

New Mexico Geological Society

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Front Matter

(Usually includes Dedication, President's Message, & Conference Organizer's Message.)

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Annual NMGS Fall Field Conference Guidebooks

Every fall since 1950, the New Mexico Geological Society (NMGS) has held an annual [Fall Field Conference](#) that explores some region of New Mexico (or surrounding states). Always well attended, these conferences provide a guidebook to participants. Besides detailed road logs, the guidebooks contain many well written, edited, and peer-reviewed geoscience papers. These books have set the national standard for geologic guidebooks and are an essential geologic reference for anyone working in or around New Mexico.

Free Downloads

NMGS has decided to make peer-reviewed papers from our Fall Field Conference guidebooks available for free download. This is in keeping with our mission of promoting interest, research, and cooperation regarding geology in New Mexico. However, guidebook sales represent a significant proportion of our operating budget. Therefore, only *research papers* are available for download. *Road logs*, *mini-papers*, and other selected content are available only in print for recent guidebooks.

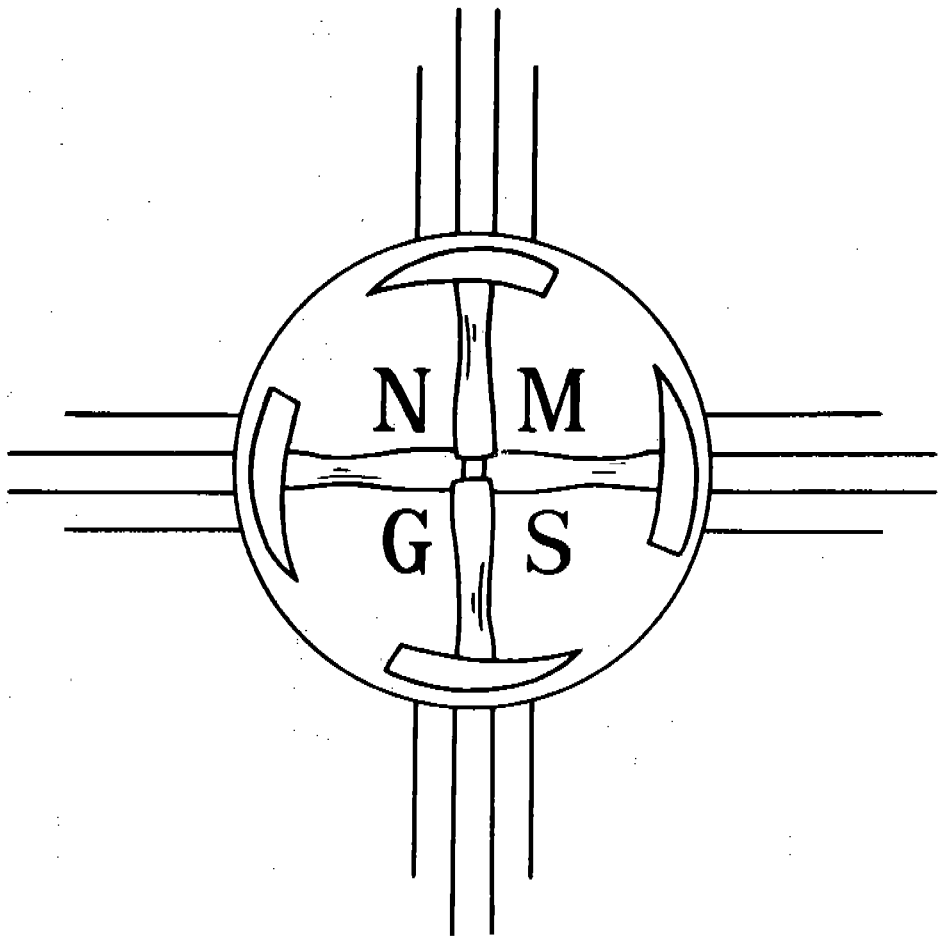
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NEW MEXICO GEOLOGICAL SOCIETY



Guidebook

OF THE

South and West Sides

OF THE

SAN JUAN BASIN

NEW MEXICO AND ARIZONA

SECOND FIELD CONFERENCE

October 12-13-14, 1951

NEW MEXICO GEOLOGICAL SOCIETY * SECOND FIELD CONFERENCE * SAN JUAN BASIN

EDUCATIONAL INSTITUTIONS

University of New Mexico
Albuquerque

New Mexico Institute of Mining & Technology
Socorro

Welcome to the University:

The University of New Mexico hopes that you will make yourselves at home on the campus during registration for the Field Conference of the New Mexico Geological Society.

The campus is situated on an eminence in the eastern part of Albuquerque, almost within the shadow of the towering Sandia Mountains to the east, and overlooks the historic Rio Grande to the west. The campus is a mile above sea level.

It is our hope that you may find time to visit around the campus and see the modified Indian pueblo style of architecture which has been incorporated uniformly into its buildings.

The scope of the institution's educational program is wide and therefore many departments serve the petroleum industry in one way or another. The departments of chemical engineering, mechanical engineering, electrical engineering, and civil engineering, all within the College of Engineering, train men who take active parts in the various phases of the petroleum industry. The large Fuels Section of the U. S. Geological Survey is located at the University of New Mexico.

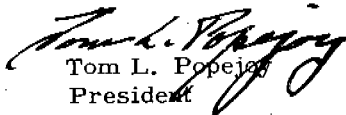
The University has a very fine library and its facilities are made available to industry and the public. The geology library has proved especially useful to the petroleum geologists in this part of the State.

The Department of Geology is located on the second floor, west wing of the building in which registration is held. They have a fine museum in which are exhibits of minerals, fossils, and rocks. In addition to their regular exhibits, there are special displays for this occasion, including maps, charts, and cross sections of the San Juan Basin region.

The faculty of the Department of Geology has had a long and wide interest in the geology of New Mexico, and its members are very active in geological research in and near the San Juan Basin. The department graduates students with bachelor's and master's degrees specialized in stratigraphy, paleontology, sedimentation, mineralogy, petrography, or mining geology.

It is my hope that you will have a most enjoyable and successful Field Conference.

Sincerely yours,


Tom L. Popejoy
President

New Mexico Institute of Mining and Technology extends its heartiest welcome to the participants in the second Field Conference of the New Mexico Geological Society.

This institution in all of its three divisions; namely, the College Division, the State Bureau of Mines and Mineral Resources, and the Research and Development Division has a very strong interest in the geology of the state as well as the various industries which are concerned with the development of the mineral resources of the state. The faculty and the professional staff of the three divisions of the institution are actively engaged in research on various problems of interest to the petroleum industry and other mineral industries. Staff members of the Department of Geology especially have been active in geologic research in the San Juan Basin and elsewhere in the state.


Students are graduated with a bachelor's degree in geology, geophysics, petroleum engineering, mining engineering, metallurgical engineering, and in the related basic fields of chemistry, mathematics, and physics. In addition, graduate work leading to the master's degree is performed in geology and geophysics.

The Petroleum Section of New Mexico Bureau of Mines and Mineral Resources is very active in its services to the petroleum industry. Oil-well sample cuttings, sample descriptions and plotted log strips on many of the wells drilled in New Mexico are available for reference use at the Bureau. Copies of 6,000 drillers' logs for most of the wells drilled in New Mexico may be obtained from the Bureau of Mines. The Bureau publishes bulletins, many of which are on subjects of interest to petroleum geologists. Maps and bulletins of the United States Geological Survey that pertain to New Mexico may be obtained from the Bureau at the regular sale price.

The Bureau of Mines and Mineral Resources is also actively sponsoring and cooperating in several geological mapping projects in New Mexico. Members of the staff of the Bureau of Mines are available for regular consultation service to representatives of the industry.

I extend my best wishes to you for an enjoyable and successful Conference.

Sincerely yours,


E. J. Workman
President

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FOREWORD

The New Mexico Geological Society welcomes you to its Second Field Conference. We hope by means of this conference to round out the study of the San Juan Basin undertaken at the First Field Conference in November 1950. Much of the section you will see is highly controversial and it is hoped that new ideas and conclusions may be developed under stimulus of discussion and good fellowship.

We regret the necessity for so much travel over gravel or other non-surfaced roads; the areas which we will traverse comprise some of the finest combinations of colorful vistas and perfect outcrops known anywhere and perhaps the scenery and geology will compensate in a small way for the inconveniences.

OFFICERS OF THE SOCIETY

President

Charles B. Read

U. S. Geological Survey

First Vice-President

William B. Hoover

Humble Oil and Refining Company

Second Vice-President

John E. Allen

New Mexico Institute of Mining
and Technology

Secretary-Treasurer

Eugene Callaghan

New Mexico Bureau of Mines and
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Three year term

Humble Oil and Refining Company

Joseph L. Borden

Two year term

Pure Oil Company

Sherman A. Wengerd

One year term

University of New Mexico

ACKNOWLEDGMENTS

The Conference Committee gratefully thanks each person and organization contributing to the field conference and guidebook.

The Committee is especially indebted to the University of New Mexico for providing facilities for registration; to the United States Geological Survey for the Polaroid Land Camera used to illustrate the road logs; and to the New Mexico Bureau of Mines and Mineral Resources for providing office facilities and personnel for the preparation of the guidebook. The Humble Oil and Refining Company through its Albuquerque and Roswell offices contributed markedly to the preparation of the guidebook. The State Geologists at Santa Fe contributed a great deal of statistical information as well as maps. Many of the maps and plates in the guidebook were possible only through the cooperation of the Cartographic Office of the U. S. Soil Conservation Service which provided the reproductions for printing.

CONFERENCE COMMITTEE

General Chairman

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New Mexico Institute of Mining
and Technology

Advisory

Eugene Callaghan.....

New Mexico Bureau of Mines and
Mineral Resources

John W. Harshbarger.....

U. S. Geological Survey

William B. Hoover.....

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Vincent C. Kelley.....

University of New Mexico

Charles B. Read.....

U. S. Geological Survey

Caswell Silver.....

Consulting Geologist

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Consulting Geologist

Margaret Pickett (Assembling).....

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U. S. Geological Survey

Marian Jo Cowan (Drafting).....

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Hilda Kalish (Drafting).....

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New Mexico Institute of Mining
and Technology

Edward C. Beaumont.....

U. S. Geological Survey

John W. Harshbarger.....

U. S. Geological Survey

William B. Hoover.....

Humble Oil and Refining Company

Vincent C. Kelley.....

University of New Mexico

Charles B. Read.....

U. S. Geological Survey

Gordon Wood.....

U. S. Geological Survey

Trip Arrangements

Samuel Johnson (Chairman).....

Consulting Geologist

Eugene Callaghan (Reservations).....

New Mexico Bureau of Mines and
Mineral Resources

Stewart M. Jones (Caravan).....

New Mexico Institute of Mining
and Technology

Edward C. Beaumont.....

U. S. Geological Survey

William B. Hoover.....

Humble Oil and Refining Company

Sherman A. Wengert.....

University of New Mexico

Mark Whelan.....

Independent

Registration

Gordon Wood (Chairman).....

U. S. Geological Survey

J. Paul Fitzsimmons.....

University of New Mexico

SCHEDULE

Thursday, October 11

2:00 p. m. Registration. Administration Building, University of New Mexico.

Friday, October 12.

7:00 a. m. Caravan assembles on northeast corner of University Campus.

7:30 a. m. Caravan leaves Albuquerque, New Mexico.

5:30 p. m. Caravan arrives Grants, New Mexico.

7:00 p. m. Informal dinner and program arranged by the Grants Chamber of Commerce.

Saturday, October 13. Grants, New Mexico to Gallup, New Mexico.

6:00 a. m. Breakfast in Grants, New Mexico

7:30 a. m. Caravan leaves Grants, New Mexico assembling at west end of town.

6:00 p. m. Caravan arrives Gallup, New Mexico.

7:30 p. m. Informal dinner with Kodachrome slides of second and third days trip by W. B. Hoover, Humble Oil and Refining Company.

Sunday, October 14. Gallup, New Mexico to near Shiprock, New Mexico.

6:00 a. m. Breakfast in Gallup, New Mexico.

7:30 a. m. Caravan leaves Gallup, New Mexico assembling at west "Y".

6:00 p. m. Caravan disbands near Shiprock, New Mexico.

Conference Ends.

GENERAL INSTRUCTIONS

1. It is essential that the caravan start each morning at the announced time. Your cooperation will be appreciated.
2. You will be seated in a different car each day (except drivers). Your car assignments are listed on the slips which give your room assignments and your total charges for the trip. If you wish to ride in some special car, please notify some member of the Arrangements committee the night before you make the change.
3. You will be assigned to your lodging reservations at the time of registration. Please do not make any subsequent change of room without notifying some member of the Arrangements Committee.
4. Please pay your lodging bill in advance or before you go to breakfast so as to not delay the departure time of the caravan.
5. The third day of the Conference is almost exclusively within the confines of the Navajo Indian Reservation; roads are poorly marked and in many cases impassible. Please do not leave the caravan before the completion of the Conference without notifying some member of the Arrangements Committee.
6. There will be several pick-up trucks in the caravan and if you have luggage which will not fit in the car in which you are riding notify a member of the Arrangements Committee and you will be provided with space for your luggage in some other car in the caravan.
7. The person sitting in the front seat with the driver should keep him informed of stops, points of danger, points of interest, etc., noted in the road log, and he should read the geologic road log to the driver.

SPECIAL INSTRUCTIONS TO CAR DRIVERS

1. DO NOT DISREGARD THE WARNINGS IN THE ROAD LOGS CONCERNING ROAD CONDITIONS, THEY ARE FOR YOUR PROTECTION.
2. You will be given a numbered placard for attachment to your rear window. This number designates your position in the caravan.
3. If for any reason you have dropped out of line, you may resume your position at any subsequent stop. A space will be left for you by the driver in your rear at all stops until you return.
4. Never pass another Conference car while the caravan is in motion unless that car has dropped out of line.
5. If you have car trouble, please stop at the side of the road and allow the caravan to pass. If you need help, flag down the tow-car which will be at the rear of the caravan.
6. Please service your car at night to insure prompt departure the following morning.
7. Gasoline cannot be purchased on the Navajo reservation on Sunday. As noted elsewhere in the road log, the Society is making arrangements for a tank truck to bring gas to the last stop on the third day of the conference; the gas will be sold in a strictly cash transaction because of the limitations of time. You are requested to determine carefully how much you will need to return to Gallup or wherever you may be heading before the truck is ready to service you. Use as little as possible in order that every one may be served in the shortest possible time. Oil may also be purchased at this same stop.
8. Water is very scarce and if your car has a tendency to overheat, you should carry water with you on both the second and third days of the trip. The grade over the Chuska Mountains at the end of the third day of the trip is exceedingly steep and the great majority of cars boil traversing this pass. There is a spring about one-third of the way up the hill which will provide plenty of water but in order to keep the caravan moving, only those which are in especial need should stop.
9. At stops when double parking in more than one line, drive as close as possible to the adjacent line and leave as little space as possible (one foot or less) between bumpers.