

GROSVENOR ENGINEERING COMPANY

2003



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GROSVENOR ENGINEERING COMPANY CORPORATE PROFILE

Grosvenor Engineering Company (GEC) is a mining consulting firm formed in 1985 by Niles E. Grosvenor, P.E. and David E. Krebs, P.E. Niles retired in 2001, but is still available as a special consultant on selected projects. David E. Krebs and Sandra J. Krebs are the owners and principals of the firm. A resume for Dave follows this page.

Since 1985, GEC has completed over 185 engineering assignments in coal, copper, trona, precious metals, phosphate, potash, aggregate, salt, and stone. These projects include reserve and project evaluations, mine planning, operational audits, loan validation and monitoring, litigation support, acquisition support, valuation and assistance in sale of precious metals royalty, equipment appraisal, and insurance claims. Various projects included expert testimony in court and before arbitrators. GEC projects have been located throughout the United States and in Canada, Bulgaria, Indonesia, and Mongolia.

Clients of GEC include major banks, mining companies, electric utilities, property owners, investors, insurance companies, and law firms. We are proud of the wide variety of projects we have successfully completed. We specialize in a quality product, rapid response, and careful cost control. Through the use of carefully selected subcontractors and associates in computer applications, technical illustration, geology, design engineering, and mine management, GEC is able to furnish staff for a wide range of projects in a prompt and cost effective manner.

GROSVENOR ENGINEERING COMPANY

DAVID E. KREBS
PRESIDENT

Education: Colorado School of Mines; Golden, Colorado
Engineer of Mines Degree (EM) 1966

U. S. Army Engineer Officer School: Fort Belvoir, VA
ROTC - Engineer Officer Basic Course 1967

University of New Mexico; Albuquerque, New Mexico
Basic Management Course 1978

Licenses: Registered Professional Engineer - Arizona No. 9414
Registered Professional Engineer - Colorado No. 26197
Registered Professional Engineer - Utah No. 3897 (149475)
Registered Professional Engineer - Wyoming No. 1703
Registered Land Surveyor - Arizona No. 17316

Memberships: Society of Mining Engineers of AIME
Colorado School of Mines Alumni Association
Colorado Mining Association
Rocky Mountain Coal Mining Institute
Denver Coal Club

Experience:

1985 - pres Grosvenor Engineering Company; Littleton, Colorado
President, (1985-2001 Vice President)

Responsible for staff and project management. Consulting projects include analyses of operating coal mines in Utah and Missouri; evaluation of coal projects in Wyoming, Colorado, and Alabama for large bank loans; data preparation for litigation regarding coal and metal operations and contracts in Wyoming, Colorado, Montana, Utah, Alabama, and Arizona; precious metal property evaluations in Colorado, Montana, and Nevada; copper mine evaluations for bank loans in Arizona and New Mexico; expert testimony in a coal contract arbitration in Washington D. C., limestone quarry operation in Arkansas, and in coal bank loan case in Arkansas; depositions in coal litigation cases; litigation support for insurance companies on EPA superfund sites; numerous mine property evaluations in Colorado, Montana, Indiana, Missouri, New Mexico, Arkansas, Alabama, and Utah; litigation support in several mine accident cases; dragline study for Florida phosphate operation; evaluation of operating trona mine, appraisal of specialty stone and aggregate quarries, evaluation of surface coal mines in Mongolia and

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proposed project in Indonesia; engineering support and audit for insurance claim for flooded salt mine shaft in Canada, insurance claim for roof fall at salt mine in Canada, and claim regarding coal mine hoist accident in Alabama. Assist royalty owner in valuing and selling a \$36 million precious metal net smelter royalty.

1982 - 1985 Gates Engineering Company; Denver, Colorado
Chief Mining Engineer, Denver Office

Responsible for mining engineering staff and project management. Consulting projects included lignite, gold, and numerous coal evaluations in Texas, Colorado, Washington, Wyoming, and Missouri, plus site visits to operations in Tanzania and Germany. These projects included evaluations for acquisitions, review of mine plans, mine feasibility studies, operating analyses of existing operations, and data preparation for litigation.

1980 – 1982 Ertec Rocky Mountain, Inc.; Denver, Colorado
Senior Mining Engineer

Project manager on numerous mine evaluations for surface coal, lignite, oil shale, and precious metals projects in Colorado, Alaska, Nevada, Texas, and Canada. These consulting assignments included evaluations of coal and lignite properties for purchase, mine design of a small mine to supply coal to a village on the North Slope of Alaska, a conceptual review of open-pit mining methods for a proposed large oil-shale operation, and mine planning for an open-pit gold project.

1979 – 1980 Council of Energy Resource Tribes; Denver, Colorado
Principal Mining Engineer

Furnished technical assistance to 25 CERT member tribes having coal, oil, gas, and uranium on their reservations. Analyzed proposed projects, represented tribal interests and participated in selecting the most desirable proposals and forms of project management for tribal clients.

1977-1979 Western Coal Co. (Now Sunbelt Mining Co.)
(Subsidiary of Public Service Company of New Mexico);
Albuquerque, New Mexico
Mining Engineer

In charge of exploration, reserve calculations, environmental analysis, equipment selection, and mine plan preparation for a new surface coal mine scheduled for 1980+ operation. Eventual production to reach five million tons per year. Project received state permit but was indefinitely postponed.

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1974-1977 Stearns-Roger, Inc.; Denver, Colorado
Project Engineer - Mining and Metallurgy Division

Various project duties including equipment selection, bid comparisons, expediting, and client liaison on surface and underground projects including coal, molybdenum, oil shale, and uranium.

1971 – 1974 Peabody Coal Company; Kayenta, Arizona
Area Engineer

Managed all local engineering field and office work for three operating surface coal mines and two prospect areas. One mine was brought into production during this period. Duties included supervision of map preparation, royalty and production reports, reports to USGS, drilling and estimating of reserves, control work for six-mile overland conveyor, reservoir construction, and certified map preparation for Bureau of Mines (MESA). Two of the mines were large dragline operations.

1969 – 1971 Inspiration Consolidated Copper Company;
Inspiration, Arizona

Systems Engineer

Supervised the adapting of geologic and engineering data for computer evaluation, pit design, and grade control.

Senior Engineer

General mine engineering, surveying, estimating, and slope stability studies at a large truck-shovel open pit copper mine.

1967 - 1969 United States Army Corps of Engineers
1st. Lt. Assistant Operations Officer; 35th Engineer Battalion (Combat), Vietnam

Engineering planning, design, inspection, and supervision related to construction projects including roads, bridges, drainage, slope stabilization, soils studies, and base compound construction.

2Lt. Assistant Inspector; Post Engineers, Fort Carson, Colorado

Inspection of civilian contractor construction projects including facility rehabilitation, painting, asphalt paving, and powerlines.

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1966 – 1967 Pittsburg and Midway Coal Mining Company; Kansas City, Missouri
Junior Engineer

Property evaluations, land boundaries, mapping, and coal reserve estimates.

Assistant Mine Engineer; Mine 19, Hallowell Kansas

Surveying, pit control, drainage, and haul roads at a surface coal mine employing a large stripping shovel and a dragline.

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Selected Consulting Projects while at Grosvenor Engineering Company:

1. **Insurance Claim – Flooded salt mine shaft, Canada.**
Krebs was one of the technical consultants working for the insurance carriers monitoring the shaft and mine rehabilitation efforts. Tasks included periodic inspection trips, review of design plans, cost estimates, review of claims for charges; and liaison with insurance representatives, accountants, and attorneys.
2. **Engineering reviews as part of bank loan due diligence.**
Krebs has worked for banks and financial institutions on several engineering reviews for large loans (\$150 to 500 million) to mining companies. These have included coal, gold, copper, and salt projects. Tasks included site inspections, reserve verification, operational audits, equipment and staffing reviews, etc.
3. **Sale of Royalty Interest.**
Krebs assisted the royalty owner in valuing and negotiating the sale of a net-smelter royalty interest (\$36 million) on a large precious metal operation.
4. **Coal Industry Review – Mongolia.**
Krebs reviewed the coal industry of Mongolia, inspected the two largest coal mines, and made recommendations for improving production. This project was on behalf of a major international bank.
5. **Operational Audit – Surface Coal Mine**
Krebs assisted in the review of a large dragline stripping operation, made recommendations for cost improvements, mine plan revisions, and monitored implementation of these suggestions.
6. **Expert Witness – Coal**
Krebs assisted bank defense attorneys in evaluating a failed thin-seam coal project during litigation. Testified in state court. Tasks included reserve estimates, cost estimates, mining plans, historical review of the local mining industry, and pertinent coal market.
7. **Expert Witness – Aggregate**
Krebs assisted the mine operators defense attorneys in a lawsuit at a limestone quarry. Testified in state court. Tasks included cost reviews, “industry standard” operating practices, mine plans, and reserve recovery.
8. **Litigation Support - Environmental**
Krebs assisted the staff of Office of the Colorado Attorney General and its other experts in evaluating the second phase of the Summitville Superfund litigation. Work included historical research, mining and milling practices, response to interrogatories, and critique of selected expert reports.

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List of Typical Projects Project Numbers in Parentheses (000)

1. Operational Audit and mine plan. Performed cost and efficiency improvement study for a large surface coal mine. Assisted in complete re-evaluation and change in mine plan. (101)
2. Operational Audit. Assist with time studies on continuous miner and longwall sections at underground coal mines. (102)
3. Litigation support. Present expert witness testimony and/or engineering support regarding mine costs, manpower, mining methods, construction, dust sampling, reclamation, or mine production. (103, 106, 115, 127, 129, 148, 160, 163, 167, 168, 171, 198, 203, 208, 219, 221, 223, 226, 229, 258, 266, 285, 286, 287)
4. Engineering audit. Perform engineering audits of large surface and underground coal mines for bank loans or possible purchase. (104, 146, 175, 263, 274)
5. Damage litigation. Present expert testimony regarding mine fire and damages. (105)
6. Contract Litigation. Present expert testimony regarding coal mine reserves and/or mining costs. (106, 127, 149, 150)
7. Cost study, engineering review. Evaluate requirements and prepare cost estimates for permanent closure of underground coal mine for operator or royalty owner. (107, 251)
8. Mine permit. Review lease and permit data for a coal reserve owner. (108, 117, 130)
9. Price audit. Review cost, price, and royalty payment data on surface coal mines and underground metals mines for royalty owner or purchaser. (109, 159, 180, 253)
10. Subsidence litigation. Provide expert witness testimony in subsidence damage litigation. (110, 172)
11. Accident litigation. Provide expert witness testimony and/or engineering advice in surface and underground mine accident litigations (112, 121, 143, 169, 173, 174, 185, 193, 199, 213, 267)
12. Coal reserve evaluation. Prepare coal reserve audit and estimate net-present-value and/or market values of various projects. (114, 158, 166, 194, 293)
13. Tax litigation. Provide expert testimony on coal property in dispute with Internal Revenue Service. (115)

14. Rock mechanics and subsidence. Evaluate potential subsidence problems for construction projects, oil well drilling, gold, coal, and potash mines. (118, 216, 217, 262)
15. Reserve evaluation and operational audit. Verify reserves and coal surface mining operation for potential investor or sale. (120, 132, 250)
16. Property evaluation, precious metals. Examine property and reserves at precious metals projects for potential investors or royalty owners. (125, 230, 253, 256)
17. Contract compliance. Assist utilities in verifying contract compliance of fuel shipments. (126, 128)
18. Engineering audit. Perform engineering audit of large copper mines in Arizona and New Mexico; and large precious metals mines in Nevada and Montana for bank loans and investments. (139, 152, 164, 187, 191, 247, 253)
19. Engineering and operating audit at a large underground trona mine, to include equipment productivity, ventilation, and mine planning. (142, 145)
20. Litigation support. Establish tonnage and value of coal reserves under right-of-way taken by condemnation. (144, 202)
21. Coal property evaluations, reserve verifications, general engineering review and support. (114, 122, 131, 154, 155, 157, 166, 176, 177, 179, 180, 182, 183, 188, 201, 205, 209, 210, 212, 228, 233, 234, 259, 263)
22. Market price study, Utah coal. (148)
23. Provide expert testimony at state utility rate commission hearings. (162)
24. Obtain and evaluate quotations for alternate coal supply for utility. (178)
25. Review mine plans and dragline productivity at a Florida phosphate operation (195)
26. Serve as consultants and informal arbitrators in setting coal price under an existing contract (197)
27. Prepare engineering and financial estimates, property evaluation, permitting support, and general consulting review for proposed underground hydraulic coal mine (196, 214)
28. Determine fair market value for a specialty stone quarry and aggregate deposit. (211, 265)
29. Prepare data for logical mining unit application. (200)

30. Provide engineering review and support for foreign coal and metal mines for potential investor, banks, or government agencies. (206, 207, 215, 220, 230, 233, 237)
31. Serve as arbitrator in mine construction and/or contract cases. (224, 227, 235, 260)
32. Review technical data related to patent applications for mining related equipment. (232)
33. Assist with engineering review of insurance claims, salt, coal, metals (229, 240, 242, 254, 258, 264, 281)
34. Litigation support, metal mine cost evaluation. (255)
35. Value precious metal net-smelter-royalty, assist with audit of payments, and assist in sale of royalty interest. (253)
36. Historical research and litigation support related to superfund sites in Colorado, Missouri, Utah, and Idaho. (226, 229, 258, 285, 286, 287, 294)

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Partial Client List

Alamito Company
Allen & Associates, Inc.
Allianz Insurance Company
American Arbitration Association
American Mine Services, Inc.
Arch Mineral Corporation
Arthur Andersen & Co.
Associated Electric Cooperative, Inc.

Barber, McCaskill, Amsler, Jones & Hale
Bethel Development Corporation
Black Beauty Coal Company
Brownstein Hyatt Farber & Strickland
Bullivant Houser Bailey Pendergrass & Hoffman
Burns, Wall, Smith & Mueller

Carpenter, Comeau, Maldegen, Brennan, Nixon & Templeman
Charleston National Bank
Coal Fuels Corporation
Colorado-Ute Electric Association, Inc.
Colorado State Auditor
Colorado Board of Land Commissioners
Colorado Office of the Attorney General
Coors Energy Company
Compagnie Generale Des Matieres Nucleaire
Conda, Wesley D. Inc.

Denver, City and County of
Doherty Rumble & Butler
Ducker, Gurko & Roble
Duree Barton LLC

Ebasco Services, Inc.
Energy Fuels Coal, Inc.
Escalation Consultants, Inc.

Fabian & Clendenin
Ferrous American Company
First Commercial Bank of Little Rock

First Interstate Bank of Denver
FMC Corporation
Forensic Expert Advisors
Fossil Fuels Resources, Inc.

Gales Engineering Company
Gates, L. A. Company
GE Capital Services
Gelt Fleishman & Sterling P.C.
General Atomics
General Chemical Corporation
Gerash, Robinson & Miranda P.C.
Gild, Yule & Company
Goodson and Associates, Inc.
Grynberg Petroleum Company

Hall and Evans L.L.C.
Hannon Law Firm
Harris Group, Inc.
Harrison-Western Corporation
Heller Financial
High-Point Rendel
Hodder, E. J. & Associates
Holme Roberts & Owen
Holland & Hart
Hoosier Energy Rural Electric Cooperative, Inc.
Hulse, Nelson & Wanek

IMC Fertilizer, Inc.
Indianapolis Power & Light Company

J. F. T. Agapito & Associates
Johns Manville

K & R Coal Company
KRW Consulting
Kellogg Corporation
Kemp Smith Duncan & Hammond
Kentucky Utilities Company
Kettelkamp & Brown, P.C.
Kohl, Sidney Company

Land Reclamation Systems, Inc.
Landmark Reclamation
Locke Purnell Rain Harrell
Logan and Morton
Long Term Contract Consultants, Inc.

Love, Wise & Woodroe
Lower Colorado River Authority

MCC Construction Corporation
McLarens Toplis North America Inc.
Mehaffy & Weber
Mt. Harris Coal Company
Montgomery Little Young Campbell & McGrew
Mound, Cotton & Wollan

NCIG Financial
Nevada Electric Investment Company
Nevada Power Company
New Mexico Potash Corporation
Noranda Minerals, Inc.
Northern Indiana Public Service Company
Norwest Banks – Billings, Montana

Peck and Lawrence
Pepper Hamilton & Scheetz
Platte River Power Authority
Porter and Travers

Raytheon Engineers and Constructors
Robinson Sheppard Shapiro
Rocky Mountain Energy
Ruby Construction Company
Russian-American Technology Alliance

St. Paul Fire and Marine Insurance Company
Schiff Hardin & Waite
Schuller Corporation
Seminole Fertilizer Corporation
Shepherd Miller Incorporated
Sierra Pacific Power Company
Sloan, Rubens & Peeples
Slover & Loftus
Spence, Moriarity & Schuster
Swiss Bank Corporation

Tampa Electric Company
Thiel, Dale Real Estate Company
Tg Soda Ash, Inc.
Tucson Electric Power Company

United Mining Corporation
United States Fidelity and Guaranty Company
US West Financial

Valley Camp of Utah, Inc.
Vanatta, Sullan & Sandgrund
Vento, Joseph A.

Watson, Nathan, and Brewer, P. C.
Welborn Dufford Brown & Tooley, P. C.
Wiley, Rein & Fielding
Welsh Engineering, Inc.
Williams & Bailey Law Firm, L.L.P.
Williams Turner & Holmes, P. C.
Wolf and Tiedeken
Wood, Ris & Hames
Woodward-Clyde Consultants
World Bank
Wyoming Fuel Company
Wyoming, Department of Environmental Quality

GROSVENOR ENGINEERING COMPANY

FEE SCHEDULE 2003

David E. Krebs, P. E., President, Mining Engineer	\$125.00/hour
Special Associates / Experts	By Arrangement
Niles E. Grosvenor, P. E., Mining Engineer, Special Projects	\$150.00/hour
Mining Engineers	\$65-110.00/hour
Coal Geologists	\$65-100.00/hour
Precious Metals Geologists	\$65-100.00/hour
Mineral Economist / Financial	\$65-100.00/hour
Engineering Aides / Technical Research	\$45.00/hour
Drafting / Technical Illustration	\$45.00/hour
Secretarial	\$45.00/hour

Private vehicles will be charged at \$0.40/mile
Airline travel is by coach class, discount rates where available
Travel time is billed to the project.
Primary out of metro area travel is billed at ½ rate.

Computer / word processor / printer included at no charge

In-house copies charged at \$0.10 per page
In-house telefax charged at \$0.25 per page

Identifiable expenses will be invoiced at actual cost.

Manhours are invoiced to the nearest 0.1 hour

Day rates rather than manhour rates can be arranged where appropriate.

TERMS: Net 30 days, interest at 1.5% per month thereafter