The Maine Geologist

February 1992

Newsletter of the Geological Society of Maine

V.18, No.1

President's Message
by
Olcott Gates

I thought the meeting at Farmington was a great success. Dan Walters, Bob Marvinney, and Mark Jadkowski gave very interesting and educational talks about GIS; and after dinner John Williams and Bill Duffy showed how GIS was used for radioactive waste siting. Congratulations to Archie Berry, Tom Eastler, and students at Farmington for giving GSM an excellent meeting.

Pat Seaward's Education Committee is doing a great job on workshops about topographic maps for teachers. I have been to two of the committee's meetings and am much impressed by the enthusiasm and hard work the committee members are putting into its program. Pat and Patti Millette describe the past, present, and future activities of the committee and the success of the first workshop elsewhere in the newsletter.

At the Farmington meeting I was snatched from obscurity and catapulted into the President's chair without having had much experience in the Society's affairs. Past President Carolyn Lepage has been a big help keeping me out of trouble; but I find there are several matters for which I can find no prior written policies and for which I think we ought to have some formal policy decisions. I am putting these up to the Executive Committee. At the Bates meeting I'll list those decisions the officers have made themselves and put on the agenda those we feel should go to a vote of the membership.

Do we need to maintain an up-to-date file of all the Society's decisions, correspondence, finances, etc.? What should be the criteria for granting other organizations use of our mailing list? Under what conditions should we cosponsor meetings of other organizations? Should we allow videotaping of our meetings? What to do about members well behind in their dues? How much money is the President or other officers allowed to spend and for what purposes without authorization at a meeting? What kinds of decisions can the President and/or other officers make and what kinds should go to a meeting vote? If any member has ideas about these problems, I can be reached at 207-882-6436.

I'll see you at the Bates meeting.

SPRING MEETING SCHEDULE
GEOLOGICAL SOCIETY OF MAINE
April 3, 1992
Bates College
Lewiston, Maine

11am - 1pm **Registration**
Carnegie Science Lobby
1pm - 5pm Student Presentations
Oral Presentations in Cargenie Science Room 204 and Poster Sessions in Carnegie Science Lobby
5 - 5:30pm **Business Meeting**
Carnegie Science Room 204
5:30 - 6pm **Social Gathering**
Rowe Room, Memorial Commons
6pm - 7pm **Dinner**
Rowe Room
7pm **Evening Program**
Carnegie Science Room 204

The evening speaker will be Dr. Mary Hubbard, Assistant Professor of Geology at the University of Maine (Orono). She received her Ph.D. from MIT in 1988 and her talk is entitled **Orogen Parallel Deformation: Examples from the Appalachian Alps and Himalaya.**

GSM TREASURER'S REPORT
Period Ending 11/15/91

Balance on Hand 8/31/91	
$4012.56	
Receipts	
Dues & Application Fees	$292.00
	$292.00
Disbursements	
Letter Systems	$576.00
Postage	$ 70.88
	$646.88
Net Change	$354.88
Balance on Hand 11/15/91	
	$3657.68

Total Members: 317 members

Submitted by Michael E. Foley, Treasurer

Call for Abstracts

Geological Society of Maine
Spring Meeting, April 3, 1992
Bates College, Lewiston, Maine

Students in Maine colleges and universities and students from other schools working on projects in Maine are encouraged to present papers in oral or poster form at the Spring Meeting of the Geological Society of Maine. This program gives students working on Maine-related senior theses, independent studies or master's theses an opportunity to discuss their research before a professional audience. Abstracts will be published in the issue of the Maine Geologist following the meeting.

Oral presentations are 20 minutes in length which includes five minutes for questions. Slide and overhead projection facilities will be available. Those presenting in poster format will have available two poster boards with dimensions of 6 feet x 5 feet.

Abstracts must be written in accordance with the GSM format and must not exceed 250 words. All of your text must be fit within a 4-1/2" x 4-1/2" box. A sample abstract is available to serve as a guide in preparation; abstract forms are also available. The original and two copies of the form must be submitted. For abstract forms and/or submissions, contact:

Dr. Dykstra Eusden
Department of Geology
Bates College
Lewiston, ME 04240
207-786-6152

Abstracts must be received by March 27, 1992. Late abstracts will not be accepted.

GSM FALL MEETING MINUTES
UNIVERSITY OF MAINE, FARMINGTON
November 15, 1991

Old Business: The Treasurer's report and Secretary's report were both dispensed with because of a shortage of time. Copies of both can be seen in the October 1991 GSM newsletter.

The 1992 Summer Field Trip was the first topic of business. The trip will be lead by Bob Gerber and Steve Pinette on the last weekend of July (7/25-26) and will look at the bedrock geology of the islands in Penobscot Bay. Space is limited to thirty people (no children) and interested participants should sign up with Bob Johnston at MGS (207-289-2801) as soon as possible. A boat fee will be charged. As of December 31, 1991, 19 people are on the list for the trip.

The DEP Task Force was discussed by President Carolyn Lepage. A report was presented by the Task Force to the DEP with recommendations, and later a five-page report on the Task Force recommendations was returned by the DEP. A plan of action for 1992 will be developed, which will include training sessions for professionals in the DEP. While on the topic of professional certification, Tom Eastler asked for assistance in helping write legislation that would require licensed or certified professionals to be used in the review of projects in the state. Carolyn stated that the Task Force is able to deal with the accountability of professional engineers and geologists. Pat Seaward, chairperson of the Education Committee, announced a teacher workshop to be held on January 17, 1992 at Old Town High School.

New Business: Videotaping of GSM meetings was the first topic of new business. Members expressed an interest in making tapes available to the students of the host institution. The officers of the Society will formulate a policy on the videotaping of the meetings and the use of those tapes.

Joe Kelley announced a Geology of Maine course which will be held on Saturdays (spring semester beginning January 18, 1992) on the University of Maine's Interactive Television Network. A short course on Coastal Land Loss was also proposed by Joe, similar to the short course he has taught at GSA with Orrin Pilkey and Bob Morton. This would be in the format of the GSM Distinguished Lecture Series. Joe proposed a one day classroom/ one day field trip in southern Maine. The date of the course will be April 10-11, 1992. See elsewhere in the newsletter for more information.

Some discussion was held on the qualifications of individuals who teach geology in Maine. Should some type of oversite be done by the Society? Dykstra Eusden announced the GSM Spring Meeting at Bates College will be held on Friday, April 3, 1992. Arthur Hussey apologized for the lateness of the October newsletter. The post office in Brunswick had a problem in mailing it out.

Dan Belknap, geology professor at Orono, announced that a new geology building is scheduled to be built at the University of Maine. Funding is still being sought for portions of the building and for equipment, so if there is anyone out there with money to donate, please contact Dan at the University (207-581-2159).

Tom Eastler announced that a Soviet (?) geology professor will be visiting UMF and will donate a fossil collection to the university next spring. He is scheduled to make three presentations on his research. More

information on that can be obtained from Tom Eastler (207-778-7401).

Carolyn Lepage was duly honored by the Society members present for her outstanding work over the last two years as GSM President. Elections were held and the following people were elected.

President - Olcott Gates
P.O. Box 234
Wiscasset, ME 04578
207-882-6436

Vice President - Steve Pinette
Maine DEP
State House Station 17
Augusta, ME 04333
207-289-3901 (work)
207-865-4119 (home)

Secretary - Marita Bryant
Department of Geology
Bates College
Lewiston, ME 04240
207-786-6473

Treasurer - Marc Loiselle
Maine Geological Survey
State House Station 22
Augusta, ME 04333
207-289-2801

Newsletter Editor - Susan C. Weddle
11 Beech Drive
Brunswick, ME 04011
207-729-6122

DEP TASK FORCE UPDATE
by
Carolyn Lepage

The DEP Task Force presented its first progress report to the DEP Senior Management Team (Commissioner, Deputy Commissioner, and Bureau Directors) in mid-October 1991. The report presented an overview of the Task Force's formation and mission, a review of objectives completed or undertaken since April 1990 (including the Contaminant Fate and Transport short course, the Environmental Modeling Series workshop, the Land Bureau peer review process, and review of technical career development and project management), and topics to be considered in the upcoming year. Task Force members subsequently met with several Senior Management Team members on October 21, 1991 to present highlights of the report. The Senior Management Team responded to the report and presentation in a written memo dated November 13, 1991. Their overall response to the Task Force activities was favorable and encouraging. The Task Force is now in the process of preparing a response to the Senior Management memo. Two of the major issues to be addressed by the Task Force in 1992 are accountability with regard to technical decisions made by DEP staff, and quality of applications submitted to DEP. The next Task Force meeting is scheduled for February 13, 1992.

REVIEW OF MAPPING WORKSHOP IN OLD TOWN SCHOOL DISTRICT
by
Patti Millette

If the enthusiastic response from Old Town teachers is any indication of teachers across the state, then (A) there are a lot of teachers out there who are interested in geology, (B) they're not getting much hands-on training in response to their interest, (C) they want more training because both they and their students like geology, and finally, (D) our education committee has a lot of work to do!

With assistance from structural geologist Kevin Higgins, and Chris Steere and Jeff Johnson, both survey engineers, (all from the University of Maine in Orono), we covered a range of basic mapping skills with approximately twenty teachers. The teachers in the group ranged from first grade to high school levels, and had a broad range of personal experience with maps. A few of them had little or no experience in mapping and it was to those people that we primarily oriented the activities.

Four instructors teaching twenty students may seem like an unnecessary luxury, but the 5:1 student to teacher ratio allowed us to give one-on-one assistance to the beginners while taking more advanced cartography buffs into topics such as satellite imagery, structural and bedrock mapping, and aerial photography. In addition to the wide array of Maine maps that belong to the committee, we were also fortunate enough to bring along a collection of aerial photographs, and European contour and geologic maps of the Himalaya (generously lent for the workshop by Mary Hubbard, structural geologist from UM). Since many people have difficulty transferring a three dimensional photographic view to a two dimensional map surface, the collection offered a nice comparison of two and three dimensional views of the area around Mount Everest.

The evaluations at the end of the workshop were extremely positive; expressing an interest in additional workshops and summer field trips. The biggest complaint was that the workshop wasn't long enough to DO all of the activities. Unfortunately, this could be significant if some teachers don't feel comfortable teaching an activity to their students without first doing it themselves.

Overall, the session was quite successful and hopefully, the subsequent workshop participants will be as enthusiastic as this group. Maybe eventually the excitement of geology will be carried over to their students.

BEGINNING OF A SUCCESSFUL PROGRAM/
THANKS FOR A JOB WELL DONE
by
Pat Seaward
Chairperson of Education Committee

Education committee teacher workshop activities are in full swing. The first very successful workshop was held in Old Town on January 17, 1992 with Patti Millette at the helm (see related article).

I would like to take this opportunity to thank the members of the Committee for their committment to the success of our workshop program. They are Bill Berry of University of Maine, Farmington; Glenn Black of Kennebunk High School; Marianne DuBois, Maine DEP Water Bureau; Art Hussey of Bowdoin College; Patti Millette of Mount Blue Junior High School and the University of Maine; and Ollie Gates, Profesor Emeritus, SUNY at Fredonia. The dynamics of this group produce a constant flow of ideas resulting in the refinement of our fundamental plan to create a viable workshop program.

As this program has evolved, our original goals have been modified to reflect limitations of time and money. Determined to provide workshops at no cost to the schools or to the Society, we have solicited funding from businesses near participating schools. For example, James W. Sewall Company donated the topographic map sets for the Old Town elementary schools. The next workshops are scheduled for the Cottrell School in Monmouth on March 4, 1992 and Windham Junior High School on March 20, 1992.

Under the direction of Marianne DuBois, the Education Committee is applying for an EPA grant for environmental education purposes. If awarded, this funding will enable us to devote more energy to workshop preparation. If you have any ideas, information, questions, or time to volunteer, don't hesitate to call any of the committee members listed above or me, Pat Seaward, at 207-289-2651.

In Memoriam
Norman L. Hatch, Jr.
May 27, 1932 - November 30, 1991

NATIONAL GROUND WATER ASSOCIATION
EASTERN REGIONAL CONFERENCE
Poster Session Abstracts

The NGWA held its annual eastern hydrogeological conference in South Portand, Maine, on October 29-31, 1991. An evening reception included posters by state agencies and consulting firms in Maine. This was the first year that NGWA agreed to posters and due to its success will continue this format in the future. Poster abstracts were not included in the NGWA proceedings. Because the Geological Society of Maine is interested in all aspects of Maine geology, abstracts of posters submitted to the GSM editor are published below.

BACKGROUND WATER QUALITY IN SIGNIFICANT SAND AND GRAVEL AQUIFERS IN MAINE: A PROGRESS REPORT

WEDDLE, Thomas K., and LOISELLE, Marc C., Maine Geological Survey, State House Station 22, Augusta, ME 04333

Background water-quality data collected from wells in stratified drift as part of the statewide significant sand and gravel aquifer mapping program are grouped by major drainage basin for comparison. Mean values of selected background water-quality parameters vary systematically between major drainage basins in Maine, and in the one case examined, between sub-basins. There is a systematic decrease in selected mean parameter values (conductivity, alkalinity, sulfate, calcium, and hardness) for major drainage basins from north to south. This decrese correlates well with the percentage of the basin that is underlain by "weakly metamorphosed" bedrock. We interpret this variation in mean background water quality to be primarily a function of the mean solubility and/or cation exchange capacity of the stratified drift in the aquifer, which is in turn controlled by the metamorphic grade of the underlying bedrock. We are aware that numerous other factors may influence water quality, but suggest that these factors (pH, temperature, residence time) are minor relative to the composition of the aquifer material which is controlled primarilly by basin bedrock geology and metamorphic grade. More comprehensive evaluation of these data (as well as additional data) is necessary to fully understand the relationship between background water quality and basin geology, metamorphic grade, and other factors.

SIGNIFICANT SAND AND GRAVEL AQUIFER MAPPING IN MAINE

NEIL, Craig D., Maine Geological Survey, State House Station 22, Augusta, ME 04333; NICHOLS, William J., U.S. Geological Survey, 26 Ganneston Drive, Augusta, ME 04330

Until recently, reliable water resources were taken for granted in Maine. Prior to 1962 ground water resource assessments were limited to surficial materials surveys. From 1962 to 1979, the U.S.Geological Survey initiated ground water studies in Maine with the publication of hydrogeological maps of several river basins (Hydrologic Atlas Series). To improve the understanding of Maine's hydrogeological resources, the statewide sand and gravel aquifer mapping program was established in 1978. Consequently, the Maine Geological Survey, in cooperation with the Maine Department of Environmental Protection and the U.S. Geological Survey, has been accurately defining the hydrogeological characteristics of sand and gravel deposits in the state. To date, the mapping study has coverede more than 10,000 square miles in southern, eastern, and northern Maine. Maps and reports produced through this program delineate sand and gravel aquifers capable of yielding >10gpm yield, present geologic- and seismic-cross sections, provide well inventory information and well logs, discuss ground-water quality data, and identify potential sources of ground water contamination. Other programs in conjunction with the project include well inventory database collection, pesticide screening, bedrock ground water resources, and surficial geologic mapping. The aquifer maps and texts contain information on aquifer favorability and vulnerability, and are widely used by local and state officials in making environmentally sound siting decisions, and by well drillers and geological consultants as a base for detailed hydrogeological studies.

HIGH YIELD BEDROCK FRACTURES AND BEDROCK STRATIGRAPHY DEFINED BY SURFACE AND BOREHOLE GEOPHYSICS.

BITHER, Katherine M.; BRENNAN, Thomas J., Robert G. Gerber, Inc., 17 West Street, Freeport, Maine, 04032; RAWCLIFFE, Rudy J.; MIXON, Martha N., Northeast Geophysical Services, 198 Main Street, Yarmouth , Maine, 04096.

Six bedrock borings, located using photolinear analysis and Very Low Frequency (VLF) electromagnetics, produce yields ranging from about 20 to greater than 100 gallons per minute (gpm). In-phase and quadrature field data were collected with a Geonics EM16 VLF instrument along 12 survey lines. Photolinear interpretation and cross over anomalies along the VLF lines provided the six locations for the bedrock borings.

An air hammer was used to drill the six-inch bedrock borings. Wells were cased with 6-inch steel casing through the surficial material. Overburden thickness ranged from 23 to 88 feet of glaciomarine deposits and till. Fracture depths and driller yields were recorded throughout the drilling. Borings ranged from 202 to 502 feet depth from the surface. Individual fractures with yields greater than 50 gpm occurred within the first 35 feet into bedrock. However, fractures yielding up to 8 gpm were encountered up to 400 feet into bedrock, with numerous fractures yielding 8-50 gpm from 35 to 400 feet depth into bedrock.

Borehole geophysical logs of the bedrock borings included natural gamma, spontaneous potential and single point resistivity. These parameters are correlated with stratigraphy in the borings. A Mt. Sopris Model 2500 borehole logger with a chart recorder was used and numerous bedrock cores from the site vicinity provide calibration for the borehole logs.

Borehole logs provided excellent correlation between spontaneous potential anomalies, single point resistivity anomalies, high yield fractures and fracture zones. Natural gamma logs indicated probable lithologic changes.

Bedrock in the site vicinity consists of the Patch Mountain member of the Silurian Sangerville Formation. The general lithology at the site is a discontinuously laminated fine- to medium-grained calcareous feldspathic wacke, locally containing tremolite, chlorite, and pyrite. Granitic intrusives also occur beneath the site.

MONITORING WELL FAILURE IN THIN SEDIMENT OVER BEDROCK.

NILSSON, Harold D., Environmental Consultant, RR 1 Box 1760, Etna, ME 04434.

Existing wells at a Down East Maine landfill were installed in thin (5-15 ft.) till and/or marine silt/clay overlying bedrock with wetland at the surface. Water quality monitoring indicated some contamination. The boreholes were sealed with backfill and 1-ft. bentonite seals near the surface. At least one well failure was indicated by a well riser pipe projecting above the protective standpipe. Wetland soil and the bentonite seal could not support the standpipe which sank into the bentonite. In addition, surface runoff and leachate from the landfill ponded around the monitoring wells. This situation created the potential for surface water to leak along the outside of the standpipe to the screened interval. It was uncertain, therefore, whether contamination was from the aquifer or from surface runoff.

Maine DEP required old wells to be sealed, and new wells to be located within 10 ft. of old wells. Old wells were removed, overdrilled and sealed with Volclay grout. New wells were designed to prevent surface runoff penetration. The entire borehole above the screened interval was sealed with Volclay grout and/or bentonite. Bentonite mounds are constructed around the standpipe to facilitate surface runoff. Standpipe sinking is prevented by L-shaped "feet" attached with hose clamps. It was recommended that surface bentonite disturbance be minimized by constructing soil platforms on top of the bentonite mounds. This also provides convenient access for water sampling.

Water quality analyses since installation of the new wells have not been completed.

HYDROGEOLOGICAL INVESTIGATIONS AT MUNICIPAL LANDFILLS IN MAINE: COMPILATION OF SELECTED GEOCHEMICAL DATA.

CHAMPEON, Elizabeth A.L., S. W. Cole Engineering, Inc., 6 Liberty Drive, Bangor, ME 04401.

The State of Maine, in 1990, instituted a program to close municipal landfills. As part of this program, hydrogeologic investigations were made to provide information on subsurface stratigraphy, the direction of groundwater flow, and the groundwater geochemistry at each site.

A compilation of geochemical data from background and downgradient wells at 14 sites was made, and the results are presented. Sixty-five wells were tested. Twenty-three were considered upgradient.

The average, maximum, minimum and standard deviation was calculated for each parameter evaluated. It was found that iron and manganese often exceeded Drinking Water Standards at both up and downgradient wells. Selenium and arsenic also were evident at both background and downgradient wells.

Iron, manganese, and selenium exceeded Drinking Water Standards on the average in the background wells. Arsenic was found on an average to be within one standard deviation of Drinking Water Standards at the background wells, as were lead, silver and sodium.

APPLICABILITY OF HEADSPACE TECHNIQUES TO LOW VOLATILITY HYDROCARBON PRODUCT ANALYSIS IN SOILS.

LAVALLEE, Fred, PEALE, Robert N., Maine Department Of Environmental Protection, State House Station 17, Augusta ME 04333.

All non-conforming underground petroleum storage tanks in Maine must be removed by October, 1997. Simple, rapid, and accurate field analytical techniques are needed to evaluate hydrocarbon-contaminated soils in tank excavations after removal. Headspace analysis using portable field instruments is a common method used to identify gasoline contaminated soils. Published reports are available on the use of hand-held photo-ionization devices and headspace techniques to quantify such gasoline contamination. However, little information is available on using headspace methods to quantify semi-volatile hydrocarbon products such as #1 and #2 fuel oil. To provide this information, and to expand upon the results of published studies, we designed and completed a series of jar headspace experiments. Soil samples were spiked with weathered gasoline, #1 fuel oil, or #2 fuel oil in concentrations ranging from 100 ug/kg to 50 mg/kg. One or more hand-held photo-ionization (PID) meters and a flame ionzation organic vapor analyzer (OVA) were tested in each experiment. For each instrument at least three replicates were tested at each concentration.

Graphical analysis of our data shows a linear relation between headspace readings and spiked soil concentrations less than 10 mg/kg. However, at concentrations between 10 and 50 mg/kg the relation becomes non-linear but proportional. Instrument to instrument correlatability is variable and PID instrument response differs between manufacturers due to differences in lamp voltages, power sources, and other design factors.

We agree with previous authors that these headspace techiques cannot be used for accurate quantification of hydrocarbons at high concentrations. At soil concentrations of 25 to 50 ppm, the graphs of mean values show significant flattening and the standard deviations of headspace readings begin to overlap. Serial dilution techniques should be used to overcome these limitations. Without serial dilution these instruments should only be used to quantify very low hydrocarbon concentrations. In Maine these techniques will be used to determine if soil hydrocarbon concentration action levels have been exceeded at underground storage tank sites. The sites where action levels are exceeded will be candidates for additional investigation or remediation.

LEACHATE POTENTIAL FROM STOCKPILED PEAT.

NILSSON, Harold D., Environmental Consultant, RR 1 Box 1760, Etna, ME 04434.

A peat-fueled power plant in Down East Maine required approximately 328,000 tons of peat (50 percent moisture) to be stored in a 28 acre area which was located over a sand and gravel aquifer. The Maine Department of Environmental Protection expressed a concern for the generation of leachate from the peat and potential contamination of the aquifer.

Existing peat stockpiles were sampled and analyzed for moisture content, heavy metals, associated water quality and ash composition. Drilling and trenching were conducted in order to evaluate local hydrogeology.

Results of the analyses indicate that stockpiled peat would absorb all precipitation, heavy metal concentrations met all federal and state standards, water quality was typical for undisturbed bogs and peat ash would meet Maine land-spreading standards. In addition to peat's benign properties, further aquifer protection is afforded by approximately 75 feet of unsaturated gravel, sand, silt and clay between the surface and the water table.

REGULATING MINE WASTE IN MAINE
Black Bear Inn, Old Town, Maine
March 27, 1992

A conference on regulating mine waste in Maine will be held at the Black Bear Inn in Old Town on March 27, 1992. Registration will be at 8am, with the opening remarks beginning at 8:30am. Lunch will be provided, with an anticipated conclusion at 3:30pm. The conference is designed to benefit both state government and the university. State government will gain an open forum in which to explain the regulatory role in the development process. Agency representatives will be able to address concerns brought by both developers and citizen groups. Students will be allowed to attend and thus gain exposure to a debate of significance for Maine's economy and environment.

Three metal mining projects have been proposed for Maine. In 1991, the state concluded a 17-month process in which new regulations were developed. That process was often contentiuous. Concerns and final rules address subjects such as environmental impacts, public participation, operations and waste management. While the rules set the stage for permitting and subsequent project development, conflicts still exist over the proper scope of mining operations in Maine, acceptable impacts and the adequacy of waste management.

In the wake of the rule making process, those concerned about Maine's mining future need to review where we are and how the new rules will affect the proposed developments. The conference is designed to discuss past mining practices in the state, current regulations and various perspectives on mine management. Since mining wastes are often a focus of citizen concerns, that aspect of mines will serve as an organizing theme. For more information, contact:

Environmental Studies Center
11 Coburn Hall
University of Maine
Orono, ME 04469
207-581-1490

MAINE MINERAL SYMPOSIUM
University of Maine, Augusta
May 15-17, 1992

You are invited to attend the third annual Maine Mineral Symposium at the University of Maine, Augusta campus on the weekend of May 15-17, 1992. Sponsors are the Federation of Maine Mineral and Gem Clubs, Water-Oak Gem and Mineral Society, and the Maine Geological Survey. The Friday night and Saturday program will be held at the University and nearby Senator (Best Western) Inn. The program will include guest speakers on Maine and New Hampshire mineral localities, specimen exhibits, publication sales, dealers, and a specimen auction. Among this year's speakers are Dr. Michael Wise of the Smithsonian Institution, Dykstra Eusden of Bates College, Robert Whitmore (owner of Palermo Mine in New Hampshire), and Vandall King of Rochester, New York. A field trip to a local mine or quarry for geological study and specimen collection is planned for Sunday. For further information and registration forms, contact:

Woodrow Thompson
Maine Geological Survey
State House Station 22
Augusta, ME 04333
207-289-7178

TRICHLOROETHYLENE CONTAMINATION CONFERENCE - June 23, 1992

The Yankee Section of the American Institute of Hydrology (AIH) and the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) will hold a conference on Trichloroethylene Contamination on June 23, 1992 at CRREL in Hanover, New Hampshire. Cosponsoring organizations include the Geological Society of New Hampshire, the Water Resources Research Center of the University of New Hampshire and possibly others.

The morning session will focus on a TCE contamination problem at CRREL, including both soil materials and complex groundwater conditions. The afternoon session will include state-of-the-art addresses on TCE and VOC (volatile organic compounds) technology in general by one or more experienced, competent and knowledgable geochemists, as well as dynamic TCE (or related compound) case histories from the northern New England area. Registration including lunch will be $20.00 until June 1; $30.00 thereafter. Registration forms will be available in late March from:

W. Brad Caswell
Caswell, Eichler and Hill
Route 1, Box 36
West Topsham, VT 05086

COASTAL LAND LOSS SHORT COURSE
University of Southern Maine
April 10, 1992

The Geological Society of Maine and the Department of Geosciences of the University of Southern Maine are cosponsoring a short course on Coastal Land Loss. The course will be held on Friday, April 10, 1992 in Room 10 of Bailey Hall on the USM campus. Registration will begin at 8am, with class starting at 8:30am. The instructors are Dr. Joseph Kelley of the Maine Geological Survey, Dr. Robert Morton of the Texas Bureau of Economic Geology, and Dr. Orrin Pilkey of Duke University. The course will address sea-level change, facators affecting beach stability, hard stabilization, beach nourishment, retreat from the eroding coast, and land loss in New England, as well as along the central, southeast and Gulf coasts. This course was previously taught at the 1989 International Geologic Conference and the 1990 National Meeting of the Geological Society of America.

The course is oriented to non-experts in the field of coastal geology. Registration fees will be $15.00 for students and $35.00 for all others. The registration fee includes the short course notes published by the American Geophysical Union and breaks. It does

not include lunch. Lunch will be available at the USM cafeteria or local restaurants.

An optional free field trip will be led by Dr. Kelley on Saturday, April 11. Field trip participants should congregate in the parking lot at the Clam Bake Restaurant on Route 9 in Pine Point at 8:30am. Travel will be by personal vehicle. Stops will include Pine Point, Old Orchard, Camp Ellis, Wells, and Ogunquit.

For additional information, contact Carolyn Lepage at 207-865-6138 or Joe Kelley at 207-581-2162.

THE GEOLOGICAL SOCIETY OF MAINE

AND DEPARTMENT OF GEOSCIENCES OF THE UNIVERSITY OF SOUTHERN MAINE

PRESENT

REGISTRATION FORM

a short course and field trip on

COASTAL LAND LOSS

REGISTRATION FORM

APRIL 10 - 11, 1992, at BAILEY HALL, USM GORHAM

REGISTRATION: $35.00 (professional); $15.00 (student);

payable to Geological Society of Maine

clip or photocopy and mail: c/o Marc Loiselle, Maine Geological Survey, State House Station 22, Augusta, ME 04333

includes 1 - day short course, short course notes, coffee breaks; field trip transportation must be by personal vehicle.

FOR DETAILS SEE NOTICE IN NEWSLETTER

NAME: _____

For more information call Joe Kelley (207-289-2801) or Carolyn Lepage (207-865-6138)

THE MAINE GEOLOGICAL SURVEY

FEDERATION OF MAINE MINERAL AND GEM CLUBS

AND THE WATER - OAK GEM AND MINERAL SOCIETY

PRESENT

REGISTRATION FORM

THIRD MAINE MINERAL SYMPOSIUM

REGISTRATION FORM

MAY 15 - 17, 1992

at the University of Maine, Augusta and the Senator Best Western Inn, Augusta

REGISTRATION: $8.00;

payable to Maine Mineral Symposium

clip or photocopy and mail: c/o Robert Hinckley, Yarmouth Road, Route 115, Gray, ME 04039

includes admission to 1-day meeting, exhibits, dealers and auction; Sunday field trip transportation in personal vehicle.

FOR DETAILS SEE NOTICE IN NEWSLETTER

NAME: _____

For more information and a meeting agenda call Woodrow Thompson (207-289-2801)

MEMBERSHIP DUES STATEMENT

The GEOLOGICAL SOCIETY OF MAINE, INC. is a non-profit corporation established as an educational Society to advance the professional improvement of its members; to inform its members and others of current and planned geological programs in Maine; to encourage continuing social contact and dialogue among geologists working in Maine; and to further public awareness and understanding of the geology of the State of Maine, and of the modern geological processes which affect the Maine landscape and the human environment.

The Society holds three meetings each year, in the late fall (Annual Meeting), early spring, and mid-summer (usually field trips). A newsletter, THE MAINE GEOLOGIST, is published for all members four times a year (more or less), approximately on a quarterly basis starting in September. The Society year runs from August 1st to July 31st. Annual dues and gift contributions to the Society are tax deductible. There are three classes of memberships:

$7.00 REGULAR MEMBER	Graduate geologists, or eqivalent, with one year of practice in geology, or with an advanced degree.
$6.00 ASSOCIATE MEMBER	Any person or organization desirous of association with the Society.
$4.00 STUDENT MEMBER	Persons currently enrolled as college students.
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THE GEOLOGICAL SOCIETY OF MAINE
c/o Arthur M. Hussey, II, Department of Geology, Bowdoin College, Brunswick, ME 04011

THE MAINE GEOLOGIST is published four times a year, more-or-less, in early Fall, mid-Winter, Spring, and maybe Summer, for members of the Geological Society of Maine, a non-profit educational Maine corporation interested in all aspects of the geology of the state of Maine.
Correspondence about membership in the Society should be mailed to Marc Loiselle, Maine Geological Survey, State House Station 22, Augusta, ME 04333.
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Mike Foley
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4/89