



RANDY D. HORSACK, PE
PRINCIPAL
3TM CONSULTING, LLC

SUMMARY

Mr. Horsak is a registered Professional Engineer and scientist with more than 45 years of experience in multiple phases of environmental engineering and science: consulting, engineering, construction, operations management, office supervision, strategic planning, business development, proposal preparation, project management, litigation support, and expert witness testimony. He has managed and directed environmental projects in a variety of areas including air pollution, ambient air quality testing, noise, soil and sediment, groundwater, surface water, water treatment and purification, contaminated dust, and ecosystems. His experience includes a wide range of sites and facilities including abandoned (legacy) sites, hazardous waste management facilities, CERCLA sites, refineries, chemical plants, fossil and nuclear power plants, geothermal energy plants, manufacturing and commercial facilities, pipelines, power transmission lines, oil and gas exploration and production sites, and public and private properties. He has authored about 60 professional publications and lectures. He has worked on more than 100 litigation cases since 1995 and has testified as an expert witness on multiple occasions (48 depositions and 12 trials). Project categories (alphabetical order) include:

- Chemical fingerprinting
- Conceptual design and site conceptual modeling
- Decontamination studies
- Electromagnetic imaging and ground penetrating radar
- Economic analysis and engineering cost estimates
- Engineering feasibility studies
- Environmental impact assessments
- Health-based exposure and risk assessments
- Historical exposures based on historical emissions and contaminant half-life
- In-situ chemical oxidation of soil and groundwater
- Licensing support for grassroots projects
- Multi-media environmental sampling and analysis (soil, sediment, soil gas, surface water, groundwater, sludge, ambient air quality indoor air quality, indoor dust, ecosystems)
- Oil and gas legacy site assessment and remediation/restoration cost estimates
- Phase I environmental due diligence assessments
- Phase II and III environmental site assessments
- Pollution prevention and waste minimization studies
- Regulatory compliance audits
- Regulatory liaison and permitting support
- Site selection and site evaluation studies
- Soil and groundwater remediation and restoration of contaminated sites
- Vapor intrusion assessment
- Water and wastewater treatment

PROJECT EXPERIENCE (OVERVIEW)

Mr. Horsak has had project and technical management responsibility for more than 500 large environmental projects in the United States and more than 50 international projects, ranging in size from small consulting assignments (a few thousand dollars) to large, multi-disciplinary projects (more than 25,000 professional labor hours) to turnkey engineering-construction projects (ranging from tens of thousands to millions of dollars). He has also provided technical assistance for projects in Mexico, Taiwan, Venezuela, Ecuador, Argentina, Guam, Lebanon, Egypt, Libya, South Sudan, Somaliland, Malaysia (Natuna), the Philippines, and Canada.

EDUCATION

Bachelor of Science – Engineering, 1967 – 1971
University of Texas at Austin

Master of Science – Environmental Science, 1972 – 1974 (night classes)
University of Texas at San Antonio

PROFESSIONAL AFFILIATIONS (CURRENT AND PREVIOUS)

Registered Professional Engineer – TX, LA, NE, AL
National Society of Professional Engineers
Phi Eta Sigma
Eta Kappa Nu
Tau Beta Pi
Beta Beta Beta
Advisory Board: *Hazardous Substances Journal*
Peer Review Committee: EPA Office of Research and Development
Air and Waste Management Association
Texas Water Pollution Control Association
Houston Engineers Society
Houston Chamber of Commerce
International Society of Environmental Forensics
National Groundwater Association
Peer Reviewer: *Environmental Forensics Journal*
Member: ASTM Committee on Forensic Environmental Investigations
Member: Forensic Expert Witness Association
Member: Association for the Advancement of Cost Engineering (International)
Texas Board of Professional Engineers – Technical Expert for Enforcement
Lecturer – University of Houston Engineering Graduate Program
Lecturer – San Jacinto College Construction Management Program

ENVIRONMENTAL MEDIA

Ambient air
Ecosystems
Groundwater
Household attic dust
Indoor ambient air
Outdoor dust
Sediment
Sludge
Soil
Soil gas, soil vapor
Surface water

ENVIRONMENTAL SETTINGS

Industrial
 Chemical Plants
 Electrical Transmission Lines
 Iron, Steel, Aluminum, Chrome, other Metals Plants
 Manufacturing Plants
 Mining
 Oil & Gas Exploration and Production
 Pesticide Plants
 Pipelines (Crude, Product, Natural Gas, Water)

- Power Plants
- Refineries and Fuel Terminals
- Wood Preserving, Wood Treating Sites
- Commercial
 - Dry Cleaners
 - Gas Stations
 - Machine Shops
 - Restaurants
 - Shopping Malls
- Private Property
 - Farm Land
 - Ranch Land
 - Residential Areas

CONTAMINANTS AND POLLUTANTS

- Agent Orange
- Burn Event Contaminants
- Carbon Black
- Carbon Monoxide
- Cement Dust
- Chlorides
- Chlorinated Hydrocarbons (TCA, TCE, PCE)
- Dioxins/Furans
- Food Residue
- Guar Gum Residue
- Metals (RCRA, Priority Pollutant)
- Mold and Biological Agents
- NAPLs (DNAPL and LNAPL)
- Particles, Large to Ultrafine (PM₁₀₀ to PM_{0.5})
- Pentachlorophenol (PCP)
- Persistent Organic Pollutants (POPs)
- Pesticide and Herbicides
- Polychlorinated Biphenyls (PCBs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Per-fluorinated Hydrocarbons (PFOA and PFOS)
- Radionuclides
- Salinity, TDS, Sodium, Chlorides
- Semi-Volatile Organic Compounds (SVOCs)
- Silicates
- Sulfur, Sulfides, and Inorganics
- Total Dissolved Solid (TDS)
- Total Petroleum Hydrocarbons (TPH)
- Viruses
- Volatile Organic Compounds (VOCs)

ENVIRONMENTAL SCIENCE AND ENGINEERING

- Air, water, wastewater, solid waste, and hazardous waste permitting and regulatory compliance
- Environmental reports and impact statements
- Expert reports
- Exposure assessments and human health and ecological risk assessments
- Fate and transport studies
- Forensic investigations and chemical fingerprinting
- Multi-media environmental sampling and analysis (air emission testing, ambient air quality sampling, household dust sampling, outdoor dust sampling, surface soil and subsurface soil sampling, sludge sampling, groundwater and surface water sampling, ecosystem sampling)
- Pollution abatement and waste minimization system design and construction
- Site selection and site evaluation studies

POWER SYSTEMS

Fossil-fueled electrical generating stations (natural gas, fuel oil, wood, and coal)
 Gas turbine and combined cycle units, with heat recovery
 Geothermal and hydrothermal power systems
 Nuclear power generating stations
 Solar power systems
 Wet, wet/dry, and dry cooling tower systems
 Wind power systems

Assignments have included:

Air dispersion modeling
 Engineering feasibility studies
 Environmental impact assessments
 Impact of power plant fugitive emissions on receptors
 Licensing studies
 Nuclear fuel cycle cost analysis
 Pro forma cost estimates and engineering cost estimates
 Project management and system planning
 Site selection and permitting
 Regulatory compliance
 Transmission and distribution studies, protective relaying
 Tort claims from downed high voltage power line

GROUNDWATER

Conventional drilling
 Direct push technology (Geoprobe, Cone Penetrometer Testing, VibraCore, etc.)
 Electromagnetic imaging, ground penetrating radar, 3-D seismic
 Expert reports
 Fate and transport assessment (modeling using Rice University, etc.)
 Hydrocarbon, chlorinated hydrocarbon, metals, salinity, and other plumes
 Installation of groundwater monitoring wells
 LNAPL, DNAPL, dissolved phase plumes
 Phase I, II, III assessments
 Remediation (pump and treat, in-situ chemical oxidation, Regeneration, other technologies)
 Remediation system evaluation
 Sampling and analysis

WATER AND WASTEWATER TREATMENT

Assessment of effluents in terms of drinking water applications
 Bench-scale treatability studies
 Carbon nanotubes technology assessment
 Conceptual design of processes involving electro-coagulation/flocculation, filtration, reverse osmosis, ultra-violet light purification, ozonation, chlorination, carbon block filters, and other technologies
 Conceptual design of water and wastewater treatment systems involving the treatment of raw sewage, industrial waste, chemical-contaminated water, and pathogen-contaminated water
 Engineering economic evaluations
 Expert reports
 Field pilot studies
 Project planning, and engineering feasibility studies
 Sorbents
 Use of solar and wind turbine systems to power water treatment processes
 Water and wastewater sampling and analysis

AIR POLLUTION CONTROL

Air dispersion modeling
 Air permitting for new sources
 Air pollution control systems
 Ambient air quality testing
 Attic dust testing
 Emission estimation
 Exposure from air pollutants
 Fate and transport analysis
 Indoor air quality testing
 Particle identification and speciation
 Particle size bandwidth analysis
 PSD permitting
 Resuspension analysis
 Small particle analysis

SMALL PARTICLE ANALYSIS

Air dispersion modeling
 Ambient air quality measurement
 Chemical and electron microscope analysis techniques
 Coal fines, aerosols, fly ash, cement dust, carbon black dust, burn events, etc.
 Emission calculations and measurement
 Emission reduction and abatement
 Exposure assessment
 Fate and transport analysis
 Fugitive dust sampling, analysis, and assessment
 Health and safety protection
 Household dust and attic dust sampling and analysis
 Particle size bandwidth analysis: 0.1 micron – 100 microns
 Resuspension analysis
 Settling velocity analysis

OIL AND GAS OPERATIONS

Abandoned sites
 Background establishment
 Chemical fingerprinting
 Electromagnetic imaging
 Engineering cost estimates
 Expert reports
 Fate and transport assessments
 Legacy sites
 Natural resource damage assessment
 Petroleum hydrocarbons, chlorides / salinity, metals, radionuclides
 Records review
 Remediation of hydrocarbons, salinity, NORM, and metals in soils and groundwater
 Site assessment, including sampling of soil, sludge, groundwater, surface water, and ecosystems
 Site reconnaissance
 Spill plans
 Water resources

EXPOSURE AND RISK ASSESSMENTS

Air, water, soil pathways
 Ambient concentration studies

Duration and historical exposure studies
Health-based risk assessment
Inhalation, ingestion, immersion, and dermal pathways
Fate and transport studies
Natural resource damage assessment

ENGINEERING FORENSICS

Allocation and apportionment
Identification of source of contamination
Good Engineering Practice
Identification of responsible party
Impact to environmental media
Product defects and liability
Proximate causation
Standard of Care
Toxic tort and health injury

ENGINEERING CONTRACTS

Contract compliance
Good Engineering Practice
Performance metrics
Standard of Care
Product liability
Damage and loss assessment

PROJECT EXPERIENCE: ENGINEERING COST ESTIMATES

ASCE Level 1, 2, 3, 4, 5 estimates
Deterministic estimates (e.g., Excel based)
Expert reports
Pro Forma cost estimates
Projects: a few thousand \$ to several billion \$
Stochastic estimates (e.g., Monte Carlo based)

TECHNOLOGY DEVELOPMENT

Black Corn Flake Technology to remove petroleum hydrocarbons from a water matrix
Generation III water purification using advance UV technology
Patented technology to treat metals, arsenic, and radionuclides in a water matrix
Provisional patents to attenuate and treat viruses in the human body and environmental media
Provisional patent to treat autism spectrum disorder
Combined use of sorbents and phase separator chemicals to treat oil spills

PROJECT AND WORK EXPERIENCE

City Public Service (1972-75)

Staff Engineer, Project Coordinator
City Public Service
San Antonio, Texas

- Performed breakeven economic calculations of coal-fired versus nuclear powered electrical generation facilities.
- Designed a conceptual layout of a power transmission line from an existing fossil-fueled power plant to a large cooling reservoir.
- Performed economic analyses associated with pumping condenser cooling water and transmitting high voltage power for a conceptual nuclear power plant.
- Performed economic analyses associated with various environmental considerations for a conceptual nuclear power plant site.
- Worked with consultants to develop a site selection methodology for a nuclear power plant.
- Studied and provided technical coordination of site selection studies for a proposed nuclear power plant. The primary considerations were environmental impact, technical feasibility of the site, and relative economics.
- Assisted other engineers and scientists in developing a methodology and data base for the selection of candidate sites for a proposed nuclear power plant.
- Prepared a bid specification for a meteorological monitoring station at an existing fossil-fueled power plant, and then evaluated bids, and recommended a contractor for implementation.
- Prepared EPA NPDES permit applications for wastewater discharges from fossil-fueled power plants.
- Collected wastewater samples from a fossil-fueled power plant and had them tested to support EPA NPDES permit requirements.
- Assisted in the review of the environmental impact statement for South Texas Nuclear Project.

R. W. Beck & Associates (1975-79)

Senior Engineer / Project Manager
R. W. Beck & Associates
Columbus, Nebraska
Denver, Colorado

- Performed an independent review of an environmental impact statement for a coal-fired power plant.
- Provided environmental inputs into financial feasibility studies and funding for public power supply projects (multiple projects).
- Performed site selection studies for several gas turbine, combined cycle, and coal-fired power generation facilities. The primary considerations were environmental impact, technical feasibility of the site, and relative economics (multiple projects).
- Prepared EPA, BLM, and state permit applications for wastewater discharges (NPDES) and air emissions from several gas turbine, combined cycle, and coal-fired power generation facilities (multiple projects).

- Prepared EPA / other federal lead agency Environmental Impact Statements for several gas turbine, combined cycle, and coal-fired power generation facilities (multiple projects).
- Performed calculations, assisted in the development of computer simulation models, and wrote reports (published by the Electric Power Research Institute and the State of California) which pertained to the relative economics associated with the use of wet, wet/dry, and dry cooling tower systems to dissipate waste heat from the thermal process associated with geothermal power plants.
- Performed calculations, assisted in the development of computer simulation models, and wrote reports which pertained to the relative economics associated with the use of wet, wet/dry, and dry cooling tower systems to dissipate waste heat from the thermal process associated with nuclear power plants.
- Performed calculations, assisted in the development of computer simulation models, and wrote reports which pertained to the relative economics associated with the use of wet, wet/dry, and dry cooling tower systems to dissipate waste heat from the thermal process associated with fossil-fueled power plants.
- Assisted other engineers in evaluating the technical and economic feasibility of constructing a grassroots wood-burning power plant.
- Assisted other engineers in evaluating the cost of nuclear fuel for a nuclear power plant.
- Analysis of air pollution control equipment and compliance with Clean Air Act.

Brown & Root, Inc. - Halliburton (1979-80)

Senior Engineer / Project Manager
Brown & Root
Houston, Texas

- Managed the site selection and environmental permits for a major grassroots coal-fired power plant. The primary considerations were environmental impact, technical feasibility of the site, and relative economics. This included the collection of baseline environmental data.
- Managed and/or reviewed various environmental permit applications for grassroots coal-fired power plants.
- Assisted in the development of standardized licensing and permitting support documents to be used on all fossil-fueled power plant projects (air pollution control, water and wastewater treatment, waste management, etc.)

Pace Consultants and Engineers (1980-83)

Project Manager and Practice Leader
Pace Consultants
Houston, Texas

- Conducted site selection studies for grassroots chemical plants which included site economics, potential environmental impact, and logistical considerations (multiple projects).
- Studied the feasibility and associated economics of various methods of managing and disposing of hazardous wastes in the liquid, sludge, and solid forms (multiple projects).
- Prepared multi-client studies that reviewed the feasibility and economics associated with alternative methods of recycling toxic solvent wastes.
- Prepared multi-client studies that reviewed the feasibility and economics associated with alternative methods of disposing of toxic wastes in incinerators, landfills, treatment units, deep well injection, etc.

- Prepared a feasibility study for the destruction of toxic wastes using at-sea incineration technology.
- Provided recommendations to clients who were contemplating entry into the commercial hazardous waste market (multiple projects).
- Prepared EPA, other federal, and state permit applications for wastewater discharges and air emissions from chemical plants (multiple projects).
- Assisted other engineers in the evaluation of coal-gasification facilities in terms of market penetration.
- Constructed supply/demand curves for establishing the pricing of commercial waste management services.

NUS Corporation - Halliburton (1983-90)

Manager of Business Development
Regional Manager
Director of Regional Business Development
General Manager
NUS Corporation
Houston, Texas

- Managed the regional business development program which included sales, marketing, and proposal preparation for multi-disciplinary environmental studies, permits, conceptual design, engineering design, and remedial construction.
- Managed a 55-person staff of engineers, scientists, technicians, and support staff in the execution of various engineering and scientific studies, permits, conceptual design, engineering design, and remedial construction. Facilities included landfills, wastewater treatment systems, air pollution control systems, etc. at chemical plants, refineries, fossil-fueled power plants, and energy production facilities.
- Principal-in-Charge for an environmental upgrade program for a major chemical plant in Texas City.
- Principal-in-Charge for RCRA Part A and Part B permit and NPDES applications for refineries and chemical plants in the Gulf Coast region (multiple projects).
- Principal-in-Charge for the conceptual design of a wastewater treatment upgrade program for a major chemical plant.
- Principal-in-Charge for air emissions and ambient air quality testing for a major chemical complex.
- Principal-in-Charge for the remediation and closure of a refinery landfarm (multiple projects).
- Principal-in-Charge for the remediation and closure of a waste disposal area for a chemical plant.
- Provided oversight for remedial investigations and feasibility studies for CERCLA sites (multiple projects).
- Provided oversight for vadose zone and groundwater investigations (multiple projects).
- Project Manager for a major engineering study of the necessary upgrades of a major refinery in Mexico to comply with mirror US regulations.

Roy F. Weston (1990-91)

Project Director
Roy F. Weston
Houston, Texas

- Served as Project Director for a wastewater treatment feasibility study for a major petrochemical plant.
- Prepared a corporate business plan for pursuit of the Mexican environmental engineering services market.
- Prepared a summary plan for the environmental upgrade of a refinery.

M. W. Kellogg / KBR (1991-92)

Environmental Program Manager
M W Kellogg
Houston, Texas

- Project Manager for an environmental engineering feasibility study of technical options for the management and disposal of refinery wastes at several refineries and production facilities.
- Provided managerial oversight of the Benzene-NESHAP upgrade program for seven major refineries.
- Project Manager for a state-of-the-art environmental engineering study for the American Petroleum Institute on pollution prevention for refinery crude oil units.
- Lead Engineer in the preparation of the 1992 Strategic Business Plan and the development of a project management system for environmental projects.
- Prepared the environmental engineering portion of a proposal for a turnkey \$14 billion international LNG complex.

McLaren/Hart Environmental Engineering (1992-94)

Regional Manager
McLaren/Hart Environmental Engineering Company
McLaren/Hart de Mexico
Houston, Texas

- Managed three offices with a 25-person staff of engineers, scientists, technicians, and support staff in the execution of various engineering and scientific studies, regulatory compliance audits, due diligence assessments, permits, conceptual and engineering design, and remedial construction. Facilities included industrial and manufacturing sites, orphan sites, pipelines, chemical plants, refineries, and energy exploration sites.
- Project Manager for exposure and human risk assessment studies for contaminated oilfield properties (multiple projects).
- Project Manager for the site assessment, human health risk assessment, engineering feasibility study, and remedial construction of a contaminated oilfield property in a residential subdivision.
- Principal-in-Charge for regulatory compliance and site assessment work for a pipeline company.
- Project Manager for a remedial investigation of a benzene release from an oil and gas field production facility.
- Reviewed remediation plans for a CERCLA site.
- Project Manager for due diligence assessments, regulatory assessments, risk audits, process safety management studies, technical audits, and regulatory compliance audits for industrial and manufacturing facilities (steel production, refining, petrochemical, specialty chemicals, automotive, and glass manufacturing) in Mexico (multiple projects), including air pollution, wastewater, and waste management systems.

- Developed hybrid US-Mexican environmental regulatory compliance audit protocols.
- Conducted first process safety management study/Haz-Ops study for a glass manufacturing facility in Mexico under new Mexican federal guidelines.
- Conducted comprehensive environmental assessments (air, wastewater, and hazardous waste media) of two major refineries and production areas in Mexico, including the technical and financial requirements to upgrade the complexes to meet US environmental standards.
- Project Manager for the planning, site characterization studies, remedial investigations, and remediation plans for clean-up of several contaminated industrial sites in Mexico.
- Key participant and featured speaker in the First International Symposium on Environmental Auditing in Mexico.
- Taught various training seminars on project management, environmental regulations, environmental control technologies, regulatory compliance audits, process safety management, waste minimization/pollution prevention, and environmental Total Quality Management (TQM) in Mexico.

3TM International, Inc. (1994-present)

President and Principal Engineer

3TM International / Terra Technologies

Technical Liaison to Petra Environmental and Petra Remediation Systems

Houston, Texas

Projects (1994 – 2017):

- Project Manager for the environmental site assessment and due diligence assessment for the acquisition of 26 oil and gas properties for a major products pipeline company.
- Project Manager for the collection of environmental and geotechnical subsurface soil samples using direct push technology/cone penetrometer technology for a US DOD site (multiple projects).
- Project Manager for the collection of environmental and geotechnical subsurface soil samples using direct push technology/cone penetrometer technology for a US DOE site.
- Project Manager for the collection of environmental and geotechnical subsurface soil samples using direct push technology/cone penetrometer technology for hazardous waste and municipal waste landfills (multiple projects).
- Project Manager for the collection of environmental and geotechnical subsurface soil samples using direct push technology/cone penetrometer technology for spills sites (multiple projects).
- Project Manager for the collection of environmental and geotechnical subsurface soil samples using direct push technology/cone penetrometer technology for a nitrate contaminated site.
- Project Manager for the collection of environmental sediment samples in a bay in Texas using direct push technology/cone penetrometer technology.
- Project Manager for the collection of environmental baseline data using direct push technology and other techniques for a major refinery, terminals, and service stations in the Pacific Rim.
- Project Manager for the site characterization of service station sites in Texas (multiple projects).
- Project Manager for the site characterization of contaminated oilfield properties using direct push technology (multiple sites).

- Project Manager for the site characterization of a contaminated product pipeline property using direct push technology.
- Project Manager for the site characterization of contaminated oilfield properties, spill sites, creosote facilities, pipeline, and vacant properties using electromagnetic imaging (multiple projects).
- Technical Manager for the collection of soil and groundwater samples at dry cleaning facilities (multiple projects).
- Technical Manager for the collection of subsurface soil gas and indoor ambient air quality samples at a high school.
- Technical Manager for the excavation and removal of contaminated soil (multiple projects).
- Technical Manager for the conducting of laboratory bench-scale treatability studies aimed at evaluating in-situ chemical treatment of soils and groundwater contaminated with BTEX, chlorinated hydrocarbons, and other contaminants (multiple projects) using hydrogen peroxide, Fenton's Reagent, Oxi, sodium and potassium permanganate, and other reagents.
- Technical Manager for the preparation of cost estimates to treat contaminated soil and groundwater using in-situ chemical treatment and other technologies (multiple projects).
- Technical Manager for the in-situ chemical treatment of soils and groundwater contaminated with BTEX, chlorinated hydrocarbons, and other contaminants using high pressure jetting and low pressure injection of reagents (multiple projects).
- Technical Manager for the in-situ chemical treatment of soils and groundwater contaminated with hexavalent chrome using high pressure jetting and low pressure injection of reagents (multiple projects).
- Project Manager and provided expert engineering testimony for environmental toxic tort cases involving the following toxic chemicals: PCBs, Dioxins/Furans, Volatile and Semivolatile Hydrocarbons, Polycyclic Aromatic Hydrocarbons, Toxic Metals and Metalloids, Radionuclides, Biological Agents, and other substances. These cases involved releases of these contaminants from a source into the atmosphere, surface water, groundwater, surface soils, and/or subsurface soils and subsequent impact upon human and ecological receptors.
- Project Manager and provided expert engineering testimony for environmental toxic tort cases in which I calculated the pro forma cost associated with decontamination and restoration programs for contaminated soils, sediments, and groundwater and indoor living environments at residences and buildings.
- Evaluated widespread releases of PCBs, Dioxins, and chlorinated solvents throughout a large residential community; environmental media assessed included soil, sediments, airborne dust, household dust, surface water, and groundwater.
- Evaluated widespread releases of Dioxins throughout a residential community and creek system; environmental media assessed included soils and sediments.
- Evaluated widespread releases of Agent Orange and Dioxins throughout a residential community; environmental media assessed included surface soils and indoor household dust.
- Evaluated widespread releases of creosote materials, polycyclic aromatic hydrocarbons, and Dioxins throughout a large residential community; environmental media assessed included soil, sediments, airborne dust, household dust, ambient air, surface water, and groundwater (multiple sites and projects).
- Prepared management summary reports for assessing the technical merits of the case for several creosote sites throughout the US.

- Evaluated widespread releases of creosote materials and polycyclic aromatic hydrocarbons throughout a small residential community located in the Everglades; environmental media assessed included soil, sediments, airborne dust, household dust, surface water, and groundwater.
- Evaluated widespread releases of benzene and other volatile organic compounds throughout a residential community; environmental media assessed included soil, soil gas, and ambient indoor air.
- Evaluated widespread releases of benzene and other volatile organic compounds throughout the campus of a major high school; environmental media assessed included soil, soil gas, and ambient indoor air.
- Evaluated widespread releases of VOCs, sulfur compounds, and carbon black throughout a residential area; environmental media assessed included ambient air and indoor dust.
- Evaluated the releases of toxic mold and other biological agents throughout a residential area; environmental media assessed included soil, sediments, airborne dust, household dust, and surface water.
- Evaluated the releases of toxic mold and other biological agents, metals, and other substances from poultry operations; environmental media assessed included soil, sediments, airborne dust, household dust, and surface water.
- Evaluated the widespread release of chlorinated solvents, including DNAPL, into the groundwater beneath a large residential community; source of solvents was an adjacent petrochemical company that had impacted four aquifers.
- Evaluated widespread release of hexachlorobenzene, other chlorinated hydrocarbons, and hydrocarbons into public waterways and estuaries; source of the contamination was a large petrochemical company.
- Evaluated the release of chlorinated solvents by a dry cleaning operation onto commercial and residential property.
- Evaluated the contamination of private ranch land with petroleum hydrocarbons and brines from oil producing facilities; environmental media assessed included soils, groundwater, and surface water.
- Evaluated the contamination of private properties with chlorinated hydrocarbons from an electric component manufacturing facility.
- Developed cost estimates to remediate and/or restore contaminated properties, including soil, groundwater, and residences as a result of various type of contamination, including hydrocarbon, chlorinated solvent, PAHs, Dioxins, and PCBs (multiple projects).
- Evaluated the release of petroleum hydrocarbons from underground storage tanks into surrounding soil, groundwater, ditches, and utility corridors.
- Evaluated the release of pesticides from the aerial application of pesticide-coated rice seed and tail water in an agricultural environment (multiple projects).
- Evaluated the release of pesticides from a pesticide manufacturing facility into surrounding soils and sediments; environmental media assessed included soils, sediments, and indoor dust.
- Evaluated the release of brine from a saltwater pipeline into a protected estuary.
- Evaluated the release of odor and biological pathogens from an open sewage lagoon into a residential community.
- Evaluated the releases of various chemicals from commercial landfills.

- Evaluated the release of crude oil from a breach in a crude oil pipeline onto private property.
- Forensic identification of sources of contamination for PAHs, PCBs, Agent Orange, Pesticides, and Dioxins/Furans using chemical fingerprinting techniques (multiple projects).
- Preparation of pro forma cost estimates to restore contaminated private properties following the failure of a crude oil tank as a result of damage by Hurricane Katrina.
- Preparation of pro forma cost estimates to restore private property that became contaminated from historical oilfield operations (multiple projects).
- Preparation of pro forma cost estimates to restore two large refinery complexes in New Jersey by the remediation of contamination and the construction of productive wetlands.
- Preparation of engineering cost estimates to restore hundreds of impacted properties in Ecuador that became contaminated from historical oilfield operations (public estimate was \$27 billion).
- Preparation of technical review of expert reports involving the nature and extent of soil and groundwater contamination at oil and gas properties.
- Preparation of engineering cost estimates to remediate and restore oil field sites.
- Evaluation of emissions from a fossil-fueled power plant in Ohio.
- Technical engineering expert for US Economic Opportunity Commission.
- Preparation of engineering cost estimates to treat frack water and produced water at various shale play sites (multiple projects).
- Collection of household attic dust samples for major pesticide litigation.
- Preparation of expert report involving alleged exposure to contaminated construction dust and debris.
- Management consulting support to small private oil company.
- Remediation of soils and restoration of private property impacted by frack-out during the installation of a pipeline.

Recent Projects (2018 – 2021):

Consulting projects, litigation cases, and business initiatives during the 2018 – 2021 timeframe:

Air Emissions:

Air emissions from large-scale sugar cane field burn events
 Carbon monoxide poisoning from auto exhaust inside residential garage
 Coal-fired power plant: fly ash and bottom ash releases to workers and third parties
 Evaluation of noise levels from sand/gravel mining operation
 Exposure assessment from sulfide compound at terminal facility that resulted in worker injury
 Fugitive dust from frack sand/gravel mining operation
 Particulate emissions impact to private property from metal recycling operations
 Pesticide plant: collection of household attic dust samples and air dispersion modeling
 Emissions and ambient air quality concentrations from a commercial meat smoking operation
 Release of cement dust inside public commercial building
 Release of contaminants from a natural gas well blowout
 Criminal defense strategy for air pollution source
 Defense strategy for emitter of sterilization chemicals to the atmosphere
 Fate and transport of odorant in propane gas

Oil and Gas Sector:

Enhancement of oil field production yield
 Oil and gas legacy site: investigation of hydrocarbons, salinity, metals, radionuclides in soil / groundwater (multiple projects)
 Oil and gas operating site: investigation of salinity impacted areas
 Oil and gas operating site: remediation of impacted soils
 Oil and gas operating site: remediation of tank battery
 Oil and gas operating site: allocation and apportionment of remediation costs among operators
 Release of crude oil and salinity from pipeline (multiple projects)
 Removal of sulfurs and metals from crude oil
 Evaluation of water use for hydrostatic testing of crude oil tank
 Release of contaminants from natural gas blowout
 Production enhancement of oil producing property
 Remediation consultation for oil and gas service company regarding propane gas and odorant
 Release of gasoline from a service station and impact to private property

Water, Wastewater, and Groundwater:

Consultant to new technology for the treatment of metals and radionuclides in wastewater
 Consultant to treatment of groundwater to produce agricultural irrigation
 Development of provisional patent to treat metals and radionuclides in water
 Engineering cost estimate for wetlands restoration
 Impact to soil and groundwater from the release of chlorinated hydrocarbons
 Impacts from a municipal wastewater treatment plant (NPDES, CERCLA)
 Nature and extent of groundwater plumes at refinery
 Nature and extent of groundwater plumes at wood treating facility
 Radionuclides in public water supply drinking water
 Release of salinity to crawfish farming operation
 Treatment of oily wastewater at tank cleaning facility
 Contract dispute over water used for hydrostatic testing of crude oil tank
 Contract dispute for commercial wastewater treatment company
 Contract dispute involving NPDES discharges from coal-fired power plant and metals smelter
 Engineer cost estimate model for grassroots water treatment facility
 Engineering cost estimate for a reverse osmosis system in the Philippines
 Evaluation of carbon nanotube technology to remove metals from frack water

Solar Power Systems:

Conceptual design of solar power systems
 Engineering cost estimates of solar power systems

Miscellaneous:

Forensic investigation of contaminated Native American property
 Forensic investigation of commercial property from release of cleaning agents
 Forensic investigation of contaminated food
 Forensic investigation of private residence with contamination from unknown source
 Screening of industrial sites in Caribbean area with respect to litigation
 CERCLA driven actions for commercial waste processor
 Evaluation of roof construction defects of a residential house

Medical:

Impact of aluminum and mercury on neuro-degenerative diseases
 Patent work on delivery systems for disinfection of virus-contaminated surfaces
 Patent work on enteric encapsulation of medical composition to treat viruses
 R&D with NIH to attenuate viruses
 R&D with USDA to attenuate viruses

Impact from Flooding:

Impact to private residence from neighbor property flooding in The Woodlands
 Impact to rural properties from Hurricane Harvey and from chemical plant releases

Impact to subdivision from Hurricane Harvey
 Impact to private residence from poor contouring of subdivision property
 Impact to commercial business from adjacent commercial business after pavement construction
 Impact to private residence from adjacent food establishment

Product Liability

Alleged failure of engineered protective liner system in oilfield environment
 Alleged failure of water to meet industrial requirements

PUBLICATIONS / PROFESSIONAL PAPERS

Books...

Horsak, R. "Chapter 5: Water Utilization, Management, and Treatment," Textbook: Hydraulic Fracturing Operations: Handbook of Environmental Management Practices, Scrivener/Wiley Publishers, Published in 2015.

Horsak, R. "Cross in the Background," WestBow Press, Biography/Autobiography/Memoir, Published in July 2010.

Horsak, Bedient, Hamilton, Thomas, et al "Chapter 8 – Pesticides" Environmental Forensics, Published in December 2005.

Other Publications...

Horsak, R. "Disaster Preparedness: How to Apply Uncertainty to Construction Cost Estimates," University of Houston Graduate Engineering Program, February 2, 2019.

Horsak, R. "The Use of Monte Carlo Methods to Assess Contingency and Risk," University of Houston Graduate Engineering Program, February 3, 2018.

Dahlgren, Dr. James, Horsak, R. "Health Injury Incidence in Coal Combustion Waste Landfill Workers" being published, 2Q2018.

Horsak, R. "Applying Uncertainty to Construction Cost Estimates: The Use of Monte Carlo Methods to Assess Contingency and Risk," University of Houston Graduate Engineering Program, February 4, 2017.

DiGiglia, J. M., JD "Ethical Issues in Oil and Gas Toxic Tort Litigation," paper by DiGiglia; comments and input by R. Horsak.

Horsak, R. and Quereshi, J. "Design and Installation of Innovative Transportable Municipal Wastewater Treatment Systems in Pakistan," Skype presentation to Conference on Water Security and Sustainable Growth, PCRWR and Riphah International University Institute of Public Policy, Islamabad, Pakistan, August 23-25, 2016.

Horsak, R. "Applying Uncertainty to Construction Cost Estimates for Disaster Preparedness," University of Houston Graduate Engineering Program, February 27, 2016.

Horsak, R. "Applying Uncertainty to Construction Cost Estimates," San Jacinto College Construction Management Program, November 5, 2015

Horsak, R. "Calculating Cost Contingencies for Water and Wastewater Treatment Systems," United Nations World Water Day 2015, Houston, Texas USA, March 27, 2015.

Horsak, R. "Use of Statistical and Stochastic Methods to Estimate the Cost of Responding to Natural Disasters," University of Houston Graduate Program, February 28, 2015.

Horsak, R. "The Use of Electro-Coagulation Technology to Treat Hydrofracturing Flowback Water and Other Oil and Gas Field Wastewaters," United Nations World Water Day, 2014, Houston, Texas USA, March 22, 2014.

Horsak, R. "Applying Stochastic Processes to Engineering Economics," University of Houston Graduate Program, October 13, 2012.

Horsak, R., DiGiglia, M., Corley, D. "Addressing Oil Field Legacy Sites: Using Stochastic Cost Estimating Techniques to Evaluate Potential Financial Risk," Presented at Environmental Challenges and Innovations Conference, Gulf Coast 2012, Texas Association of Environmental Professionals, October 11, 2012.

Horsak, R., and Brassow, C. "Summary of Advances in Frac Water Treatment and Hydrocarbon Recovery from Oil-Based Drilling Fluids," Presented at Environmental Challenges and Innovations Conference, Gulf Coast 2012, Texas Association of Environmental Professionals, October 11, 2012.

Horsak, R. "Using Monte Carlo Analysis to Estimate Remediation Costs for Contaminated Oilfield Sites," AACE International Annual Conference, San Antonio, Texas, July 8 – 11, 2012.

Horsak, R., Zlotnik, E, and Sanchez, A., "The Relevancy of Background Concentrations of Polychlorinated Dibenzo-Dioxins (PCDDs) in Toxic Tort and Property Contamination Cases," presented at the Environmental Challenges and Innovations Conference, Texas Association of Environmental Professionals, February 10, 2011, Houston, Texas.

Johnson, G., Horsak, R. and Gary A., "Fuzzy-C-Means Clustering: An Alternative to PCA-Based Receptor / Mixing Models for PCDD/PCDF (Dioxin/Furan) Fingerprinting," presented at Dioxin 2010 Conference, September 14, 2010, San Antonio, Texas.

Horsak, R., "Limitations of Using In-Situ Chemical Oxidation in Remediating Pesticide-Contaminated Sites," presented at the annual conference, Texas Association of Environmental Professionals, Environmental Challenges and Innovation Conference, February 11, 2010, in Houston, Texas.

Horsak, R. and Tomson, M., "The Use of In-Situ Oxidation to Treat the Pesticide Fipronil," to be published in Environmental Forensics Journal.

Horsak, R. "The Role of Contaminant Half-Life in Performing Risk Assessments," presented at Texas Association of Environmental Professionals Environmental Challenges and Innovations Conference, February 16, 2009 in Houston, Texas.

Horsak, R. and Woodward, R. "Persistence and Residual Toxicity of Fipronil Degradates Call Into Question Traditional Half-Life Safety Factors," presented at Association for Environmental, Health and Sciences (AEHS) Annual Conference; March 10-13, 2008 in San Diego, California.

Horsak, R., "Use of Monte Carlo Cost Analyses in Estimating Oilfield Site Restoration," presented at Texas Association of Environmental Professional Annual Meeting, February 21, 2008 in Houston, Texas.

Woodward, R. and Horsak, R. "Fipronil Residues Remaining in Heavy Clay Soils Seven Years After Application Affect Non-Target Arthropods," presented at Texas Association of Environmental Professional Annual Meeting, February 21, 2008 in Houston, Texas.

Horsak, R. and Woodward, R. "Fipronil Residues Remaining in Heavy Clay Soils Seven Years After Application Affect Non-Target Arthropods," American Chemical Society Annual Conference, Boston, Massachusetts, presented August 23, 2007.

Horsak R., "Use of Contaminated Household Dust as an Evaluation Metric for Human Health Risk Assessments," Texas Association of Environmental Professionals Annual Conference, Houston, Texas, February 15, 2007.

Dahlgren, J. Horsak, R., et al "Residential and Biological Exposure Assessment of Chemicals from a Wood Treatment Plant" Science Direct / Chemosphere, January 17, 2007.

Johnson, G., Hansen, L., Hamilton, C., Hermanson, M., Horsak, R., and O'Keefe, P., "Distinguishing Between Two Types of Aroclor 1254: Considerations for Environmental Forensics Investigations," SETAC North America 26th Annual Meeting, November 13-17, 2005.

Bedient, P., Horsak, R., Schlenk, D., Hovinga, R., and Pierson, J., "Environmental Impact of Fipronil to the Louisiana Crawfish Industry," Environmental Forensics, September 2005.

Horsak, R.D., "Assessment of Pesticide-Contaminated Sites in the United States: What We Have Learned Since the 1970s" presented at Intersol 2005 Fifth International Conference-Exhibition on Soils, Sediments, and Water in Paris, France in April 19-21, 2005.

Dahlgren, J., Horsak, R.D., et al "Exposure Assessment of Residents Living Near a Wood Treatment Plant" Environmental Research, 92/2003-99-109, November 4, 2002.

Horsak, R.D., "In-Situ Chemical Treatment of Contaminated Soils and Groundwater Using High Pressure Injection," Ground Water Protection Council Annual Forum, Ft. Walton Beach, Florida, September 24-27, 2000.

Horsak, R.D., "In-Situ Oxidation of Contaminated Soils and Groundwater," Houston Geological Society; Houston, Texas, September 8, 1999.

Horsak, R.D., "Site Characterization - Data Needs and Strategies for Collecting Environmental Samples," Risk Assessment Workshop, University of Texas Medical Branch at Galveston, July 30, 1998.

Horsak, R.D., and Jay Jessup, co-host and speaker for "North East Texas / Mexico Trade and Investment Opportunities Conference," Longview, Texas, November 8, 1995.

Horsak, R.D., and R.A. Klopp, "Cleaning and Remediation of Contaminated Sites: A Cost-Effective Approach," PRO-ECO 95, Monterrey, Mexico, May 16, 1995.

Horsak, R.D., "Selecting Waste Management Alternatives: US Lessons Learned," PRO-ECO 94, Monterrey, Mexico, May 17-19, 1994.

Horsak, R.D. and W. Rodgers, "Environmental Risks: An 8-Hour Process Hazards Analysis Seminar," CAINTRA-IPA Risk Seminar, Monterrey, Mexico, March 16, 1994.

Horsak, R.D., "Preventing Pollution: Environmental Gains Through TQM," The Business Report, Pennsylvania Chamber of Commerce, August, 1993.

Horsak, R.D., "Pollution Prevention: Why It 'Cannot' Be Achieved," ENVIRO-PRO EXPO MEXICO 93, Mexico City, Mexico, July 13-15, 1993.

Horsak, R.D., "Coping with the Environmental Movement of the 90's in Mexico," USA-Tech 92, Monterrey, Mexico, September 22-24, 1992.

Horsak, R.D., "Principles of Environmental Auditing," CAINTRA-IPA Environmental Management and Safety Seminar, Monterrey, Mexico, June 14-15, 1992.

Horsak, R.D., "Methodology for the Management of Environmental Programs," CAINTRA-IPA Environmental Management and Safety Seminar, Monterrey, Mexico, June 14-15, 1992.

Horsak, R.D. and Munsil, J.M., "Environmental Management Technical Audits" INFOMEX Environmental Seminar, Mexico City, Mexico, May 1992.

Horsak, R.D., "Environmental Auditing Practices in the United States" INFOMEX Environmental Seminar, Monterrey, Mexico, June 1991.

Horsak, R.D., "Overview of U.S. Environmental Regulatory Trends" INFOMEX Environmental Seminar, Monterrey, Mexico, December 1990.

Horsak, R.D., "Overview of Environmental Control Technologies" INFOMEX Environmental Seminar, Monterrey, Mexico, November 1990.

Horsak, R.D., "Exposure Information Requirements Under RCRA -- Only the Beginning?" Hazardous Substances, November, 1985.

Horsak, R.D. and Fessler, R.D., "How the 1984 RCRA Amendments Will Restrict Waste Solvent Management Options," American Defense Preparedness Association Symposium, Baltimore, Maryland, October 24, 1985.

Horsak, R.D. and Damico, S.A., "Selection and Evaluation of Hazardous Waste Disposal Sites Using Fuzzy Set Analysis," Journal of the Air Pollution Control Association, October, 1985 Volume 35, No. 10.

Horsak, R.D., "Selection and Evaluation of Hazardous Waste Disposal Sites Using Fuzzy Set Analysis," APCA Conference, Detroit, Michigan, June 1985.

Horsak, R.D. and Potter, A.E., "Waste Solvent Management: The Relative Merits of Recycling-Recovery and Fuel Use Options," Environmental Analyst, May 1984.

Horsak, R.D., "Waste Disposal in Gulf Coast Region Faces Problems," Journal of Commerce, March 19, 1982.

Horsak, R.D., "Waste Heat Rejection from Geothermal Power Plants," presented at Second Annual Geothermal Conference, Taos, New Mexico, 1978.

Horsak, R.D., "Economics of Conserving Water by Use of Alternative Cooling Methods for Large Nuclear, Fossil, and Combined Cycle Power Plants," California State Energy Resources Conversation and Development Commission, 1978.

Horsak, R.D., "Waste Heat Rejection from Geothermal Power Plants: EPRI Research Project 927-1," 1978.

Horsak, R.D., "A Primer on the Rejection of Waste Heat from Power Plants," California SERCDC, EPRI, 1978.

Horsak, R.D., "Waste Heat Rejection from Geothermal Power Plants: Review of Data Base and Methodology, EPRI Research Project RP-927-1," Presented at First Annual Geothermal Conference, Ka-nee-tah, Oregon, 1977.

Horsak, R.D., "Analysis of Environmental Considerations in the Selection of Sites for Nuclear Power Plants," University of Texas at San Antonio, San Antonio, Texas 1975.

Horsak, R.D., "Siting a Nuclear Power Plant: An Environmental Overview," American Society of Civil Engineers, Beaumont, Texas 1975.

Horsak, R.D. and Professor Powers, E.J., "Fundamentals of Superconducting Magnets," University of Texas, Austin, Texas 1971.

SUMMARY OF DEPOSITIONS / EXPERT TESTIMONY AT TRIAL

Project:	Soil and groundwater contamination of a dry cleaning facility in Baytown, Texas
For Defendant:	Bay Plaza Realty
Client:	Mr. Robin Morse of Crain, Caton & James and Mr. Carl Brassow of Houston, Texas
Services:	Sampling and analysis, expert reports, deposition, and testimony at trial
Contaminants:	Chlorinated solvents
Area:	Environmental site assessment, sampling and analysis of contaminated soil and groundwater, remediation using in-situ chemical oxidation
 Project:	 Soil and groundwater contamination at a community adjacent to a petrochemical complex in Lake Charles, Louisiana
For Plaintiff:	Citizens of Mossville Community
Client:	Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana
Services:	Sampling and analysis, expert reports, and deposition
Contaminants:	Chlorinated solvents

Area: Environmental site assessment, sampling and analysis of contaminated soil and groundwater

Project: Science textbooks for the State of Texas
For Plaintiff: Texas Citizens for a Sound Economy
Services: Expert testimony before the Texas State Board of Education
Area: Bias of proposed science textbooks

Project: Groundwater contamination at the Senn Ranch oilfield in west Texas
For Plaintiff: Senn Ranch
Client: Mr. Bill Robins of Robins, Cloud & Lubel of Houston, Texas
Services: Sampling and analysis, expert reports, and deposition
Contaminants: Petroleum hydrocarbons and salinity
Area: Environmental site assessment, sampling and analysis of contaminated soil and groundwater, cost to remediate contaminated groundwater

Project: Soil and groundwater contamination at the Pavestone Corporation site in Katy, Texas
For Plaintiff: Katy Land Company and Pavestone Corporation
Client: Mr. Tom Hoekstra of Godwin-Gruber of Dallas, Texas
Services: Sampling and analysis, expert reports, deposition, and testimony at trial
Contaminants: Chlorinated and non-chlorinated hydrocarbons, miscellaneous chemicals
Area: Environmental site assessment, sampling and analysis of contaminated soil and groundwater

Project: Multi-media environmental contamination near the Kerr McGee Creosote Facility in Columbus, Mississippi
For Plaintiff: Citizens of Columbus, Mississippi
Client: Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana
Services: Sampling and analysis, expert reports, and deposition
Contaminants: Creosote chemicals, metals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans
Area: Environmental site assessment, sampling and analysis of contaminated soil, sediment, groundwater, surface water, drinking water, indoor dust

Project: Transformer manufacturing facility in Crystal Springs, Mississippi that released PCBs
For Plaintiff: Citizens of Crystal Springs
Client: Ms. Meg McAlister and Mr. Doug Mercier of David Nutt & Associates of Jackson, Mississippi
Services: Sampling and analysis, expert reports and deposition
Contaminants: PCBs, Dioxins/Furans, chlorinated hydrocarbons
Area: Environmental site assessment, sampling and analysis of contaminated soil, sediment, groundwater, surface water, storm water, drinking water, indoor dust

Project: Review of environmental assessment conducted by another consulting firm for an industrial site owner in Houston, Texas
For Defendant: Realtors
Client: Mr. Gary Pate of Kelly, Smith & Murrah of Houston, Texas
Services: Expert reports and deposition
Contaminants: Chlorinated and non-chlorinated hydrocarbons, metals, and miscellaneous contaminants
Area: Environmental site assessment

Project: Contamination of rice and crawfish fields by pesticide application
For Plaintiff: Rice farmers of Louisiana
Client: Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana
Services: Sampling and analysis, expert reports, deposition, and testimony at trial
Contaminants: Pesticides and metabolites

Area:	Environmental site assessment, sampling and analysis of contaminated soil and groundwater, degradation half-life of pesticides, use of in-situ chemical oxidation to degrade pesticides
Project:	Contamination of private property from oilfield operations
For Plaintiff:	Homeowners in Corpus Christi, Texas
Client:	Mr. Bob Hilliard of Hilliard & Munoz of Corpus Christi, Texas
Services:	Sampling and analysis, expert report, deposition, and testimony at trial
Contaminants:	Oilfield wastes, refinery wastes, PCBs, pesticides
Area:	Environmental site assessment, sampling and analysis of contaminated soil and groundwater, environmental forensics, degradation half-life of hydrocarbon contaminants, Superfund, ATSDR, and probability
Project:	Contamination of community from creosote facility operations
For Plaintiff:	Citizens of Sutton, West Virginia
Client:	Mr. Vince Trevelli of The Calwell Practice of Charleston, West Virginia
Services:	Sampling and analysis, expert report and deposition
Contaminants:	Creosote chemicals, metals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans
Area:	Environmental site assessment, sampling and analysis of contaminated soil, sediment, groundwater, surface water, drinking water, indoor dust, background conditions
Project:	Contamination of community from chemical plant operations
For Plaintiff:	Citizens of Greenville, Mississippi
Client:	Ms. Lee Rickard of Cory & Rikard of Jackson, Mississippi Mr. Mike McGartland of McGartland & Associates of Ft. Worth, Texas
Services:	Sampling and analysis, expert report and deposition
Contaminants:	Insecticides, herbicides, arsenic
Area:	Environmental site assessment, sampling and analysis of contaminated soil, sediment, and surface water; pesticide behavior in the environment
Project:	Transformer manufacturing facility in Crystal Springs, Mississippi
For Plaintiff:	Citizens of Crystal Springs
Client:	Ms. Meg McAlister and Mr. Doug Mercier of David Nutt & Associates of Jackson, Mississippi
Services:	Sampling and analysis, expert reports and deposition
Contaminants:	PCBs, Dioxins/Furans, chlorinated hydrocarbons
Area:	Environmental site assessment, sampling and analysis of contaminated soil, sediment, groundwater, surface water, storm water, drinking water, indoor dust; fingerprinting; contaminant half-life
Project:	High school campus in Beverly Hills, California
For Plaintiff:	Citizens of Beverly Hills, California
Client:	Mr. Al Stewart and Mr. Jim Piel of Baron & Budd of Dallas, Texas
Services:	Sampling and analysis, expert report and deposition
Contaminants:	Benzene, volatile hydrocarbons, phthalates
Area:	Environmental site assessment; sampling and analysis of subsurface soil gas and indoor ambient air quality; assessment of the extent of benzene in the subsurface environment and the potential for vapor intrusion; completed pathway assessment
Project:	Multi-media environmental contamination near the Koppers Creosote Facility in Grenada, Mississippi
For Plaintiff:	Citizens of Grenada, Mississippi
Client:	Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana
Services:	Sampling and analysis, expert reports, deposition, and testimony at trial
Contaminants:	Creosote chemicals, metals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans

Area: Environmental site assessment, sampling and analysis of contaminated soil, sediment, ambient air, surface water, drinking water, indoor dust

Project: Background study of contaminants
 For Plaintiff: Citizens of Sutton, West Virginia
 Client: Mr. Vince Trevelli of The Calwell Practice of Charleston, West Virginia
 Services: Sampling and analysis, expert report and deposition
 Contaminants: Creosote chemicals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans

Area: Sampling and analysis of soil to determine background conditions

Project: Contamination of rural community from poultry operations
 For Plaintiff: Citizens of Prairie Grove, Arkansas
 Client: Mr. Clayton Davis of Lundy & Davis of Lake Charles, Louisiana
 Services: Sampling and analysis, affidavit and deposition
 Contaminants: Poultry wastes, toxic metals, biological agents

Area: Environmental site assessment, sampling and analysis of contaminated soil, sediment, ambient air quality, indoor dust, background conditions

Project: Contamination of oilfield property
 For Plaintiff: Property owner in New Iberia, Louisiana
 Client: Talbot, Carmouche, & Marcello of Baton Rouge, Louisiana
 Services: Expert report and deposition
 Contaminants: Petroleum hydrocarbons, toxic metals, salinity, radionuclides

Area: Feasibility of remediation of contaminated soil and groundwater; preparation of cost estimates to remediate and decontaminate private land to background levels

Project: Contamination of oilfield property
 For Plaintiff: Property owner in Shreveport, Louisiana
 Client: Talbot, Carmouche, & Marcello of Baton Rouge, Louisiana
 Services: Expert report and deposition
 Contaminants: Petroleum hydrocarbons, toxic metals, salinity, radionuclides

Area: Feasibility of remediation of contaminated soil and groundwater; preparation of cost estimates to remediate and decontaminate private land to background levels

Project: Multi-media environmental contamination near the Kerr McGee Creosote Facility in Columbus, Mississippi
 For Plaintiff: Citizens of Columbus, Mississippi
 Client: Mr. Bill Duke of the Tollison Law Firm
 Services: Expert reports and deposition
 Contaminants: Creosote chemicals, metals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans

Area: Environmental site assessment, sampling and analysis of contaminated soil, sediment, groundwater, surface water, drinking water, indoor dust

Project: Contamination of rice and crawfish fields from pesticide application
 For Plaintiff: Rice farmers of Louisiana
 Client: Mr. Chris Piasecki of Davidson, Meaux, Sonnier & McElligott of Lafayette, Louisiana
 Services: Sampling and analysis, expert reports and deposition
 Contaminants: Pesticides and metabolites

Area: Environmental site assessment, sampling and analysis of contaminated soil, degradation half-life of pesticides

Project: Contamination of residential and other public areas with pesticides
 For Plaintiff: Citizens of Nitro, West Virginia
 Client: The Calwell Practice and the James Humphreys Law Firm of Charleston, West Virginia
 Services: Sampling and analysis, expert reports and deposition
 Contaminants: Agent Orange; 2,4,5-T; Dioxins and Furans

Area: Environmental site assessment, sampling and analysis of contaminated soil and household dust, chemical fingerprinting, engineering cost estimate

Project: Contamination of rice and crawfish fields from pesticide application
 For Plaintiff: Rice farmers of Louisiana
 Client: Mr. Elwood Stevens of the Crawfish Litigation Group of Lafayette, Louisiana
 Services: Deposition and testimony at trial
 Contaminants: Pesticides and metabolites
 Area: Environmental site assessment, sampling and analysis of contaminated soil, degradation half-life of pesticides

Project: Contamination of residential and other public areas by chemical plant operations
 For Plaintiff: Citizens of Proctor, West Virginia
 Client: Mr. Chris Regan of Bordas & Bordas
 Services: Sampling and analysis, expert reports and deposition
 Contaminants: Carbon black, particulates, sulfur compounds, PAHs, metals
 Area: Environmental site assessment, sampling and analysis of ambient air and household environments

Project: Contamination of private property by oilfield operations
 For Plaintiff: Brownell Land Company
 Client: Talbot, Carmouche, & Marcello and Weeks-Gonzalez
 Services: Expert report and deposition
 Contaminants: Hydrocarbons, Metals, Salinity, Radionuclides
 Area: Feasibility of remediation of contaminated soil and groundwater; preparation of cost estimates to remediate and decontaminate private land to background levels

Project: Contamination of private property by oilfield operations
 For Plaintiff: Private Landowner
 Client: Due, Price, Guidry, Piedrahita & Andrews, PA
 Services: Expert report and deposition
 Contaminants: Hydrocarbons, Salinity
 Area: Feasibility of remediation of contaminated soil and groundwater; preparation of cost estimates to remediate and decontaminate private land to background levels

Project: Remediation and restoration of refinery properties and natural resource damage assessment
 For Plaintiff: State of New Jersey vs Exxon
 Client: Kanner & Whitely and Nagel, Rice & Mazie
 Services: Expert reports and deposition
 Contaminants: Hydrocarbons and Miscellaneous
 Area: Preparation of engineering cost estimate to remediate contaminated areas within two refineries and restoration to productive wetlands

Project: Nature and extent of contamination at / near the St. Regis Superfund Site
 For Plaintiff: Citizens of Cass Lake, Minnesota
 Client: Sieben, Grose, et al and Law Office of Don Russo
 Services: Sampling and analysis, expert reports and deposition
 Contaminants: VOCs, SVOCs, PAHs, CCA, Dioxins/Furans, Pentachlorophenol, Other
 Area: Preparation of reports that address the historical operations and current nature and extent of contamination in surface soils, deeper soils, sediments, surface water, groundwater, ecosystems, and household dust media

Project: Multi-media environmental contamination at the Durawood Wood Treating Facility in Alexandria, Louisiana
 For Plaintiff: Citizens of Alexandria, Louisiana
 Client: McKernan Law Firm
 Services: Sampling and analysis, expert reports and deposition

Contaminants:	Creosote chemicals, metals, polycyclic aromatic hydrocarbons, pentachlorophenol, Dioxins/Furans
Area:	Environmental site assessment, sampling and analysis of contaminated soil, sediment, ambient air, surface water, indoor dust
Project:	Contamination of private and commercial properties from Citgo oil spill
For Plaintiff:	Gray Plantation and other citizens near Lake Charles, Louisiana
Client:	Lundy, Lundy, Soileau, & South
Services:	Sampling and analysis, expert reports, deposition and testimony at trial
Contaminants:	Waste oil, slop oil
Area:	Environmental site assessment; sampling and analysis of contaminated soil, sediment, and surface water
Project:	Contamination of private residences from pesticide plant operations
For Plaintiff:	Citizens near McIntosh, Alabama
Client:	Reich & Binstock
Services:	Sampling and analysis, expert report and deposition
Contaminants:	DDT
Area:	Engineering cost estimate to decontaminate and restore houses contaminated with DDT dust
Project:	Contamination of private residences from creosote operations
For Plaintiff:	Citizens in Grenada, Mississippi
Client:	Lundy, Lundy, Soileau & South
Services:	Sampling and analysis, expert reports and deposition
Contaminants:	Dioxins, PAHs, Toxic Metals, Creosote, Pentachlorophenol
Area:	Sampling and analysis, fate and transport, chemical fingerprinting, cost to decontaminate residences, historical contamination levels
Project:	Contamination of private property and residences from creosote operations
For Plaintiff:	Citizens of Pineville, Louisiana
Client:	Lundy, Lundy, Soileau & South
Services:	Sampling and analysis, expert reports and deposition, testimony at trial
Contaminants:	Dioxins, PAHs, Toxic Metals, Creosote, Pentachlorophenol
Area:	Sampling and analysis of multiple environmental media, chemical fingerprinting, nature and extent of contamination, exposure
Project:	Oil spill and release event from oilfield facility
Plaintiff:	Shell Oil Company
For Defendant:	Viking Pump Corporation
Client:	Forman, Perry, Watkins, Krutz and Tardy
Services:	Forensic review of oil release, deposition, and testimony at trial
Contaminants:	Crude Oil, Petroleum Hydrocarbons
Area:	Run to failure practice, spill response, and remediation costs
Project:	Class Action Certification for creosote action
For Plaintiff:	Community of Pineville, LA
Client:	Steve Irving & Associates, et al
Services:	Sampling and analysis, expert reports, deposition
Contaminants:	Dioxins, PAHs, wood preserving chemicals
Area:	Sampling and analysis, forensic fingerprinting, nature and extent of contamination, exposure assessment
Project:	Nation-wide contamination from oil and gas operations
For Plaintiff:	Various Parties in Ecuador, et al
Defendant:	Chevron Oil Company, et al
Client:	Multiple
Services:	Expert reports, deposition

Contaminants:	Oilfield and petroleum hydrocarbons
Area:	Engineering cost estimates to remediate and restore contaminated soil, groundwater, and sediment
Project:	Contamination of private property from creosote operations
For Plaintiff:	Citizens in Alexandria, Louisiana
Client:	LLSS, et al
Services:	Sampling and analysis, expert reports, deposition
Contaminants:	Dioxins, VOCs, SVOCs, PAHs, wood preserving chemicals
Area:	Sampling and analysis, forensic fingerprinting, nature and extent of contamination, exposure assessment
Project:	Arbitration between two industrial groups
Client:	Yetter-Coleman
For Plaintiff:	Oxbow / GLC
Defendant:	PASE
Services:	Expert report, deposition, testimony at arbitration
Contaminants:	Opacity, sulfur compounds, particulates, other airborne contaminants
Area:	Air pollution control systems, stack corrosion, contract language
Project:	Salinity impact to agricultural farmland
Client:	Haik, Minvielle & Grubbs
For Plaintiff:	Dugas (Farmer)
Services:	Sampling and analysis, expert work, deposition
Contaminants:	Salinity, pesticides
Area:	Sampling and analysis, nature and extent of contamination, impact on crop yield
Project:	Creosote impact of commercial property in New York
Client:	Steve Fuchs / Keith Richman of New York
For Defendant:	Steve Fuchs
Services:	Expert report, testimony at trial
Contaminants:	Creosote, PAHs, Metals, Pesticides
Area:	Sampling and analysis, nature and extent of contamination, chemical fingerprinting
Project:	Class Action Certification Report
Client:	Woodfill Law Firm of Houston, Texas
For Plaintiffs:	Local Property Owners
Defendants:	Dow, Union Carbide, Elkem Metals, et al
Services:	Sampling and analysis, expert reports, testimony at deposition
Contaminants:	Dioxins/Furans, Metals, VOCs, SVOCs, Silica, other
Area:	Sampling and analysis, nature and extent of contamination, radius of influence
Project:	Remediation and restoration of historical wetlands
Client:	State of New Jersey (Kanner & Whitely)
For Plaintiff:	State of New Jersey
Defendant:	ExxonMobil, et al
Services:	Testimony at trial
Contaminants:	Petroleum Hydrocarbons, PCBs, Pesticides, RCRA Metals, Chlorinated Compounds
Area:	Engineering cost estimate to remediate soil, sediment, and groundwater contamination and restore portions of the refinery to productive wetlands
Project:	Remediation and restoration of oil and gas property
Client:	Gieger, Laborde and Laperouse of New Orleans, Louisiana
For Defendant:	Sanchez Oil & Gas
Services:	Expert reports, testimony at deposition
Contaminants:	Petroleum Hydrocarbons, Salinity, Metals, Miscellaneous
Area:	Nature and extent of contamination, soil and groundwater contamination, engineering cost estimating

Project:	Contamination of public and private properties from pesticide releases
Client:	Lightfoot, Franklin and White of Alabama
For Plaintiffs:	Local Citizens of Hattiesburg, Mississippi
Defendant:	Hercules, et al
Services:	Sampling and analysis, expert reports, and depositions
Contaminants:	Pesticides, Other
Area:	Nature and extent of contamination, household attic dust sampling and analysis, air dispersion modeling
Project:	Alleged contamination of ranch land by leaking petroleum pipeline
Client:	Hicks-Thomas of Houston, Texas
For Defendant:	Harvest Pipeline, Arrowhead Gathering, and Conoco-Phillips
Services:	Expert report and deposition
Contaminants:	Crude Oil, Saltwater, Flushed Soapy Water
Area:	Nature and extent of contamination in soil and groundwater, electromagnetic imaging / differential conductivity mapping, soil conditions, remediation and restoration
Project:	Alleged contamination of farmland by oil and gas field operations
Client:	Gieger, Laborde and Laperouse of New Orleans, Louisiana
For Defendant:	Sanchez Oil & Gas, et al
Services:	Expert reports, testimony at deposition
Contaminants:	Petroleum Hydrocarbons, Salinity, Metals, Miscellaneous
Area:	Nature and extent of contamination, soil and groundwater contamination, engineering cost estimating
Project:	Contamination of private properties from pesticide releases
Client:	Lightfoot, Franklin and White of Alabama
For Plaintiffs:	Citizens of Hattiesburg, Mississippi
Services:	Expert reports, testimony at deposition
Defendant:	Hercules, et al
Contaminants:	Pesticides, Associated VOCs
Area:	Nature and extent of contamination, household attic dust sampling and analysis, indoor air quality sampling and analysis
Project:	Contamination of private properties from carbon black and sulfur releases
Client:	Fitzsimmons Law Firm and King & Spalding Law Firm
For Plaintiff:	Columbian Chemical Company
Defendant:	Insurance Carriers
Services:	Expert reports and testimony at deposition
Contaminants:	Carbon Black, Sulfur Emissions
Area:	Nature and extent of impact from emissions, impact to ambient air quality
Project:	Contamination of private properties from pesticide releases
Client:	Lightfoot, Franklin and White of Alabama
For Plaintiffs:	Citizens of Hattiesburg, Mississippi, and City of Hattiesburg
Defendant:	Hercules, et al
Services:	Sampling and analysis, expert report, and deposition
Contaminants:	Pesticides, Associated COCs
Area:	Nature and extent of contamination, household attic dust sampling and analysis
Project:	Remediation and restoration of private property from salinity releases
Client:	Garcia & Martinez of McAllen, Texas
For Defendant:	Mo-Vac Services
Services:	Expert Report, deposition, and testimony at trial
Contaminants:	Salinity, chlorides
Area:	Nature and extent of contamination, soil and groundwater contamination, remediation and restoration

Project: Exposures and health impacts to receptors from coal combustion residue
 Client: Bordas & Bordas of West Virginia
 For Plaintiffs: Local citizens and workers
 Defendant: AEP, et al
 Services: Expert Reports, deposition
 Contaminants: Fine particles, dust, metals, radionuclides, Dioxins, other
 Area: Sampling and testing of CCR material, exposure assessment metrics

Project: Interpretation of Phase I and Phase II Environmental Site Assessments
 Client: West Law Firm
 For Plaintiffs: Commercial businesses and individuals
 Defendant: Individuals
 Services: Expert Report, deposition
 Contaminants: Petroleum hydrocarbons, salinity, metals
 Area: Significance of impact, source of contamination, cost to remediate the site

Project: Flooding of Subdivision in South Texas
 Client: Law Firm of Adrian Martinez
 For Plaintiffs: Homeowners
 Defendants: Homebuilders and Constructors
 Services: Hydraulic analysis of the site
 Contaminants: None
 Area: Flooding, hydraulic analysis, corrective action

CONTACT INFORMATION

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