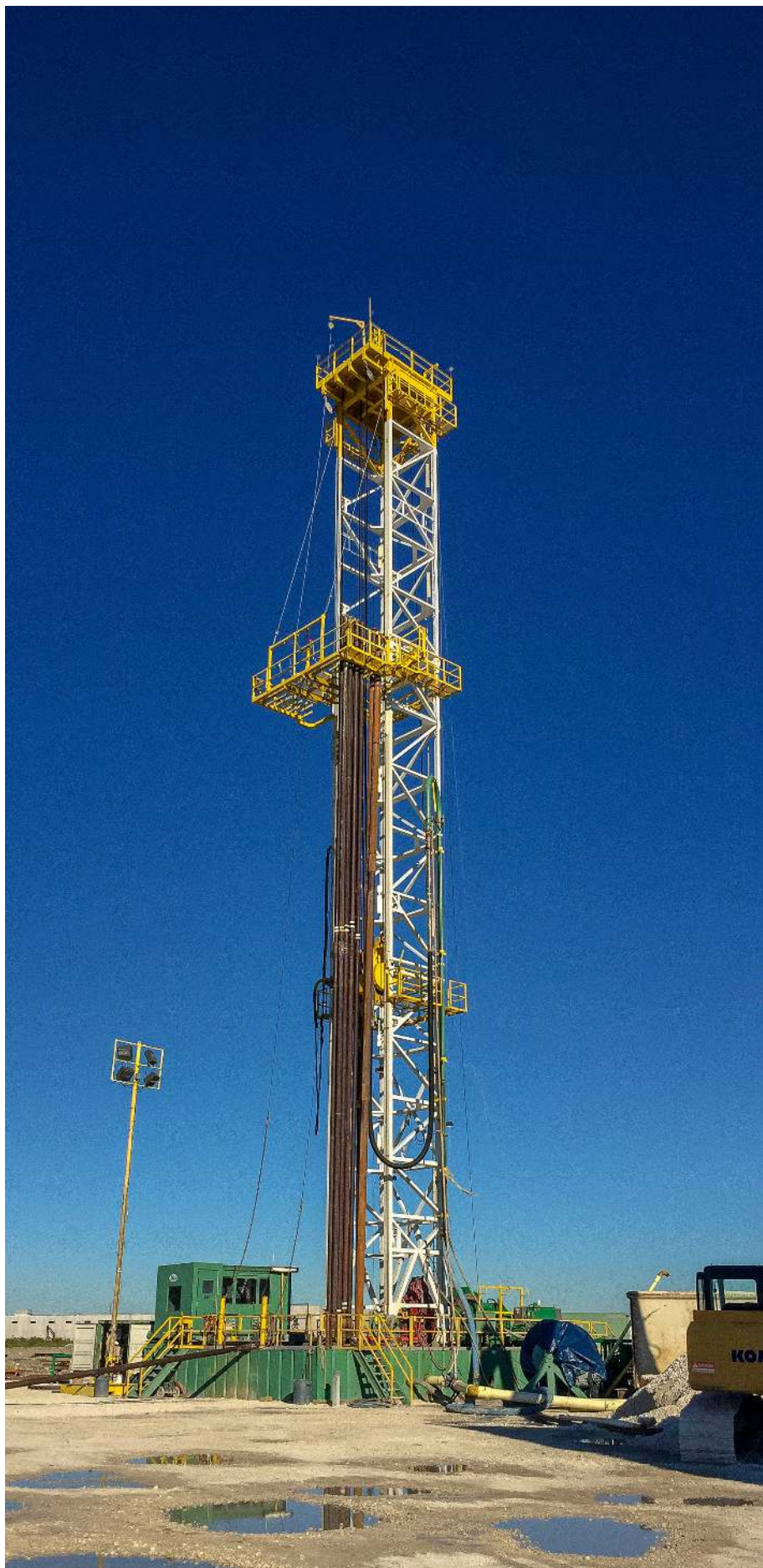
Deep Well Injection Class I, Non-Hazardous Injection Well

A confidential utility client had drilled two 13,000-foot exploratory boreholes at their mining facility expecting to be able to convert the boreholes into wells and inject high chloride wastewater from the native groundwater inflow from underground mining operations. The utility had submitted permit applications to convert the boreholes to deep injection wells, but they were unable to secure the permit. The state had not approved deep injection wells for many years and needed to be satisfied that the proposed injection wells would not adversely affect the environment. Part of the problem was that detailed information was not available for the subsurface formations at the borehole depths. The utility needed the involvement of a company with geologic expertise and deep injection well experience in order for the regulators to feel comfortable and approve the permit.

SCS was initially engaged to review the previously-submitted underground injection control (UIC) Class I permit application. Based on our review, the client then asked us to secure the regulatory approvals and complete the project. SCS conducted a comprehensive review under the state's UIC regulatory framework and negotiated with the state's environmental regulatory agency to finalize the technical requirements for a temporary emergency permit (the first of its kind issued in the state) for the two boreholes that would become Class I non-hazardous injection wells. The SCS team planned the well workover operations to meet permitting requirements for each well and secured authorizations to inject. SCS worked cooperatively with the regulators to secure a final area permit.

All goals were met on time and on budget, and SCS continues to play a vital role in the planning, testing, and operational maintenance of the UIC wells at the facility.

Deep well injection is the process of safely storing or disposing of liquid deep underground. It involves drilling beneath drinking water aquifers (1,500 to >3,000 feet deep) to trap the liquid waste under multiple impermeable layers of rock. Where the geology permits, deep well injection has considerable advantages, such as quickly removing large volumes of liquid and eliminating NPDES permits. It can be a long-term solution that operates over decades, because SCS uses safe, tested methods and technologies that do not affect drinking water resources, and normally have low ongoing operation and maintenance costs.



Prevention, Monitoring, and Treatment of Emerging Contaminants in Wastewater

Impact of Action Plans

New water protection regulation, with a growing list of chemicals and concentrations considered toxic, along with public fears of drinking water contamination, will drive the need for more effective pretreatment of wastewaters by industries and landfills. Many industries will feel the impact as federal, state, and local regulations determine what is permissible and what will be enforced. The future regulations appear intended to foster wastewater reuse as a component of integrated water resource management.

USEPA's actions are part of a significant effort by the Administration to better coordinate and focus resources on the most challenging water resource concerns, including ensuring water availability and mitigating risks associated with the potential for water scarcity. The USEPA is working with the US DOI and the USDA for a complete assessment of future water issues.

Per- and poly fluoroalkyl substances abbreviated as PFAS (e.g., Perfluorooctanoic Acid or PFOA, GenX compounds), are chemicals used by manufacturers in many commercial products and processes. PFAS can be problematic when the chemicals are present in wastewater that eventually flows to a potable water utility or may have seeped into groundwater. Analytical testing currently allows for the detection of PFAS chemicals at very low limits because these chemicals are shown to have health effects at low concentrations and most PFAS do not break down easily. As such, PFAS are likely to be environmental and health concerns for years to come.

If your facility detects PFAS levels that could cause a health risk, as dictated by local regulatory authorities or the USEPA, there are treatment technologies available that can remove the substances from wastewater. These include ion exchange processes, reverse osmosis, activated carbon, and others.

Managing Waste Generated from the Treatment Processes

Manufacturers and municipal wastewater treatment plants, with sludge by-products, will need to be aware of the concentrations of PFAS in effluents discharged to surface waters. These include ammonia, biochemical oxygen demand (BOD), total suspended solids (TSS), chemical oxygen demand (COD), pollutants such as chlorinated organic compounds, and, of growing concern, PFAS. Landfills with liners can expect to have fewer issues than unlined landfills, especially those with groundwater contamination. With a growing number of PFAS regulations, it is projected that landfills will want to monitor groundwater more closely for PFAS constituents.

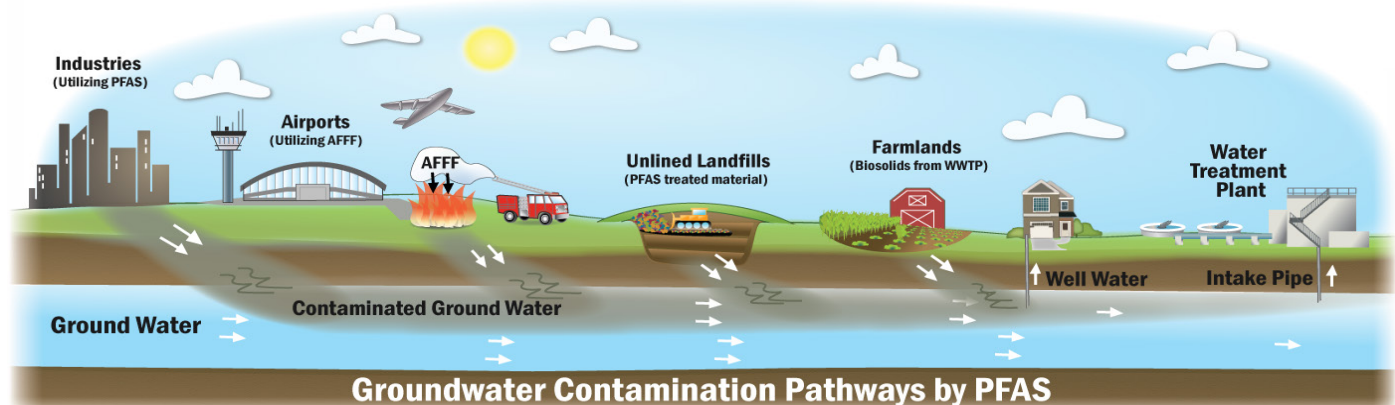
Why Choose SCS?

Our staff is actively involved with the American Bar Association's Section of Environment, Energy, and Resources (SEER) group that monitors and shapes developments and dialogue in environmental, energy, and natural resources law. SCS staff and the firm are active members of the Solid Waste Association of North America (SWANA), the Water Environment Federation (WEF), American Water Works Association (AWWA), and the Produced Water Society (PWS). SCS Engineers has worked for and with the USEPA since its inception, along with state environmental regulators in all 50 states.

SCS OM&M provides monitoring and routine maintenance of wastewater treatment systems, as well as help to plan for the disposal of waste product concentrates from ion exchange and membrane systems, in accordance with local regulations. SCS Remote Monitoring and Control®, or SCS RMC® is a tool for industry and landfills providing continuous safe operation within regulatory mandates, and to maintain public safety standards. SCS RMC provides real-time data monitoring, analysis, and process control for optimal production.

The Environmental Research & Education Foundation's Summit on PFAS in Leachate opened discussions on PFAS data gaps, noting that not all testing methods are created equal. Methods of testing samples for PFAS require standardization in order to accurately determine the presence of these chemicals. The Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS) methodology that includes Total Oxidizable Precursor (TOP) approach provides the most accurate approach. While TOP characterizes total PFAS, which represents maximum release, the actual release may be less than this.

Use caution when testing for PFAS. Research or tests that look at total fluorine include non-PFAS compounds; therefore, they are not necessarily an indicator that PFAS compounds are present.

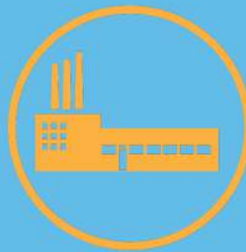




GREASE REPELLENTS
IN FOOD PACKAGING
& STAIN REPELLENTS
IN TEXTILES



FIREFIGHTING
FOAMS



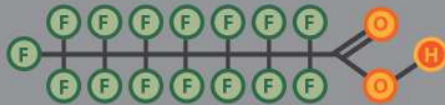
INDUSTRIAL
WASTE STREAMS



AGRICULTURAL
FERTILIZERS
& BIOSOLIDS

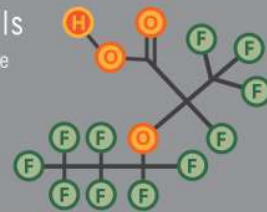
PFOA & PFOS

U.S. manufacturers voluntarily phased out
PFOA and PFOS, two specific PFAS chemicals.



GenX Chemicals

GenX chemicals are
a replacement
for PFOA.



TREATMENT OPTIONS - BASED ON LEACHATE CHEMISTRY, DISCHARGE ORDINANCES, NPDES PERMIT



SETTLEMENT
POND OR
SEWER
DISCHARGE



PUBLICLY OWNED
TREATMENT
WORKS - POTW



SURFACE
WATER
DISCHARGE

SCS Field Services - Construction and OM&M

SCS Field Services are co-located with our engineers and designers; we collaborate daily throughout your entire project from planning and design through delivery and operation.

Our full service environmental contracting unit manages your project from start to finish; coordinating with our engineers and designers to complete projects on time and on budget. Licensed and insured to perform environmental contracting throughout the United States and its territories, our experienced, trained project managers, superintendents, operators, technicians, and laborers get the job done.

Utilizing an Integrated Project Delivery we combine the skills and insights of our engineers, designers, and scientists to optimize project results; increasing value to you, reducing waste, and maximizing efficiency through all phases of engineering, design, and construction.

Selecting a veteran environmental construction group to complete your project is crucial. Over the years, our teams have managed our client's opportunities and challenges, completing projects nationwide of all sizes and scopes nationwide. We provide a variety of services:

- Construction services for leachate removal and evaporation systems
- Earthwork services constructing impoundments, liners and cap systems
- Remediation services including treatment, stabilization, demolition, and segregation along with transportation and disposal services
- Stormwater management and impoundment improvements
- Pipeline construction of landfill gas systems, transmission pipelines, leachate treatment, and conveyance
- Drilling construction for landfill gas and leachate removal systems
- Gas treatment systems including cleaning and removing hydrogen sulfide, carbon dioxide, siloxanes, and other constituents
- Water treatment technologies including membrane, advanced oxidation process, activated carbon filters, ozone treatment, clarifiers, aeration tanks, service pumps, centrifuge dewatering systems, and ultraviolet disinfection
- H2S Removal Systems
- Hazardous substance remediation and other hazardous waste management services.





SCS Field Services OM&M provides operation, maintenance, and monitoring of wastewater treatment systems. There is no 'one size fits all' solution for the treatment of wastewater. SCS uses our experience from hundreds of successful landfill leachate solutions and our extensive understanding of landfill operations to create the most cost-effective and robust leachate management program for your situation. At landfills, recirculating leachate through the landfill

can have the added benefit of increasing the production of landfill gas (LFG) that can then be used to fuel leachate evaporators or landfill gas to energy systems that we operate and maintain for you.

SCS works with manufacturers including the chemical, textile, metal, and food/ beverage processing sectors to safely manage and dispose of by-products. Our teams provide OM&M services based on your existing equipment, available land, disposal options, POTW requirements, stormwater and groundwater treatment plans. We also offer full-scale treatment with effluent discharge to surface waters under the appropriate permits and monitoring services.

Our expertise is diagnosing and preventing challenges using a combination of factors including our extensive record of experience, our highly qualified field teams, and SCSeTools®.

SCSeTools is a powerful software tool for tracking and analyzing leachate/liquids information from multiple data collection points. The software is active on over 600 landfills, a subset of which uses the enhancement modules:

- The SCSeTools Leachate Module enables our clients to evaluate disposal trends and effectively manage disposal costs.
- SCS Remote Monitoring and Control®, or SCS RMC®, provides simultaneous off-site viewing, analysis, and control of equipment and systems critical to liquids management and safe operations.



SCS Liquids Management Program Leadership



**Nathan Hamm, PE, VP
Liquids Management
Director**

Mr. Hamm has over two decades of engineering experience specializing in solid waste design and industrial wastewater pre-treatment engineering. Nathan is a Vice President and the SCS National Expert in Liquids Management Services. He has worked as technical lead on multiple industrial lagoon, storage tank, treatment and other design projects with the design team that he leads. Nathans's prior work on all aspects of solid waste design engineering make him uniquely qualified for landfill leachate and other high strength wastewater treatment technical projects. His work takes him throughout the states to support SCS's liquids management initiatives nationwide.



**Sam Cooke, PE, CEM, VP
Wastewater Treatment
Director**

Mr. Cooke has over three decades of professional and project management experience in engineering for industrial and commercial clients, including over two decades of environmental engineering consulting experience. Sam's primary area of technical expertise includes wastewater treatment with specialization in industrial wastewater pre-treatment. He is experienced with various wastewater treatment unit processes, permitting, design, feasibility testing, construction, operation and maintenance, sampling, and compliance monitoring. He also serves as an expert witness for wastewater issues. Sam has managed over 1,000 wastewater and other environmental engineering projects in 31 states for industrial, manufacturing, landfill, and corporate clients.



**Marc Lefebvre, PE
Wastewater Treatment
Project Manager**

Mr. Lefebvre is a Project Director with over three decades of experience as an environmental engineer and consultant. He specializes in a broad range of environmental remediation services for federal, state, local government, and private sector clients, including remedial action plan lans, multi-media contamination assessments, industrial wastewater treatability studies and designs, and expert witness testimony. Mr. Lefebvre is a Professional Engineer licensed in Florida, Alabama, Georgia, Kansas, Massachusetts, Michigan, North Carolina, Ohio, and South Carolina.



Darrin Dillah, PE, PhD
Liquids Management
Upstream Landfill Design

Dr. Dillah heads the Landfill Leachate Reduction liquids management initiative for SCS and serves as a Project Director. He has two decades of experience in the environmental engineering field, including LFG systems and landfill design, lecturing and research, feasibility studies, environmental assessments, economic analysis, construction oversight, liquids management, health and safety implementation, and operation and maintenance. Darrin's technical expertise is in LFG generation and recovery modeling and subsurface movement and modeling; groundwater hydrology as well as the prevention of leachate generation.



Ron Wilks
Leachate Evaporators

Mr. Wilks is Vice President with SCS Field Services and is a client services manager for all aspects of projects that include design coordination, construction, and operations management. He is also the primary system troubleshooter and investigator for LFG and leachate management systems including leachate evaporators. Ron has over four decades of environmental compliance experience relating to landfills. He is responsible for training personnel in the SCS Field Services business unit, and he is active with the SWANA LFG Training and Field Practices Committee.



Monte Markley, PG
Deep Well & UIC

Mr. Markley is a registered Professional Geologist in the state of Kansas. His project experience includes engineering geology evaluations related to deep injection wells, geologic isolation of fluids and compressed gasses, hydrogeological investigations at landfills and quarries, liquids management, regulatory compliance and permitting, groundwater investigations at superfund and RCRA facilities, remedial system design, cost allocation, and recovery from responsible parties. Monte works with a number of industries including mining and utilities, among others, that use underground injection control and disposal wells. Monte's work is highly respected by environmental regulatory agencies, and has been effective at saving time obtaining permits for sensitive work.

SCS Liquids Management Program Leadership



Bob Speed **Dewatering-Groundwater**

Mr. Speed has over two decades of experience as a consultant in south and central Florida. Bob is knowledgeable in all phases of environmental consulting, overseeing field activities involving due diligence, including Phase 1 and 2 Environmental Site Assessments; soil, air, and groundwater monitoring and remediation; RBCA Closures; and liquids management pertaining to site construction and property remediation. Bob also managed geotechnical, code compliance, and construction materials testing firms in the South Florida marketplace. Bob's working relationships with environmental regulatory agencies has proven to be greatly beneficial to the clients he serves, and his management and technical experience are demonstrated by his successful execution on some of the largest, highest profile, and environmentally sensitive projects in South Florida.



Pete Carrico **OM&M**

Mr. Carrico has over three decades of experience with SCS Field Services in operation, maintenance, and monitoring (OM&M) of LFG and liquids management systems. Pete's experience ranges from hands-on, technical fieldwork to management of field teams performing routine and non-routine LFG system OM&M. In his leadership role, he is responsible for SCS Field Service OM&M operations at facilities nationwide. Concurrent with these responsibilities, Pete has helped develop the liquids management module within SCSeTools®, a web-based application platform that collects, monitors, charts, graphs, alerts, and manages data from client sites to help facilities operate more efficiently. Pete has led training seminars for employees and clients, and is an instructor and presenter in LFG industry seminars and symposia.



Tom Barham **Construction**

Mr. Barham is a Member of the Bar in Virginia and the District of Columbia. He holds Contractors Licenses in thirteen states and is experienced with wastewater treatment related construction. SCS clients benefit from Tom's three decades of expertise in construction management, including procurement, scheduling, budgeting, and estimating, as well as other contract formation and legal activities. Tom directs full service (design/build) projects including numerous solutions for LFG collection systems; groundwater treatment systems; bio-treatment facilities; aboveground/underground storage tanks; and soil vapor extraction systems.



Landfill Leachate Engineering

Feasibility studies

Upstream design (cells, berms, side slope/top deck, etc.)

Downstream design (recirculation, evaporators, deep well injection, pre-treatment, etc.)

Permitting & regulatory compliance

Installation & commissioning of pre-treatment systems

Construction oversight

Operation, maintenance and monitoring of systems

Monitoring pretreatment systems

Dewatering Contaminated Sites

Program development

Design of dewatering & treatment systems

Permitting & regulatory compliance

Oversight of construction dewatering

Dewatering & system operations

Monitoring & evaluation

Operation & maintenance of dewatering & treatment systems

Documentation & reporting

Industrial Wastewater Pre-Treatment

Feasibility studies

Pretreatment system testing & design

Installation & commissioning

Operation, maintenance & monitoring

Permitting and regulatory compliance

Construction oversight

Deep Well Injection

Project planning

Siting studies & fatal flaw analysis

Market studies & financial modeling

Due diligence (environmental & financial)

UIC Class I, II, III & V permitting

Geochemical compatibility

Investigations

Local zoning & permitting

Facility design

Well workover

Well testing

Well start up and operations

The background of the entire advertisement is a photograph of an industrial facility. It features a complex network of large, light-colored pipes and structural steel beams. A worker in a hard hat is visible in the upper left, working on a high structure. The scene is brightly lit, suggesting an indoor or well-lit outdoor environment.

SCS ENGINEERS

Environmental Consultants and Contractors

Corporate Headquarters
3900 Kilroy Airport Way Ste 100
Long Beach, CA 90806-6816

Offices Nationwide
1 (800) 767-4727
Email: service@scsengineers.com
Visit: www.scsengineers.com

SCS brings you...

A record of providing timely, appropriate, and cost-effective solutions,
Over two decades of complex project delivery,
Comprehensive liquids management engineering and field services,
The highest technical and regulatory expertise, and
Our promise of excellent service and communications.

Driven by Client Success