



**RANDY D. HORSAK,
PE
PRINCIPAL
3TM CONSULTING,
LLC**

SUMMARY

Mr. Horsak is a scientist and registered Professional Engineer with more than 38 years of experience in all phases of environmental science and engineering: consulting, engineering, construction, operations management, office supervision, strategic planning, business development, proposal preparation, project management, litigation support, and expert 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, contaminated dust, and ecosystems. His experience includes a wide range of sites and facilities, including: abandoned sites, hazardous waste management facilities, 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, and public and private properties. Projects have included: Phase I due diligence assessments, Phase II and III site assessments, project master planning, site selection and evaluation studies, regulatory compliance audits, regulatory liaison and permitting, environmental impact analyses, licensing support, engineering feasibility studies, remedial investigations, exposure and risk assessments, forensic investigations, chemical fingerprinting, conceptual design, closure planning and remedial construction, remediation and restoration, decontamination, cost estimating, pollution prevention and waste minimization studies, and training.

PROJECT EXPERIENCE (OVERVIEW)

Mr. Horsak has had project and technical management responsibility for more than 500 environmental projects in the United States and more than 30 projects in Mexico, 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).

EDUCATION

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

Master of Science – Environmental Science, 1974 (Night Courses)
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

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 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 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.

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

Senior Engineer / Project Manager
Brown & Root
Houston, Texas

- Coordinated the site selection and environmental permits for a 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.

- Reviewed various environmental permit applications for a grassroots coal-fired power plant.
- Assisted in the development of standardized licensing and permitting support documents to be used on all fossil-fueled power plant projects.

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 applications for refineries 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 (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, and regulatory compliance audits for industrial and manufacturing facilities (steel production, refining, petrochemical, specialty chemicals, automotive, and

glass manufacturing) in Mexico (multiple projects).

- 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
Houston, Texas

- 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 by the remediation of contamination and the construction of productive wetlands.

PUBLICATIONS / PROFESSIONAL PAPERS

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 in 2010.

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.

Horsak, Bedient, Hamilton, Thomas, et al "Chapter 8 - Pesticides" Environmental Forensics (Book), Published in December 2005.

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 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

Defendant: Bay Plaza Realty

Firm: Mr. Robin Morse of Crain, Caton & James and Mr. Carl Brassow of Houston, Texas

Services: 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

Plaintiff: Citizens of Mossville

Community

Firm: Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana

Services: 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

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 in west Texas
Plaintiff: Senn Ranch
Firm: Mr. Bill Robins of Robins, Cloud & Lubel of Houston, Texas
Services: 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
Plaintiff: Katy Land Company and Pavestone Corporation
Firm: Mr. Tom Hoekstra of Godwin-Gruber of Dallas, Texas
Services: 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
Plaintiff: Citizens of Columbus, Mississippi
Firm: Mr. Hunter Lundy of Lundy & Davis of Lake Charles, Louisiana
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: Transformer
manufacturing facility in
Crystal Springs, Mississippi
Plaintiff: Citizens of Crystal
Springs
Firm: Ms. Meg McAlister
and Mr. Doug Mercier
of David Nutt &
Associates of Jackson,
Mississippi
Services: 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
Defendant: Realtors
Firm: 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
fields
Plaintiff: Rice farmers of
Louisiana
Firm: Mr. Hunter Lundy of
Lundy & Davis of Lake Charles, Louisiana
Services: 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
Plaintiff: Homeowners in Corpus Christi, Texas
Firm: Mr. Bob Hilliard of Hilliard & Munoz of Corpus Christi, Texas
Services: Expert report 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
Plaintiff: Citizens of Sutton, West Virginia
Firm: Mr. Vince Trevelli of The Calwell Practice of Charleston, West Virginia
Services: 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
Plaintiff: Citizens of Greenville,
Mississippi
Firm: Ms. Lee Rickard of
Cory & Rikard of Jackson,
Mississippi
Mr. Mike McGartland
of McGartland & Associates of
Ft. Worth, Texas
Services: 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
Plaintiff: Citizens of Crystal
Springs
Firm: Ms. Meg McAlister
and Mr. Doug Mercier
of David Nutt &
Associates of Jackson,
Mississippi
Services: 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
Plaintiff: Citizens of Beverly
Hills, California
Firm: Mr. Al Stewart and
Mr. Jim Piel of Baron & Budd
of Dallas, Texas
Services: Expert report and
deposition
Contaminants: Benzene, volatile
hydrocarbons, phthalate
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
Plaintiff: Citizens of Grenada,
Mississippi
Firm: Mr. Hunter Lundy of
Lundy & Davis of Lake Charles, Louisiana
Services: 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

Plaintiff: Citizens of Sutton,
West Virginia
Firm: Mr. Vince Treveli of
The Calwell Practice of
Charleston, West Virginia
Services: 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
Plaintiff: Citizens of Prairie
Grove, Arkansas
Firm: Mr. Clayton Davis of
Lundy & Davis of Lake
Charles, Louisiana
Services: 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
Plaintiff: Property owner in
New Iberia, Louisiana
Firm: 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
Plaintiff: Property owner in
Shreveport, Louisiana
Firm: 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
Plaintiff: Citizens of Columbus,
Mississippi
Firm: 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
fields
Plaintiff: Rice farmers of
Louisiana
Firm: Mr. Chris Piasecki of
Davidson, Meaux,
Sonnier & McElligott
of Lafayette, Louisiana
Services: 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
Plaintiff: Citizens of Nitro, West
Virginia
Firm: The Calwell Practice
and the James
Humphreys Law Firm
of Charleston, West
Virginia
Services: 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

Project: Contamination of rice
fields
Plaintiff: Rice farmers of
Louisiana
Firm: 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
Plaintiff:	Citizens of Proctor, West Virginia
Firm:	Mr. Chris Regan of Bordas & Bordas
Services:	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
Plaintiff: Brownell Land Company
Firm: 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
Plaintiff: Private Landowner
Firm: 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
Plaintiff: State of New Jersey vs Exxon
Firm: 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

Plaintiff: Citizens of Cass Lake, Minnesota

Firm: 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

Plaintiff: Citizens of Alexandria, Louisiana

Firm: McKernan 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, ambient
air, surface water,
indoor dust

Project: Contamination of private and commercial properties from Citgo oil spill

Plaintiff: Gray Plantation and other citizens near Lake Charles, Louisiana

Firm: Lundy, Lundy, Soileau, & South

Services: Sampling and analysis; expert reports and deposition; 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
Plaintiff: Citizens near McIntosh, Alabama
Firm: Reich & Binstock
Services: Expert report and deposition
Contaminants: DDT
Area: Engineering cost estimate to decontaminate and restore houses contaminated with DDT dust

Project: Contamination of private residences
Plaintiff: Citizens in Grenada, Mississippi
Firm: Lundy, Lundy, Soileau & South
Services: 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
Plaintiff: Citizens of Pineville, Louisiana
Firm: Lundy, Lundy, Soileau & South
Services: 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
Plaintiff: Shell Oil Company
Defendant: Viking Pump
Corporation
Firm: Forman, Perry,
Watkins, Krutz and
Tardy
Services: Forensic review of oil
release, deposition,
and testimony at trial
Contaminants: Crude Oil
Area: Run to failure
practice, spill
response, and
remediation costs

CONTACT INFORMATION

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