

JOHN HENRY BEYER

Lawrence Berkeley National Laboratory
Earth Sciences Division

One Cyclotron Road, MS 90-1116, Berkeley, California 94720
Tel: 1-510-486-7954, Fax: 1-510-486-5686, E-mail: jhbeyer@lbl.gov



EDUCATION

MBA	Executive MBA Program	Golden Gate University, San Francisco, 1987
Ph.D.	Engineering Geoscience	University of California, Berkeley, 1977
M.A.	Geophysics	Washington University, St. Louis, 1969
B.S.	Physics	Lafayette College, Easton, Pa., 1966

Other Relevant Education:

Environmental Law and Regulation	UC Berkeley Extension
Groundwater Hydrology	UC Berkeley Extension
Geologic Field Mapping	Indiana University Geologic Field Station

REGISTRATION

Registered Geophysicist in California, GP-859

REPRESENTATIVE EXPERIENCE

Lawrence Berkeley National Laboratory, Berkeley, California Dec. 2007–present
Program Manager IV, Geophysics Department, Earth Sciences Division (ESD)

- ♦ Principal Investigator for West Coast Regional Carbon Sequestration Partnership (WESTCARB) projects in California and Arizona. Efforts include coordinating ESD scientists in geophysics, geochemistry and hydrogeology to integrate and implement research on modeling and monitoring the fate of geosequestered CO₂; co-authoring permit applications to regulatory agencies; contracting with and coordinating outside entities (USGS, EPRI, research subcontractors, industry partners); developing work scope and budgets for DOE; and engaging in outreach about global climate change and geologic CO₂ storage with stakeholders (e.g., technical organizations, elected officials, regulatory agencies, non-governmental organizations, the public).

California Energy Commission, Sacramento, California Aug. 2000–Nov. 2007
Energy Specialist II

- ♦ Managed Public Interest Energy Research (PIER) contracts for the development of clean, efficient, electricity generation systems. Used technical and business expertise to evaluate proposals and manage projects, seeking market success and public benefits.
- ♦ Evaluated geothermal energy R&D proposals for PIER Renewables and the Geothermal Resources Development Account. Provided technical reviews of ongoing geothermal projects.
- ♦ Served on U.S. Department of Energy peer review panels in 2001, 2003, and 2005 to evaluate ongoing projects in the DOE Geothermal R&D Program and recommend changes in program emphasis. In 2006, served on a DOE panel scoring new proposals to the Geothermal Program.

Sociedade Geotérmica dos Açores (SOGEO), the geothermal development branch of Aug.–Sep. 2006
Electricidade dos Açores, the Azores electric utility; Azores, Portugal Feb.–Sep. 2000
Geophysical Management Consultant (for GeothermEx Inc.)

- ♦ Planned and managed geophysical surveys on São Miguel and Faial Islands (2006), and Terceira Island (2000) in the Azores to characterize geothermal resources. Coordinated planning among SOGEO, GeothermEx, and the geophysical contractor, which required skills in project management,

negotiation, logistical coordination, and budgeting; and knowledge of geophysical field operations, data collection, data processing and interpretation.

- ♦ Wrote interpretation reports describing the geothermal reservoir models and recommended well locations. Test drilling on Terceira confirmed a new geothermal resource, now being developed.

ElectroMagnetic Instruments, Inc. (now Schlumberger), Richmond, California Feb. 1999–Feb. 2000
Proposal Manager and Technical Writer (Consultant)

- ♦ Wrote two successful research proposals to DOE for the development of borehole EM methods for minerals exploration, and monitoring the progress of CO₂ floods during enhanced oil recovery.
- ♦ Wrote a successful research proposal to the California Energy Commission for the development of borehole electromagnetic (EM) methods to improve the management of steam production and reinjection at The Geysers geothermal field.

Paulsson Geophysical Services Inc., La Habra, California Sep. 1998–Aug. 2000
Field Operations Consultant and Marketing Manager

- ♦ Operated and demonstrated new borehole technologies that provide detailed images of reservoir rocks, with the promise of increasing oil production. Systems included a high-power seismic borehole vibrator and an 80-level receiver array for vertical seismic profiling and cross-well surveys.

Quantec Geofísica June 1996–Oct. 1997
General Manager of South American Operations

- ♦ Led operations and strategic planning in Chile, Argentina, Peru and Bolivia for this Toronto-based provider of geophysical exploration services to mining companies.
- ♦ Worked with staff to improve the technical content of reports to clients.
- ♦ Reallocated resources to open a profitable full-time office in Mendoza, Argentina.

California Energy International, Jakarta, Indonesia Feb.–Apr. 1995 and Feb.–Mar. 1996
Geophysical Management Consultant (for GeothermEx Inc.)

- ♦ Worked in Indonesia for this US-based company developing geothermal resources for electricity generation. Negotiated contracts with local and foreign suppliers for surveys in Java and Bali.
- ♦ Designed magnetotelluric (MT) and time domain electromagnetic (TDEM) surveys to find drilling targets; oversaw contractor's 90-man field operation; ensured data quality; modified surveys as data were collected to meet technical objectives, budget and schedule; and reviewed final report.

Montgomery-Watson Inc., Walnut Creek, California Feb.–Nov. 1992
Supervising Environmental Scientist

- ♦ Served on internal review committees evaluating environmental data for projects at Alameda Naval Air Station and China Lake Naval Air Weapons Station.
- ♦ Advised managers on the cost-effective use of geophysical methods in environmental investigations.

Mark Rand Company Ltd., Tokyo, Japan Nov.–Dec. 1985 and Dec. 1987–Jan. 1988
Geophysical Exploration Consultant

- ♦ Working in Tokyo, interpreted large sets of geophysical, geological and borehole data to develop geologic models for two major geothermal prospects. Wrote interpretation reports with recommended drilling locations for Japan's National Energy Development Organization and Dowa Koei Co.

Z-Axis Exploration Inc., Pleasant Hill, CA (a subsidiary of WCC that was spun off)

Woodward-Clyde Consultants (WCC), San Francisco & Pleasant Hill, CA

May 1980–June 1985

General Manager (Z-Axis)

- ♦ Coordinated all aspects of operations, R&D, and marketing for this 50-employee geophysical services company providing magnetotelluric data acquisition, modeling and interpretation.

Vice President of Marketing and Data Interpretation (Z-Axis)

- ♦ Working independently and with R&D staff, made advances in MT data interpretation techniques used to locate wells at oil, gas and geothermal prospects.
- ♦ Gave numerous presentations at professional conferences and to corporate clients.

Senior Project Scientist (WCC)

- ♦ Worked with clients to design MT exploration surveys, managed projects and R&D, conducted research into data interpretation techniques, edited final reports, and presented results to clients.

Harding Lawson Associates, Novato, California

1977–1980

Senior Scientist

- ♦ Wrote a successful proposal to DOE for a geotechnical evaluation of a potential geothermal energy prospect in Idaho for Los Alamos National Laboratory.
- ♦ After the contract was awarded, performed project management; field survey design; budgeting and supervision; data collection, processing and analysis; and report writing.

New Mexico Energy Institute, New Mexico State University, Las Cruces

June 1979–Sep. 1979

Interim Director (Consultant)

- ♦ Evaluated geothermal and solar energy R&D projects and coordinated the scientific staff at three New Mexico universities regarding research reports to DOE. Prepared a successful proposal to DOE for continued energy research funding.

Lawrence Berkeley National Laboratory, Berkeley, California

1973–1977

Exploration Geophysicist (concurrent with doctoral studies at UC Berkeley)

- ♦ Wrote successful R&D proposals to DOE for the development of new geophysical techniques to explore for geothermal resources. Designed field experiments to test new instruments and survey methods; wrote computer modeling codes; modeled and interpreted data; evaluated the merits and shortcomings of the new techniques; and wrote final research reports to DOE.
- ♦ Trained and managed LBNL field engineers and technicians in geophysical field operations and data analyses, and performed numerical modeling to interpret the data.
- ♦ Directed resistivity, telluric, and gravity surveys of four Basin and Range geothermal prospects.
- ♦ Developed a reconnaissance geophysical technique (telluric profiling), used successfully to explore for geothermal resources and salt water intrusion in fresh water aquifers.

PRESENTATIONS

Beyer, J.H., 2011, Geologic Carbon Sequestration (CO₂ Storage) to Mitigate Global Climate Change: Dean's Lecture Series: Experts & Insights, Sierra College, Truckee, CA, May 6, 2011

Beyer, J.H., 2010, Lessons Learned from the WESTCARB CO₂ Storage Projects: Research Experience in Carbon Sequestration (RECS) 2010 Program, Albuquerque, NM, July 27, 2010

Beyer, J.H., 2010, U.S. Department of Energy Regional Carbon Sequestration Partnership Program: 6th IEAGHG Monitoring Network Workshop, Natchez, MS, May 6-9, 2010

- Beyer, J.H., 2010, Geologic Carbon Sequestration (CO₂ Storage) to Mitigate Global Climate Change: Bay Area Air Quality Management District Advisory Council Meeting, San Francisco, June 9, 2010
- Beyer, J.H., 2009, Arizona Utilities CO₂ Storage Pilot Project Update: 8th Annual Carbon Capture & Sequestration Conference, Pittsburgh, PA, May 4-7, 2009
- Beyer, J.H. and Hymes, E., 2009, Northern California CO₂ Storage Pilot Project Update: 8th Annual Carbon Capture & Sequestration Conference, Pittsburgh, PA, May 4-7, 2009
- Beyer, J.H., 2008, WESTCARB Geologic CO₂ Sequestration Field Tests: Carbon Capture and Sequestration Symposium 4: Emergent Approaches to CCS in California, Berkeley Institute for the Environment, University of California, Berkeley, Dec. 4, 2008
- Beyer, J.H., 2008, Arizona Utilities CO₂ Storage Pilot: Public Meeting, Holbrook, AZ, Nov. 12, 2008
- Beyer, J.H., 2008, Arizona Utilities CO₂ Storage Pilot: DOE/NETL Regional Carbon Sequestration Partnerships Initiative Review Meeting, Pittsburgh, PA, Oct. 7, 2008
- Beyer, J.H., 2008, Northern California CO₂ Storage Pilot: DOE/NETL Regional Carbon Sequestration Partnerships Initiative Review Meeting, Pittsburgh, PA, Oct. 7, 2008
- Beyer, J.H., 2008, WESTCARB Geologic CO₂ Sequestration Field Tests: 5th Annual California Climate Change Conference, Sacramento, CA, Sep. 9, 2008
- Beyer, J.H., 2008, WESTCARB Geologic CO₂ Sequestration Program: Research Experience in Carbon Sequestration (RECS) 2008 Program, Albuquerque, NM, July 23, 2008

PUBLICATIONS

- Beyer, J.H., Myer, L.R., Trautz, R.C., Collins, D., Shirley, D., Nations, D., Boyer, J., 2010, Lessons learned from drilling an exploration CO₂ injection well near the Cholla Power Plant, Holbrook, Arizona (poster): 9th Annual Carbon Capture & Sequestration Conference, Pittsburgh, PA, May 10-13, 2010
- Lawrence Berkeley National Laboratory, J.H. Beyer, ed., 2010, Final Report for Phase I – Northern California CO₂ Reduction Project, LBNL-10-ESD09-045
- Myer, L.R., L. Chiamonte, T.M. Daley, D. Wilson, W. Foxall, and J.H. Beyer, 2010, Potential for Induced Seismicity Related to the Northern California CO₂ Reduction Project Pilot Test, Solano County, California, LBNL Report # LBNL-3720E
- Beyer, J.H., Horita, J., and Wilt, M., 2003, Progress report on the development of 3-D electromagnetic borehole imaging for geothermal and enhanced oil recovery applications: *Proceedings of the 109th Conference of the Society of Exploration Geophysicists of Japan*, Osaka, October 2003, pp. 53-56
- Beyer, J.H., 1983, The magnetotelluric method and its application to petroleum exploration: 1983 *International Symposium Digest*, IEEE Antennas and Propagation Society, Univ. of Houston, TX, pp. 519-523
- Arney, B.H., Beyer, J.H., Simon, D.B., Tonani, F.B., and Weiss, R.B., 1980, Hot dry rock geothermal site evaluation, Western Snake River Plain, Idaho: *Geothermal Resources Council Trans.*, v. 4, pp. 197-200
- Wilt, M., and Beyer, J.H., 1980, A comparison of dipole-dipole resistivity and electromagnetic induction sounding over the Panther Canyon thermal anomaly, Grass Valley, Nevada: *Geothermal Resources Council Trans.*, v. 4, pp. 101-104
- Goss, R., Beyer, J.H., and Packer, D.R., 1980, El tensor magnetotellurico: *Energia*, no. 24-25, Oct.-Nov., Mexico City, pp. 51-52
- Beyer, J.H., 1977, Telluric and d.c. resistivity techniques applied to the geophysical investigation of Basin and Range geothermal systems, Part I: The E-field ratio telluric method; Part II: A numerical model study of the dipole-dipole and Schlumberger resistivity methods; Part III: The analysis of data from Grass Valley, Nevada: Lawrence Berkeley Laboratory, Berkeley, CA
- Beyer, H., Dey, A., and Morrison, H.F., 1977, Numerical model studies of dipole-dipole and Schlumberger resistivity methods (abs.): *Geophysics*, v. 42, n. 7, pp. 1496-1497

Beyer, H., Dey, A., Liaw, A., McEvelly, T.V., Morrison, H.F., and Wollenberg, H., 1976, Preliminary open file report: geological and geophysical studies in Grass Valley, Nevada, LBL-5262: Lawrence Berkeley Laboratory, Berkeley, CA

Beyer, H., and Morrison, H.F., 1976, Electrical exploration of geothermal systems in Basin and Range valleys of Nevada: *Proceedings of the Second U.N. Symposium on the Development and Use of Geothermal Resources*, May 1975, pp. 889-894

Beyer, H., Morrison, H.F., and Dey, A., 1975, Electrical exploration of geothermal systems in north central Nevada (abs.): *Geophysics*, v. 40, n. 1, p. 174