

CURRICULUM VITAE

James C. Hunter, R.G.

PERSONAL

Name: James Carl Hunter
Birthdate: December 22, 1948
Birthplace: Winchester, Virginia

Specialization: Acid Gas Injection Systems Design, Permitting and Operations; Reservoir Evaluation and Modeling; Geophysical Borehole and Seismic Interpretation; Well Site Supervision of Drilling, Logging, Testing and Completion; Workover Design and Operations; Hydrogeological Investigations, Modeling and Permitting; Expert Witness Support for Environmental and Oil/Gas Related Cases.

EDUCATION

Colorado School of Mines - 1986
M.S. Geology – Geology

University of New Mexico, 1980
B.S. (Honors) – Geology

PROFESSIONAL CERTIFICATIONS AND REGISTRATIONS

Registered Professional Geologist – State of California #4467

EXPERIENCE

April 1997 – Present
Consulting Senior Geologist
Geolex, Inc.
500 Marquette Avenue NW #1350
Albuquerque, New Mexico 87102

Duties, Accomplishments, Responsibilities:

Mr. Hunter plans and directs acid gas injection project for clients in New Mexico, Texas, Utah and other areas. His acid gas injection work involves initial feasibility studies, well design and AFE development, preparation and submittal of state and Federal permits, on-site well supervision, and well testing, completion, and subsequent operational support.

He also manages environmental investigations and analyses, primarily related to litigation support. He critically reviews the methods, results, and conclusions of other consultants and expert witnesses, as well as planning and implementing independent data collection, analysis and computer modeling. He also contributes to the preparation and review of Geolex's expert reports, and consults with clients and attorneys regarding response and litigation strategies. His recent projects have included:

1. Acid gas injection (AGI) project management for a total of 17 wells for clients including: Agave, Anadarko, DCP Midstream, Frontier Field Services, Holly Frontier, Regency, Santa Fe Midstream, Southern Union, Stakeholders Midstream, and Targa.
2. Develop and apply methods to calculate the migration of acid gas injected into underground reservoirs, incorporating reservoir petrophysical properties, acid gas phase equilibria over a wide range of pressures and temperatures, variable injection locations and rates, and ultimate acid gas distribution over the life of the injection project.
3. Evaluation of the current and long-term integrity of existing and planned wells that penetrate the injection zones to assure that no migration paths exist. As necessary, develop and direct programs to re-enter and remediate wells with casing and/or cement deficiencies.
4. Designing additional AGI wells that will be completed in existing, active AGI reservoirs. These wells require significant attention to metallurgy (corrosive-resistant alloys) and specialized cements. Drilling methods must also be modified to assure that acid gases are not released to adjacent formations or to the surface. Comprehensive safety plans, training and equipment are also used to assure personnel protection.
5. Providing regulatory interface with NMOCD and TRRC prior, during and after AGI well drilling, testing and completion. Responsibilities included permit negotiations and applications, preparation and submittal of requires sundries and interim reports, planning and supervising mechanical integrity testing, and overseeing post-drilling site reclamation.
6. Planned and implemented workover projects for AGI wells with operational problems, including hydrate blockages, gas bubbles, tubing and/or casing failures, and mechanical problems including surface and subsurface equipment.
7. Incorporated 3-D seismic studies and geophysical well logs to identify and characterize several deep injection targets for a Class I non-hazardous wastewater well in southeastern New Mexico. The project included the acquisition of seismic data over two areas, each approximately 9 square miles in extent. The data was processed and inversion techniques were used to identify zones with good potential porosity. The project is now proceeding with well site and well design phases.
8. Reviewed the soil and groundwater impacts from UST releases in 11 states in the Midwest and western US. Case involved cost allocation among previous and current site owners and insurance carriers. Developed detailed analyses of remediation costs-to-date, as well as projected future costs for

remediation and monitoring, and provided estimates for potential future liabilities for closed sites.

9. Developed site-wide geological model for petroleum releases in shallow, alluvial aquifers beneath a pipeline terminal in the Black Warrior Basin in Alabama. The case revolved over alleged impacts from hydrocarbon vapors to nearby landowners. Determined that migration of NAPL and dissolved-phase hydrocarbons were controlled by variations in grain size and permeability of subsurface strata. Also supported analysis of releases to air from contaminated surface and groundwater, demonstrating that no releases above levels of concern reached properties of adjacent plaintiffs.
10. Studied the impacts to soils and groundwater from oil & gas production facilities in Texas, where drilling wastes were improperly disposed of on land and into surface waters. Demonstrated that heavy metals as well as hydrocarbons were generated by the drilling processes, and had migrated to groundwater.
11. Evaluation and modeling of the chemical behavior of a complex, multi-source groundwater plume containing PCE, TCE, TCA, DCE and MeCl at the Redfield Site in Denver, Colorado, for Brown Group Retail. This case also included evaluation of the performance of groundwater control and treatment systems, and detailed studies of indoor air impacts from the shallow groundwater plume.
12. Investigation and modeling of historical and potential future behavior of a TCE plume originating from a former United States Air Force facility and migrating into a residential area for the U.S. Department of Justice. Potential indoor air effects and the effectiveness of mitigation systems were also evaluated.
13. Investigation of the sources, transport and fate of a PCE plume which has migrated from an industrial facility into a drinking water aquifer for Ingersoll Rand Corporation, Schlage Lock Division. The study has also investigated the effectiveness of groundwater containment and remediation systems, as well as the operation of wellhead control systems.
14. Groundwater investigations, chemical and stable isotope studies, and groundwater flow and contaminant-transport modeling to identify sources and flow paths for composite groundwater contamination plumes resulting from releases from multiple pipeline releases for Duke Energy Field Services.
15. Investigation of airborne lead contamination originating from former battery-recycling smelters in 3 sites in the central and western U.S. for AIG as insurers of a lead smelter company. This project involved the detailed analysis of smelting processes, and the development of models which allowed the identification of routine versus accidental releases of lead particulates to air and surrounding soils.

November 1993 to March 1997:
President
James C. Hunter & Associates
2529 Georgene NE
Albuquerque, New Mexico 87112

Duties, Accomplishments, Responsibilities:

Providing environmental compliance services to private and government clients, including semiconductor manufacturers, remediation contractors, and National Laboratories.

1. Development and implementation of waste management, treatment, disposal and compliance program for major semiconductor fabrication facility, including innovative techniques to decontaminate equipment in clean room environments.
2. Direction of remediation activities at 6 Voluntary Corrective Action sites at Los Alamos National Laboratory. These sites involved organic solvents, PCBs, demolition debris, and potentially radioactive wastes. Work was performed in radiological and explosive-ordnance control areas.
3. Design and installation of soil and groundwater remediation systems for combined solvent and hydrocarbon releases at a chemical supply facility.
4. Direction of remediation of soils and debris contaminated with hazardous and radioactive wastes at a USAF facility. This project also involved on-site classification and stabilization of wastes.

1991 to November 1993
Vice President, Technical Services
Monteverde Environmental Consultants, Inc.
11930 Menaul NE
Albuquerque New Mexico 87112

Duties, Accomplishments, Responsibilities:

Responsible for supervision of technical staff of hydrogeologists, chemists, and microbiologists. Also developed corporate and divisional budgets, prepared business and strategic plans, and supported business development and proposal efforts.

1. Directed preparation of OPA 90 Spill Control Plans for three product-dispensing facilities in New Mexico and Arizona. Evaluated existing conditions and spill control measures, developed additional measures and procedures for current compliance.
2. Analysis of chemical, stable-isotope and radioisotope impacts to archaeological sites and materials resulting from the Exxon Valdez oil spill.
3. Direction of remediation efforts at over 25 UST and AST sites, including soil removal, groundwater treatment, and bioremediation methods.
4. Litigation support and expert witness testimony in a criminal case involving allegations of illegal hazardous waste storage and disposal. This case also involved site investigations including soil sampling and analysis, groundwater monitoring, and analysis of contaminant transport.

1989 to 1991
Division Manager
Groundwater and Waste Management Division
Mariah Associates, Inc.
Albuquerque, New Mexico

Duties, Accomplishments, Responsibilities:

Headed Mariah's program to provide hydrogeologic and permitting services for clients in the western United States.

1. Investigation of potential impacts to cultural resources from construction activities related to the construction of the Waste Isolation Pilot Project near Carlsbad, New Mexico.
2. Field investigations and remediation studies related to releases from produced-water pits and releases from petroleum transportation and storage facilities.
3. Environmental assessments and audits of commercial and industrial facilities.

1984 to 1989
Program Manager
Geoscience Consultants, Ltd.
Albuquerque, New Mexico

Duties, Accomplishments, Responsibilities:

Provided compliance and consulting services for a range of private and government clients, including USEPA. Served as contract compliance inspector for EPA evaluations of RCRA and CERCLA sites. Developed and implemented waste minimization audits for Federal facilities. Supervised technical staff division, including chemists, geologists, biologists, and industrial hygienists.

1. Direction of document review and site audits for all RCRA and CERCLA investigations at the Idaho National Engineering Laboratory. These services were provided under contract with USEPA and included hazardous waste permits, corrective action studies and work plans, RI/FS activities, closure plans, groundwater monitoring, and data management, sampling and analysis, and QA/QC plans. Site issues involved soil and groundwater contamination by TCE, PCE, metals and radionuclides.
2. Direction of a site investigation related to the Rocky Mountain Arsenal CERCLA site. Design and installation of monitor well clusters, sampling and analysis of soil and groundwater, and analysis of stream/aquifer interactions. Groundwater contamination involved TCE, PCE, and pesticides.
3. Quality Assurance Quality Control oversight for groundwater monitoring of organic solvent plume at NASA White Sands Test Facility. Directed the efforts of chemists and geologists in reviewing and validating monitoring data from over 20 monitor wells, and integrated groundwater data with geologic, seismic and soil-gas surveys. Supervised and edited report preparation and presentations to NASA and regulatory agencies.
4. Project Manager for development of expert testimony in support of revised produced-water regulations in the San Juan Basin. Performed well-site investigations (soil and groundwater sampling and monitoring) and developed computer models for transport and fate of hydrocarbons in groundwater.
5. Direction of document review and site inspections (under contract with USEPA) for over 25 sites nationwide, including the Idaho National Engineering Laboratory and the Rocky Mountain Arsenal. Work included review of plans, site inspections, program quality assurance, and participation in negotiations with state and Federal regulatory agencies. Private-sector work has included RCRA permitting, design and installation of groundwater monitoring networks, site characterization, closure plans, and remedial action.

1982 to 1984
Teaching and Research Assistant
Colorado School of Mines
Golden, Colorado

Duties, Accomplishments, Responsibilities:

Responsible for developing and teaching undergraduate courses in earth materials, structural geology, and petroleum geology. Also organized graduate field seminars in mapping and interpreting complex structural areas.

1981 to 1982
Staff Member
Geochemistry Group
Los Alamos National Laboratory
Los Alamos, New Mexico

Duties, Accomplishments, Responsibilities:

Co-Principal investigator for the State-Coupled Low Temperature Geothermal Resource Program. Planned and conducted field studies related to geothermal gradients in northern New Mexico.

1979 to 1981
Exploration Geologist
Tenneco Minerals, Inc.
Tucson, Arizona

Duties, Accomplishments, Responsibilities:

Explored for base, precious, industrial and energy minerals throughout the western United States. Planned and supervised sampling, mapping and drilling projects, prepared recommendations for management.

PUBLICATIONS

Hunter, J. C. and Gutierrez, A.A.: Redundant AGI Wells for Gas Processing Plants: Operational, Environmental, And Regulatory Benefits. AGIS VI International Symposium; Houston, Texas USA, October 27, 2016.

Gutierrez, A.A. and Hunter, J. C.: Review and Testing of Radial Simulations of Plume Expansion and Confirmation of Acid Gas Containment Associated with Acid Gas Injection in an Underpressured Clastic Carbonate Reservoir AGIS V International Symposium, Banff, Alberta, Canada May 21, 2015

Gutierrez, A.A. and Hunter, J. C.: Control and Prevention of Hydrate Formation and Accumulation in Acid Gas Injection Systems during Transient Pressure/Temperature Conditions. AGIS IV International Symposium Calgary, Alberta, Canada, September 25, 2013.

Nelson, E.P. and Hunter, J.C., 1986; Laramide Thin-Skinned Deformation in Permian Rocks, Fra Cristobal Range, South Central New Mexico; in New Mexico Geological Society Thirty-Seventh Annual Field Conference Guidebook, October 1986.

Shagam, J.Y., Hunter, J.C., Brown, W.J., and Scott, R.M., 1992; Microbial Remediation of a UST Site in Albuquerque's South Valley; presented at New Mexico Environment Department First Annual Conference on the Environment, Albuquerque, New Mexico, September 1992.

- Hunter, J.C. and Gutierrez, A.G., 1985; Exploring for Groundwater in Fractured Carbonates, East-Central New Mexico; in Proceedings of the Association of Groundwater Scientists and Engineers, Western Regional Conference, January 1985.
- Hunter, J.C. and Nelson, E.P., 1984: Complex Laramide Deformation in the Fra Cristobal Range, New Mexico; in Proceedings of the Geological Society of America, Cordilleran Section Conference, Durango, Colorado, May 1984.
- Wilson, J.L., Van Allan, B.R., and Hunter, J.C., 1984: Sunset Ridge Fluorite Deposit, Sierra County, New Mexico; New Mexico Geology, February 1984.
- Hunter, J.C., 1983: Measured Geothermal Gradients in northern New Mexico; Los Alamos National Laboratory Special Report, DOE/IDO/1717-4.
- Hunter, J.C. and Ingersoll, R.V., 1981: Cañas Gypsum Member of the Yeso Formation; New Mexico Geology, September 1981.