



***Paul Pierce MSc, BSc
Manager of Mine Development***

Education

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| 1985 | MSc in Mining Engineering,
New Mexico Institute of Mining |
| 1971 | BSc in Mining Engineering,
New Mexico Institute of Mining |

Professional Experience

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|-------------------|---|
| 2005 -
Present | TM Associates
Management & Engineering Consultant <ul style="list-style-type: none">• Provided management and supervision to mining exploration project. |
| 2002 -
2005 | New Mexico Institute of Mining, Bureau of Mine Inspection
State Inspector of Mines <ul style="list-style-type: none">• Conducted field investigations of serious accidents and fatalities• Inspected industrial operations for compliance to federal and state safety code provisions• Participated as state representative on national mining and safety boards. |
| 1995 -
2002 | Bechtel
Senior Engineering Specialist,
Lead Design Engineer,
Tunneling Engineer,
Yucca Mountain Project <ul style="list-style-type: none">• Subject Matter Expert on backfill design and operations and underground facility closure. |

Continuing Education, cont'd

- Directed evaluation and design team on underground geo-chemical/thermal-hydrologic effects.
- Designed underground structures and material handling and placement equipment.
- Developed conceptual plug and seal designs for underground repository.

1986 -
1995

S Cohen & Associates, Inc

Environmental and Mining Consultant

- Conducted nationwide review of uranium mines and mills for Report to Congress.
- Expert witness on radon emissions from surface and underground mines at federal public hearings concerning passage of national air quality emission standards.
- Evaluated large borehole drilling for underground oil recovery in a Gulf Coast salt dome.
- Mining engineer for shaft sinking in the Carlin District of northern Nevada.
- Mining engineer for mine development of an gold project near Prescott Valley, Arizona
- Provided chemical engineering to recovery of metallic minerals and organic substances from oil sludge and tar sand rock.

1981 -
1986

Standard Oil Company of Ohio (SOHIO)

Radiation Safety Officer/Technical Supervisor, Project Manager, Senior Mining Engineer (Resource Development Specialist), Construction Supervisor, Operations/Ventilation Engineer

SOHIO Western Mining Company L-Bar Uranium Operations

- Planned and supervised decommissioning of underground mine and mill facility.
- Supervised mill tailings stabilization and seepage control program.
- Developed and supervised operation of pneumatic backfill system.
- Prepared long range production requirements and planned mine development and extraction.
- Supervised ventilation department.

*Professional Experience, cont'd**SOHIO Shale Oil Company*

- Liaison between multiple company consortiums to establish business strategies and conduct technical research.
- Provided total facility plans, life cycle costing, and return-on-investment evaluations for synfuel mining and processing projects.
- Conducted geological exploration program in eastern Utah and western Colorado for oil shale and tar sands.
- Prepared technical and financial feasibility study of fire-front initiation and control in in-situ oil shale retort applications.
- Provided construction supervision of shaft sinking and underground development of White River Oil Shale facility.
- Performed technical liaison duties between SOHIO Shale Oil Company and Sinclair Oil Company joint venture to secure contiguous land tracts for commercial development.

1976 -
1980

Phillips Petroleum Company

Senior Mining Engineer/Chief Project Engineer

- Prepared technical and financial of strategic and energy mineral deposits including coal, gold, molybdenum, nickel, tar sands, and uranium mineral resources.
- Provided total facility planning, life cycle costing, and return-on-investment evaluations.
- Developed engineering concepts and provided liaison for a multiple company consortium to develop a large diameter hole drilling system.
- Designed mechanical equipment for hoisting, pumping, and ventilation in deep mining operation.
- Performed structural analyses of hoisting and shaft sinking facilities.
- Established chemical and cement grouting program.
- Constructed wastewater treatment and disposal facility.

1973 -
1976

Kerr-McGee Nuclear Corp

Project Engineer/Production Supervisor
Ambrosia Lake Operations

- Supervised production operations in deep, underground modified room-and-pillar uranium mines.

Professional Experience, cont'd

- Project engineer for:
 - design, costing and construction of large axial and centrifugal fan systems
 - air compressor systems
 - mine hoists and head frames
 - pipelines, pumps, and stowing facilities for pneumatic, slurry, and water transportation systems
 - heavy media separation and chemical extraction equipment
 - acid heap and vat leaching systems; buildings
 - roads
 - large concrete foundations
 - mine shaft linings.
- Supervised site preparation and operations of large diameter, multiple borehole drilling program.
- Conducted grouting program to stop water incursions into critical underground mine structures.
- Constructed and operated wastewater treatment facilities.

1971 -
1973

Pittsburgh and Midway Coal Mining Company

Production Engineer,
McKinley Mine

- Performed mine surveying and preparation of production reports and schedules.
- Supervised reserve drilling program and prepared mining plans.
- Supervised reclamation of spoil piles.
- Conducted health and safety training.
- Monitored personnel dust and noise levels.

1970 -
1971

U.S. Bureau of Mines

Staff Technician,
Wilderness Resource Study
Chino Mine Heap Leaching Study

- Performed geologic evaluation of gold mine prospects within the Gila Wilderness Area.
- Prepared net flow analyses and design for enhanced heap leaching dump at the Chino Mine.

Professional Experience, cont'd

1971 -
1971

Consolidation Coal Company

Drilling Supervisor, Logging Technician

- Directed coal exploratory drilling and analysis program throughout western Colorado.
- Performed rock core analysis, borehole logging, mapping, and reserve calculation.

1970 -
1970

Texas Gulf Sulfur Company

Mine Technician,
Cane Creek Potash Mine

- Provided sampling and labor for ventilation department in gassy mine.
- Prepared reserve calculations for deep brine dissolution and in situ' recovery program.
- Assisted in demobilizing underground mining operations and removing mine equipment.

Professional Affiliations

Society for Mining, Metallurgy, and Exploration, Inc.,
Past Director, Central New Mexico Section

Association for the Advancement of Cost Engineering
(AACE) International, Section Director

AACE International #1867
Certified Cost Engineer

Mine Safety and Health Administration
Certified Instructor

Publications

Long Term Encapsulation of Uranium Mill Tailings, presentation at American Nuclear Society Meeting on Decommissioning, Decontamination, & Remediation, August 11, 2005.

Six official state (New Mexico) accident and fatality reports based on site investigations.

2002, 2003, and 2004 Annual Reports to the Governor in accordance with New Mexico state statutes.

Publications, cont'd

A Financial Analysis of Comparative Petroleum and Mineral Project Investments, Cost Engineering, The AACE International Journal of Cost Estimation, Cost/Schedule Control, and Project Management, April 2003.

Foundation Soil Cleanup Depths for Removing Radium Contamination Causing Elevated Indoor Radon, presented at Waste Management 92 Conference, Dr. J. Maura and P.E. Pierce (S. Cohen & Associates, Inc.), K.K. Nielson and V.C. Rogers (Rogers and Associates Engineering Corporation), B. Hull (U.S. EPA), September 1991.

Forty-three publications supporting Department of Energy and Environmental Protection Agency contracts (list available upon request).