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PROSPECTUS - ENGINEERING GEOLOGY SECTION

By

Alaska Division of
Geological and Geophysical Surveys

May 1985

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PROSPECTUS
ENGINEERING GEOLOGY SECTION
Alaska Division of Geological
and Geophysical Surveys

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May 1985



ENGINEERING GEOLOGY SECTION

Alaska Division of Geological & Geophysical Surveys

A remarkable transformation of the infrastructure of the State of Alaska is in progress. Major Alaskan technological feats of the past decade have set the stage for meeting the engineering challenges in some of the most rigorous geologic environments in North America. The interface between state-of-the-art engineering practice and modern geologic principles is conceptually at the heart of the planning, design, and execution of development projects that will occur during the remainder of this century. The intimacy of this interface requires the utilization of an engineering geologic team that has both the experience and up-to-date expertise to deal with targeted project needs. The Engineering Geology Section of the Alaska Division of Geological and Geophysical Surveys (ADGGS) is committed to offering a broad range of technical capabilities to government agencies within the State of Alaska. The purpose of this brochure is to briefly introduce you to the section and the expertise and types of services we can provide.

By Alaska State Statute (41.08.020) the Division of Geological and Geophysical Surveys has been established as the data collection agency within the Department of Natural Resources and, through eleven sections and units, conducts investigations in the geological and related sciences. Strong cooperative ties exist between sections so that specific project needs can draw upon a technical staff of over 75 professionals. Though the Engineering Geology Section is the newest of these sections, most of its personnel have several years of experience in Alaska, as well as a diversity of training and background outside of the state. Typically, where a specific project requires certain expertise outside of the section, those individuals will be incorporated into the project from other sections, for example computer processing, economic geology, or hydrology. This allows the project to be scoped and executed by a small, efficient project team, backed up by the largest body of geological experts in the State of Alaska.

The fundamental resource of the section is its carefully selected personnel, chosen for their particular training and experience to meet the needs of specific sub-disciplines within a coherent engineering geology program. The second half of this brochure is devoted to brief resumés of these scientists, as well as five ADGGS key personnel from other sections who will facilitate further project diversification where required. All of these staff members are permanent, full-time state employees located at ADGGS offices in Anchorage, Eagle River, or Fairbanks, functioning through the leadership of the State Geologist's office in Anchorage. Administrative and computer support services are provided

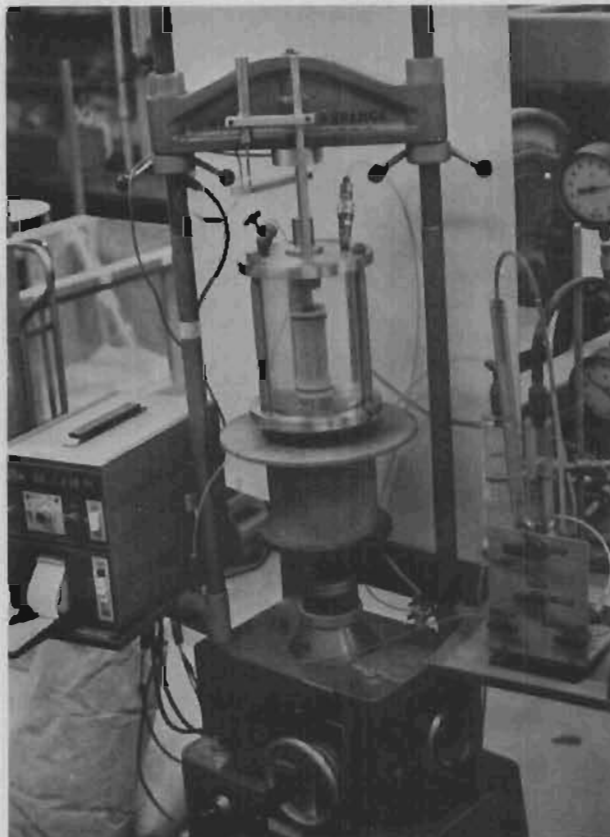


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to the section through the Anchorage office. Although all of our staff have degrees in geology or geophysics, and several have advanced degrees, our internal emphasis is not on credentials but on being able to field a talented team of scientists that can quickly and accurately discern the needs and objectives of a project, acquire very high quality data by the most cost-effective methods, evaluate and synthesize those data, and report the results in a timely manner. Our projects for other agencies consistently have been completed below budget and on time. This reflects a team that is genuinely concerned with scientifically accurate information, regardless of whether it is a sand and gravel resource evaluation or seismic acceleration model, that is completed and in the hands of the user on time. It is fair to say that the section staff are pre-eminently concerned with the technical excellence of their work, which assures more comprehensive and reliable products for the contracting agency.

It is important to note that because ADGGS is a line agency charged with data acquisition for state needs, projects that we will undertake will be associated with public sector objectives, for



example, transportation corridors, construction materials assessments, geotechnical studies for public buildings, and geologic hazards evaluations. The Engineering Geology Section currently is intensely involved in earthquake research including seismic monitoring networks, slope stability, fault mapping, and strong motion instrumentation of structures, under agreements with federal and other state agencies. Geotechnical investigations for hydroelectric facilities, state buildings, and bridges have recently been completed by the section. Section staff are also presently involved in engineering borehole drilling and sampling programs, in situ testing of soils, laboratory testing, sand and gravel mapping, bedrock quarry evaluations, and pipeline corridor studies. Often the section works closely with consultant firms and local government in an advisory capacity. Where specific technical capabilities are not available within the division, for example, in dynamic testing of undisturbed soil cores, the section personnel have sufficient experience to select the best sub-contractors to execute the work. It is anticipated that on future major projects private-sector sub-contracts of specific

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phases of work will be required, but such work will be carefully monitored by our staff on consultation with your agency. In some instances, other state agencies have retained the management of projects but have sought our aid in developing feasibility and work plans, screened response proposals to RFP's, and monitored the work executed by contracted consultants. At nominal cost, this arrangement provides technical input to the agency charged with the project responsibility to insure for the proper scope of work in a time and cost-effective mode.

The Engineering Geology Section is supported by a substantial range of technical equipment including:

- Nimbus ES 1210 multi-channel signal-enhanced seismograph
- Geometrics 835 proton magnetometer
- Worden gravity meter
- K & E Autoranger III EDM system
- Zeiss T-2 theodolite
- Bison magnetic susceptibility meter
- Scintrix 4-channel gamma ray spectrometer
- Kinematics seismograph and accelerometer systems
- Complete air photograph mapping facility
- Complete soil testing index properties lab
- Complete field mapping equipment with logistic support including
boats, motors, ATV's, trucks



These capabilities are enhanced by in-house support from other sections, including two Data General MV8000 prime computers, a complete state-of-the-art ground water monitoring system, and the most sophisticated analytical chemistry laboratory in the state.

The diverse capabilities of the Engineering Geology Section and the Division of Geological and Geophysical



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Surveys are on-line to be of service in state projects. We invite your agency to consider our division to serve your specific needs and encourage you to contact the section chief of Engineering Geology to see if we can be of assistance. We will be forthright in advising you if we are capable of the scope of work you require, and if we can meet the dollar and time constraints that you face. Because we generally function on a fiscal year budgeting scheme, it is important to initiate planning discussions as early as possible so that staff and equipment are available on a viable time line. We would recommend that as you foresee projects coming that might make use of our capabilities, that you meet with our staff to scope the end products you require, the time and budget lines to reach those objectives, and perhaps we can together identify ways to

enhance the data acquisition and synthesis at nominal additional costs. Because each project has its own set of unique circumstances, we like to work with the contracting agency to innovate on the project to thereby assure maximum production for the money available. Often the technology available to us can allow time and cost saving on a certain phase of work, in turn making way for additional relevant data sets. Again, this reflects a project team comprised of persons on the cutting edge of their science who are attuned to Alaska conditions and special needs. The Engineering Geology Section and the Alaska Division of Geological and Geophysical Surveys wish to be of service to agencies within federal, state, and local government and encourage you to give us careful consideration.

Initial contact should be made through:

Dr. Randall G. Updike
Chief, Engineering Geology Section
Alaska Division of Geological & Geophysical Surveys
P.O. Box 772116
Eagle River, Alaska 99577
(907) 688-3555



ENGINEERING GEOLOGY SECTION

Alaska Division of Geological & Geophysical Surveys

Randall G. Updike

Geotechnical Studies

Chief, Engineering Geology Section

EDUCATION

B.S., Geology, University of Missouri at Kansas City, 1966.

M.S., Geology, Arizona State University, Tempe, Arizona, 1967.

Ph.D., Geology, Arizona State University, 1971. Thesis: The geology of the San Francisco Peaks, Arizona

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - 7 years, Engineering geologist and Chief, Engineering Geology Section.

University of Wisconsin, Arizona State University - 8 years of teaching and research, Engineering and Quaternary Geology.

Experience includes: field and laboratory engineering soils sampling and testing, slope stability studies, debris flow mechanics studies, research in processes of volcanism, bedrock mapping in the Colorado Plateau, northern Rocky Mountains, Basin and Range, northern mid-continent, and southern Alaska Chugach Mountains, mapping of deposits of glacial and periglacial origin, quantitative geomorphology, and site specific studies of seismic ground response as well as involvement in earthquake hazard engineering studies.

SELECTED PUBLICATIONS

- Updike, R.G., and Howland, M.D., 1979, Surficial geology and processes, Prudhoe Bay Oil Field, Alaska, with hydrologic implications: Alaska Division of Geological and Geophysical Surveys Special Report 16, 6 pages and 17 plates.
- Updike, R.G., Cole, D.A., and Ulery, C.A., 1982, Shear moduli and damping ratios for the Bootlegger Cove Formation as determined by resonant column testing: Alaska Division of Geological and Geophysical Surveys Geologic Report 73, p. 7-12.
- Updike, R.G., and Ulery, C.A., 1983, Preliminary geologic map of the Anchorage B-6NW (Eklutna Lake) Quadrangle, Alaska: Alaska Division of Geological and Geophysical Surveys Report of investigations 83-8.
- Updike, R.G., 1983, Seismic liquefaction potential in the Anchorage area, south-central Alaska (abst.): Symposium on liquefiable deposits in the western United States, Geological Society of America, Rocky Mountain/Cordilleran Section Annual Meetings, Salt Lake City, Abstracts with Programs, p.374.
- Updike, R.G., 1983, Inclinometer strain analyses of Anchorage landslides, 1965-80: Alaska Division of Geological and Geophysical Surveys Professional Report 80, 141 p.
- Updike, R.G., 1984, Survey-monitoring system, Pillar Mountain landslide area, Kodiak, Alaska: Alaska Division of Geological and Geophysical Surveys Geologic Report 57, 16 p. and 2 plates.
- Updike, R.G., and Oscarson, Robert, 1984, The dynamic behavior of sensitive clays as indicated by microfabric studies (abst.): Geological Society of America Cordilleran Section 80th Annual Meeting, Anchorage, Alaska, Abstracts with Program, V. 16, No. 5, p. 338.
- Updike, R.G., 1984, Liquefaction-susceptibility analysis for foundation soils, Knik River Bridge, Glenn Highway, Alaska: Alaska Division of Geological and Geophysical Surveys Report of investigations 84-26, 33 p.
- Updike, R.G., 1985, Engineering geologic maps, Government Hill Area, Anchorage, Alaska: U.S. Geological Survey I-series map, I-1610.
- Updike, R.G., Olsen, H.W., Schmoll, H.R., Stokoe, K.H., II, and Kharaka, Y.F., 1985, Geologic and geotechnical conditions adjacent to the Turnagain Heights landslide, Anchorage, Alaska: U.S. Geological Survey Bulletin, in press.
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Rodney A. Combellick

Engineering Geologic Testing

EDUCATION

B.S., Geological Sciences, University of Washington, Seattle, 1973.

M.S., Geological Sciences, University of California, LA, 1976. Thesis: Beach sand mineralogy, provenance, and transport in Monterey Bay, CA., Teaching Assistant.

University of Alaska, Fairbanks: Coursework in Quaternary, glacial, and engineering geology.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGCS - Geological hazards studies and mapping in central, southcentral, and southeastern Alaska.

National Oceanic and Atmospheric Administration, Juneau. Technical planning management of geologic hazards studies for offshore oil and gas leasing in Alaska.

National Oceanic and Atmospheric Administration, Boulder, CO. Design and implementation of marine geological data management programs.

California State Lands Division, Long Beach, CA. Graduate student assistant. Study of nearshore sediment dynamics in Monterey Bay to determine the effects of beach sand mining on coastal erosion.

Fugro, Inc. (Now ERTEC), Long Beach, CA. Geologic mapping of a nuclear power plant in San Onofre, CA.

Amoco Production Company, Denver, CO. Exploration geology in Alaska and Montana.

Private Consulting: Petrographic analysis of sedimentary rock samples to determine hydrocarbon reservoir potential. Petrographic analysis of aggregate to determine suitability for use in concrete.

OTHER SKILLS: Computer programming (FORTRAN, COBOL, BASIC), certified SCUBA diver, pilot.

SELECTED PUBLICATIONS

Combellick, R.A., 1984, Geologic hazards in Alaska--The role of State Government: Alaska Division of Geological and Geophysical Surveys, Special Report (in press).

Combellick, R.A., 1984, Potential for earthquake-induced liquefaction in the Fairbanks-Nenana area, Alaska: Alaska Division of Geological and Geophysical Surveys, Report of Investigations 84-5, 10 p., scale 1:250,000, 1 sheet.

Combellick, R.A., 1984, Surficial geologic map of the Seward D-6 Quadrangle, Alaska: Alaska Division of Geological and Geophysical Surveys, Report of Investigations (in press), scale 1:63,360, 1 sheet.

Combellick, R.A., and Long, W.E., 1983, Geologic hazards in southeastern Alaska: An overview: Alaska Division of Geological and Geophysical Surveys, Report of Investigations 83-17, 17 p.

Combellick, R.A., and Osborne, R.H., 1976, Petrology of beach sand from southern Monterey Bay, California: Geological Society of America, Abstracts with Programs (Cordilleran Section Meeting), v. 8, p. 363.

Combellick, R.A., and Osborne, R.H., 1977, Sources and petrology of beach sand from southern Monterey Bay, California: Journal of Sedimentary Petrology, v. 47, p. 891-907.

Porter, G.A., Ehrlich, R., Combellick, R.A., and Osborne, R.H., 1978, Sources and nonsources of beach sand along the southern Monterey Bay, California: Fourier shape analysis: Geological Society of America, Abstracts with Programs (Cordilleran Section Meeting), v. 10, p. 142.

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John N. Davies

Earthquake Engineering

EDUCATION

B.A., Reed College, 1967.

M.S., Geophysics, University of Alaska, 1970.

Ph.D., Geophysics, University of Alaska, Dissertation: "Seismological investigations of plate tectonics in southcentral Alaska", 1975.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGCS - State Seismologist and Affiliate Associate Professor, Geophysical Institute, University of Alaska, Fairbanks

Columbia University - Research associate in seismology, Lamont-Doherty Geological Observatory, 6 years.

University of Alaska, Geophysical Institute - 7 years research and teaching assistant

Scientific research includes a study of angular momentum in visual binary star systems and VHF emissions from the sun.

Seismological crustal studies in central Alaska, including Trans-Alaska Crustal Transect.

Seismological investigations of plate tectonics using VHF telemetered arrays in southcentral Alaska and the eastern Aleutians.

SELECTED PUBLICATIONS

- Davies, J.N., and Berg, E., 1973, Crustal morphology and plate tectonics in south-central Alaska: Bulletin Seismology Society of America, 63, 673-677.
- Van Wormer, J.D., Davies, J.N., and Gedney, L., 1974, Seismicity and plate tectonics in south-central Alaska: Bulletin Seismology Society of America, 64, 1467-1476.
- Van Wormer, J.D., Gedney, L., Davies, J.N., and Condal, N., 1975: Vp/Vs and b-values a test of the dilatancy model for earthquake precursors: Geophysical Resource Letters 2, no. 11, p. 514-516.
- Davies, J.N., and House, L., 1979, Aleutian subduction zone seismicity, volcano-trench separation and their relation to great thrust-type earthquakes: Journal Geophysical Resources, 84, 4583-4591.
- Sykes, L.R., Kisslinger, B., House, L., Davies, J.N., and Jacob, K.H., 1980, Rupture zones of great earthquakes in the Alaska-Aleutian arc, 1784-1980: Science, 210, 1343-1345.
- Davies, J., Sykes, L., House, L., and Jacob, K., 1981, Shumagin seismic gap, Alaska Peninsula: History of great earthquakes, tectonic setting and evidence for high seismic potential, Journal of Geophysical Research, 86, (B5), 3821-3855.
- House, L., Sykes, L., Davies, J., and Jacob K., 1981, Evidence for a possible seismic gap near Unalaska Island in the eastern Aleutians, Alaska: in Earthquake Predictions - An International Review, D.W. Simpson and P.C. Edwards, eds., American Geophysical Union Maurice Ewing Series, 4, 81-92.
- Davies, J.N., 1983, Seismic, Volcanic, and Tsunami Mitigation in Alaska - An Unmet Need: Alaska Division of Geological and Geophysical Surveys, Report of Investigations 83-11.
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Alaska Division of Geological & Geophysical Surveys

Kerwin J. Krause

Engineering Geologic Mapping

EDUCATION

B.S., Geology, Alaska Methodist University, Anchorage, AK, 1974.

M.S., Geology, Mackay School of Mines, University of Nevada, Reno NV, 1980.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - surficial geological mapping and material resources, hazards and engineering evaluations. Also involved in bedrock and mineral resources mapping and evaluations.

U.S. Corps of Engineers - Geologist-in-charge of Exploration Section. Conduct reconnaissance and detailed geological and geophysical evaluations for engineering projects. Mobilize and direct contract and government drilling crews in exploratory drilling.

Bendix Field Engineering Corp. - party chief for uranium resource evaluations. Research, compilation, evaluation, and planning of geological evaluations. Organized and conducted ground and aerial 4-channel gamma ray radiometric and magnetic surveys, geochemical sampling and geological examinations.

Union Carbide Metals and Mining Division - Tungsten and base/precious metal exploration employing geochemical sampling, reconnaissance and detailed geological mapping, structural mapping and analysis, and magnetic surveying.

Cities Service Minerals Corp. - base/precious metal exploration employing geochemical sampling, reconnaissance, and detailed geologic mapping, and magnetic surveying. Conduct I.P. and magnetic surveying on specific properties.

ADGGS - assist with regional geological mapping and geochemical sampling. Draft geological maps. Did EIS and other Federal Impact surveys.

SELECTED PUBLICATIONS

Anderson, J.R., and Krause, K.J., 1980, National Uranium Resource Evaluation of the Dixon Entrance Quadrangle, Alaska: Bendix Field Engineering Corp., PGJ-047 (81), prepared for the Department of Energy, Grand Junction, Colorado.

Burgett, W.A., and Krause, K.J., 1979, Helicopter assisted reconnaissance aerial radiometric survey of the Dixon Entrance Quadrangle, Alaska: Bendix Field Engineering Corp., GJBX 19 (79), prepared for the Department of Energy, Grand Junction, Colorado.

Krause, K.J., 1984, Photointerpretive map of morphological floodplain deposits and material resources, middle Kuskokwim River from Sleetmute to Kalskag, Alaska: Alaska Division of Geological and Geophysical Surveys Report of Investigations 84-2, scale 1:63,360, 5 plates and text.

Krause, K.J., 1984, Surficial geologic maps of the Skagway A-3, A-4, B-3, B-4, C-3, and C-4 Quadrangles, Alaska: Alaska Division of Geological and Geophysical Surveys Report of Investigations, scale 1:63,360, 1 plate each Quadrangle [in press].

Krause, K.J., 1984, Surficial geologic maps of the Anchorage C-4 and C-5 Quadrangles, Alaska: Alaska Division of Geological and Geophysical Surveys Report of Investigations, scale 1:63,360, 1 plate each quadrangle [in press].

Krause, K.J., 1984, Photointerpretive map of the surficial geology of the Anchorage D-4 Quadrangle, Alaska: Alaska Division of Geological and Geophysical Surveys Report of Investigations, scale 1:63,360, 1 plate [in press].

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Alaska Division of Geological & Geophysical Surveys

Beverly Ranken

Earthquake Studies

EDUCATION

Undergraduate courses in Geology, Purdue University, Purdue, Indiana, 1974-77.

B.S., with honors, Geological Sciences, McGill University, Montreal, Canada, 1979

M.S., Geological Sciences, Cornell University, Ithaca, N.Y., 1983. Thesis: Subduction beneath the southeastern Philippine Sea plate determined from poles of rotation, seismicity, and focal mechanisms.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - currently seismologist in charge of Alaska Seismic Data Center, collecting, processing, archiving, and publishing earthquake data for the State of Alaska as required from seismic monitoring networks operating in various sectors of the state.

Conducted seismicity and focal mechanism studies and analyzed tectonics of Philippine Sea plate boundaries.

Performed detailed structural study of southern Mariana trench using bathymetric data and seismic reflection profiles.

Gathered and interpreted marine geophysical and geologic data on Cambridge University research cruise investigating subduction in the Indian Ocean.

Mapped and sampled Cape Smith fold belt, McGill University geology project.

OTHER SKILLS: Programming experience (FORTRAN, PL/C, and PASCAL)

SELECTED PUBLICATIONS

Karig, D.E., and Ranken, B., 1983, Marine geology of the forearc region, southern Mariana island arc; Geophysical Monogram Series in Tectonic and Geologic Evolution of Southeast Asian Seas and Islands, v. 27, Part 2.

Ranken, Beverly, 1984, Kinematics of the Philippine Sea plate; Tectonics, v. 3, No. 5.

ENGINEERING GEOLOGY SECTION

Alaska Division of Geological & Geophysical Surveys

John W. Reeder

Engineering Geophysics

EDUCATION

- B.S., Engineering Geology, University of Idaho, College of Mines, 1972, summa cum laude.
- M.S., Geology, Stanford University, CA, Thesis: "Bluff instability in Anchorage, Alaska", 1974.
- M.S., Geophysics, Stanford University, CA, Thesis: "Seismological aspects of the 1976 eruption of Augustine Volcano, Alaska", 1983
- Ph.D., Geology, Stanford University, CA, Dissertation: "Experimental studies of the effects of ephemeral stream-flow depths on infiltration", 1981.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - Gravel resource and bedrock quarry resource assessments. Hydrological, geophysical, and geological investigations of a proposed hydroelectric sites. Collection of subsurface geotechnical data for the Anchorage basin, earthquake hazard studies. Conducted geologic mapping and geothermal resource evaluation in the Aleutian Islands.

USGS - National Center of Earthquake Research - seismological research on the Nicaraguan Depression and the 1976 eruptions of Augustine Volcano in Alaska.

USGS - Water Resources Division - Glaciology, subsurface and surface hydrology, and geomorphology.

SELECTED PUBLICATIONS

- Reeder, J.W., Freyberg, D.L., Franzini, J.B., and Remson, I., 1978, The effect of rapidly-varying surface-water depths on infiltration into unsaturated soils: EOS Transactions American Geophysical Union, v. 59, no. 4.
- Reeder, J.W., 1979, The dating of landslides in Anchorage, Alaska - a case for earthquake triggered movements: The Geological Society of America (92nd) 1979 Annual Meeting, v. 11, no. 7.
- Reeder, J.W., Freyberg, D.L., Franzini, J.B., and Remson, I., 1980, Application of the Green-Ampt model to infiltration under time-dependent surface-water depths: Water Resources Research, v. 16, no. 3, p 517-528.
- Reeder, J.W., Motyka, R.J., and Wiltse, M.A., 1980, The State of Alaska geothermal program: Transactions Geothermal Resource Council, v. 4, p 823-826.
- Reeder, J.W., Economides, M.J., and Markle, D.R., 1982: Economic and engineering considerations for geothermal development in the Makushin Volcano region of Unalaska Island, Alaska: Transactions Geothermal Resource Council, v. 6, p 385-388.
- Reeder, J.W., 1984, Complete Bouguer gravity anomaly map of the northern part of Unalaska Island: Alaska Division of Geological and Geophysical Surveys Open-File Report, in press.
- Reeder, J.W., 1985, Unconsolidated deposits and geologically recent volcanic rocks and faults of the northern part of Unalaska Island: Alaska Division of Geological and Geophysical Surveys Open-File Report, in press.
- Reeder, J.W., and Lahr, J.C., 1985, Seismological aspects of the 1976 eruption of Augustine Volcano, Alaska: U.S. Geological Survey Open-File Report, in press.
- Reeder, J.W., 1985, Fault and volcanic dike orientations for the Makushin Volcano region of the Aleutian Arc: Proceedings of the International Symposium on Recent Crustal Movements of the Pacific Region, held February 9-14, 1984 at Victoria University, Wellington, New Zealand, Royal Society of New Zealand Bulletin, in press.
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ENGINEERING GEOLOGY SECTION

Alaska Division of Geological & Geophysical Surveys

Catherine A. Ulery

Engineering Geologic Mapping

EDUCATION

B.S., Geology, Eastern Michigan University, Ypsilanti, Michigan, 1978

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - assist in resource mapping of bedrock and surficial deposits of the Chugach Mountains by quadrangle. Geotechnical data bank and subsurface mapping of the Anchorage lowland. Sand and gravel resource evaluations, geotechnical field and laboratory analysis, data reduction, HP programming, drafting and graphics, manuscript writing.

Howard Gray and Associates, Geological and Engineering Consultants - drafting, report writing, field investigations involving surficial seismic analysis, surveying and field and laboratory analysis; hazards study, Turnagain Heights landslide area, Anchorage.

SELECTED PUBLICATIONS

- Ulery, C.A., and Updike, R.G., 1984, Subsurface structure of the cohesive facies of the Bootlegger Cove Formation, southwest Anchorage, Alaska: Alaska Division of Geological and Geophysical Surveys Professional Report 84, scale 1:10,000, 5 p. and 3 plates.
- Updike, R.G., Cole, D.A., and Ulery, C.A., 1982, Shear moduli and damping ratios for the Bootlegger Cove Formation as determined by resonant-column testing: Alaska Division of Geological and Geophysical Surveys Geologic Report 73, p. 7-12.
- Updike, R.G., and Ulery, C.A., 1983, Preliminary geologic map of Anchorage B-6 NW (Eklutna Lake) Quadrangle: Alaska Division of Geological and Geophysical Surveys Report of Investigations 8-83, 1:10,000, 2 plates.
- Updike, R.G., and Ulery, C.A., 1985, Engineering geology of southwest Anchorage, Alaska: Alaska Division of Geological and Geophysical Surveys Professional Report, in press.
- Updike, R.G., and Ulery, C.A., 1985, A geotechnical cross-section for downtown Anchorage utilizing the Electric Cone Penetration test: Alaska Division of Geological and Geophysical Surveys Report of Investigations, in press.
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Alaska Division of Geological & Geophysical Surveys

Douglas Jones

Coastal Engineering

Chief, Resource Analysis Section

EDUCATION

B.A., Liberal Arts, Alaska Methodist University, 1965

M.S., Oceanography, University of Washington, 1968

Ph.D., Coastal Engineering, University of Florida, 1975

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - Chief, Resource Analysis Section

Owner/operator (3 years) of engineering firm specializing in nearshore oceanography and coastal engineering/processes.

Coastal Engineer, Woodward Clyde Consultants, Anchorage

Coastal Engineer, Dames and Moore Consultants, Anchorage

Experience includes: project manager for the analyses and modeling of several coastal engineering projects including seawater outfall, Harrison Bay; water exchange, Simpson Lagoon-Prudhoe Bay; environmental program, Oliktok Point to Sagavanirktok Delta; sediment transport, Oliktok Point; circulation, water quality, and wave refraction, Prudhoe Bay; breakwater wave refraction, Kodjak Harbor; coastal design, runway extension, Unalaska; sediment transport for port construction, Kivalina; shallow water circulation, Alpetco, Valdez; wave forces on off-shore structures, Alaska O.C.S. studies.

SELECTED PUBLICATIONS

Smith, J.D., and Jones, D.F., Turbulent flow over marine sandwaves: Transactions, American Geophysical Union, Vol. 49, No. 1.

Dean, R.G., and Jones, D.F., Equilibrium beach profiles as affected by seawalls: Transactions, American Geophysical Union, Vol. 55, No. 4.

Hudspath, R.T., Jones, D.F., and Nath, J.N., Analysis of hinged wavemakers for random waves: ASCE 16th Coastal Engineering Conference, Hamburg, Germany.

Numerous consultant reports completed as a result of efforts described in the experience section.

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Alaska Division of Geological & Geophysical Surveys

William E. Long

Glaciology and Hydrology

Chief, Water Resources Section

EDUCATION

B.S., Geology, University of Nevada, 1957.

M.S., Geology, Ohio State University, 1961.

Ph.D., Geology, Ohio State University, 1964.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - Hydrologist and Chief of the Water Resources Section - 8 years - In charge of hydrologic data collection for surface and ground waters throughout the State of Alaska.

Matanuska Susitna Borough - Planner - 1 year.

Alaska Methodist University - Professor of Geology - 11 years.

Tenneco Oil Company, Shreveport, LA - exploration geologist.

Ohio State University - Research Associate, including responsibilities as glaciologist, International Geophysical Year, Byrd Station Antarctica; leader and geologist, Harlick Mountains Expedition, Antarctica, Ohio State University; leader, Nilson Range Expedition, Antarctica.

University of Canterbury, Christchurch, New Zealand - visiting Lecturer.

Private Consulting: Aleutian Islands sulfur and Alaska Peninsula oil exploration.

SELECTED PUBLICATIONS

Long, W.E., 1962a, Permo-Carboniferous glaciation in Antarctica: Geological Society of America (Abst.), Special Paper No. 68, p. 314, January 1962.

Long, W.E., 1962b, Sedimentary rocks of the Buckeye Range, Horlick Mountains, Antarctica: Science, v. 136, no. 3513, p. 319-321, April 27, 1962.

Doumani, G.A., and Long, W.E., 1962, The ancient life of the Antarctic: Scientific American, vol. 207, no. 3, p. 163-184.

Long, W.E., 1964, Stratigraphy of the Horlick Mountains: in Antarctic Geology, Symposium on Antarctic Geology, pp. 352-363.

Long, W.E., 1965, Stratigraphy of the Ohio Range, Antarctica: in U.S. Antarctic Research Series No. 6, American Geophysical Union, pp. 71-116.

Long, W.E., 1971, Glacial processes and their relationship to Streamflow Flute Glacier, Alaska: Report No. IWR-18, Institute of Water Resources, University of Alaska.

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Gall D. March

**Avalanche Studies and Glaciology
Geologic Mapping Section**

EDUCATION

B.S., Geology, Middlebury College, Vermont, 1970.

M.S., Geology, Dartmouth College, Hanover, NH, 1972.

University of Alaska, Fairbanks, coursework in math, physics, geophysics, computer science.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGCS - research on natural hazards, especially avalanches, surficial geologic mapping, computer-assisted mapping, GIS, geochemical modeling.

Peter M. Jorgensen, Consulting Engineer and Land Surveyor, Jackson, Wyoming - surveying, drafting, geologic reports, and computer calculations related to subdivision and civil engineering projects.

University of Colorado, Institute of Arctic and Alpine Research, Silverton, CO - San Juan Avalanche Project, research on snow temperature gradient, also avalanche prediction and observation.

State of New Hampshire, Concord, NH - Office of Comprehensive Planning, involved in state-wide water resources planning.

Abteilung für Hydrologie und Glaziologie Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie and der Eidgenössische Technische Hochschule, Zurich, Switzerland - research on the permanent snowline in Switzerland, and meltwater percolation studies on Aletsch Glacier.

USGS Water Resources Division, South Cascade Glacier, Washington - ongoing glacier studies (movement, run-off, etc), meltwater studies (1971 work connected with Master Thesis research on water percolation in snow).

SELECTED PUBLICATIONS

Davidson, G, and Hackett, S.W., 1980, Provisional snow avalanche potential, Anchorage, Seward, and Juneau Quadrangles: Alaska Division of Geological and Geophysical Surveys, AOF-130, AOF-131, and AOF-132.

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**Engineering Geology of Cold Regions
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EDUCATION

A.A., Liberal Arts, Los Angeles Harbor College, Wilmington, CA, 1971.

B.S., Geology, California State University, Long Beach, CA, 1974.

M.S., Geology, University of Alaska, Fairbanks, AK, 1979.

Ph.D. in Geology (in progress), University of Alaska, Fairbanks, AK.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - Permafrost and hazards assessments, surficial and peat resource mapping.

University of Alaska, Fairbanks, Division of Geosciences, geology research assistant for 4 years.

University of Alaska, Fairbanks, Northern Remote Sensing Laboratory, Geophysical Institute, instructor in Remote Sensing

Geologist at Geophysical Institute, University of Alaska, Fairbanks, AK

Holmes and Narver, Inc., South Pole Station, Antarctica, logistics coordinator

Holmes and Narver, Inc., McMurdo Station, Antarctica, general field assistant

OTHER SKILLS: Certified SCUBA Diver, Private Pilot's Certificate.

SELECTED PUBLICATIONS

Cameron, C., Malterer, T., Rawlinson, S., and Hardy, S., 1981, Surficial geology and peat resource map of the Houston area, Susitna Valley, Alaska: U.S. Geological Survey Open-File Report 81-1301, two sheets.

Cameron, C., Malterer, T., Rawlinson, S., and Hardy, S., 1981, Surficial geology and peat resources map of the Rogers Creek area, Susitna Valley, Alaska: U.S. Geological Survey Open-File Report 81-1302, three sheets.

Cannon, P.J., and Rawlinson, S.E., 1979, The environmental geology and geomorphology of the barrier island-lagoon system along the Beaufort Sea coastal plain from Prudhoe Bay to Colville River: 29th Annual Alaska Science Conference, University of Alaska, Fairbanks, September 1978, Proceedings.

Krebs, P.V., Spencer, J.P., Dean, K.G., and Rawlinson, S.E., 1979, Natural resource maps of South Central Alaska: landforms and surficial deposits, geologic hazards, land cover: Final report (users guide), Bureau of Land Management Contract YA-512-CT8-97.

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EDUCATION

B.S., Geology, University of Alaska, Fairbanks, 1963.

M.S., Geology, University of Alaska, Fairbanks, 1964.

Ph.D., Geology, Arizona State University, Tempe, 1975: Dissertation: Cryoplanation terraces of interior and western Alaska.

EXPERIENCE AND RESEARCH ACTIVITIES

ADGGS - Surficial materials mapping, geologic hazards and permafrost assessment, glaciologist. 10 years, section chief for Geologic Mapping Section; managed projects throughout the state.

Arizona State University, Tempe - Seven years of teaching and research, Quaternary geology.

R & M Engineering and Geological Consultants, Anchorage, Alaska - Senior geologist, Trans-Alaska Pipeline corridor terrane unit mapping.

SELECTED PUBLICATIONS

Kreig, R.A., and Reger, R.D., 1976, Preconstruction terrain evaluation for the Trans-Alaska Pipeline project: in Coates, D.R., ed., *Geomorphology and engineering*, Stroudsburg, Dowden, Hutchinson, and Ross, p. 55-76.

Reger, R.D., 1968, Recent history of Gulkana and College Glaciers, central Alaska Range: *Journal of Geology*, v. 76, no. 1, p. 2-16.

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