

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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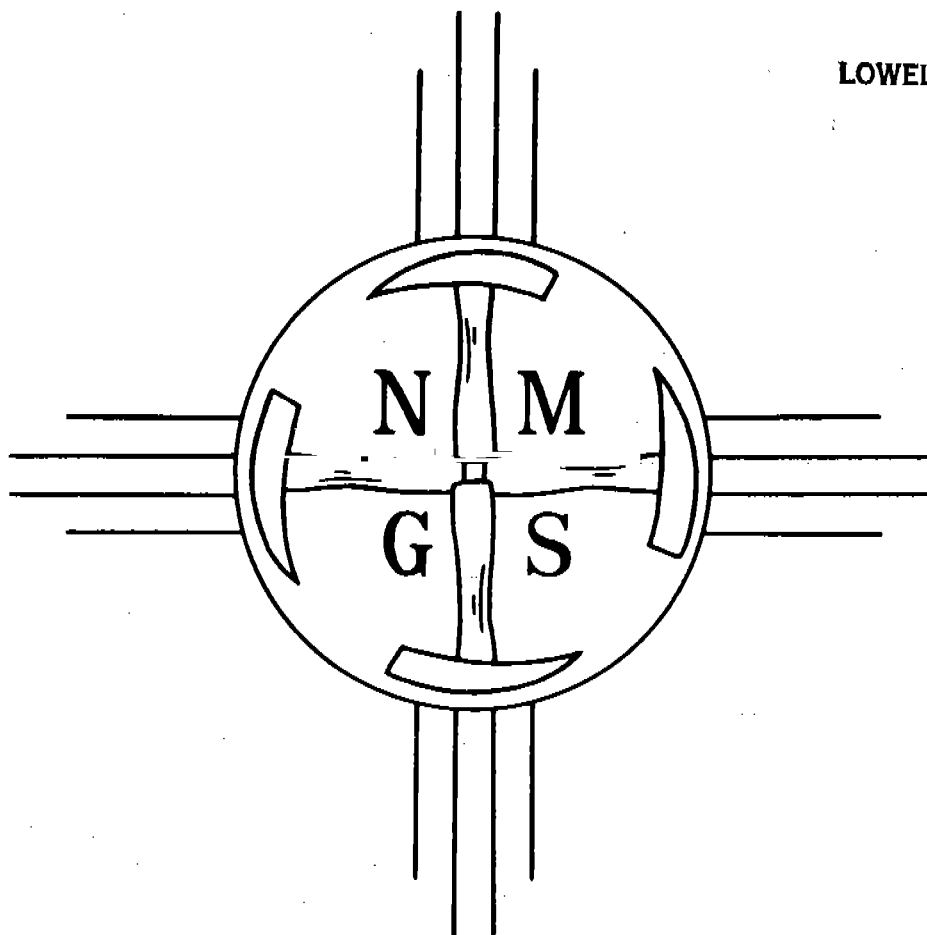
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NEW MEXICO GEOLOGICAL SOCIETY

LOWELL E. BOGART



Guidebook

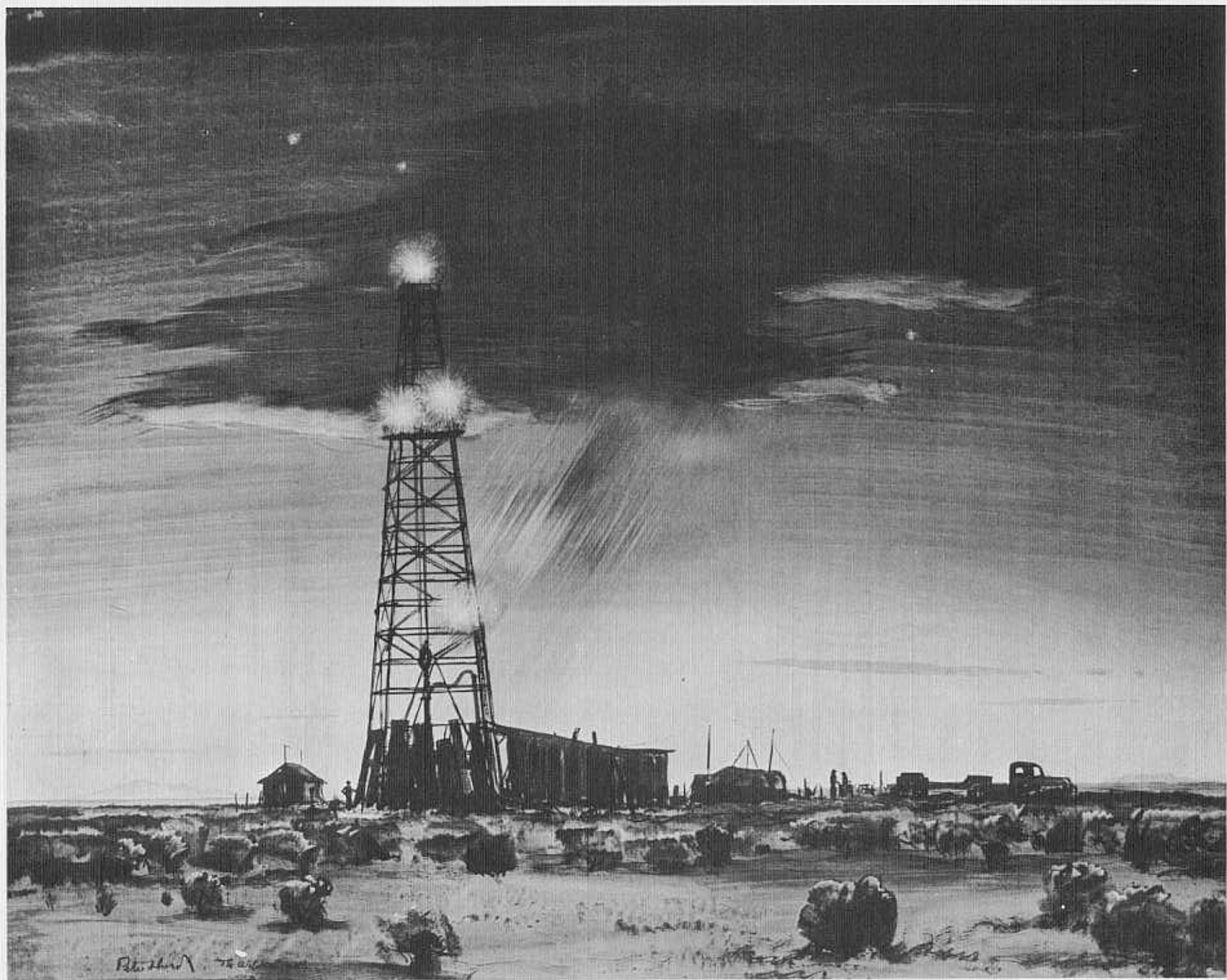
OF

SOUTHEASTERN

NEW MEXICO

FIFTH FIELD CONFERENCE

October 21- 22-23 & 24, 1954



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FOREWORD

The New Mexico Geological Society extends a cordial welcome to all participants in its FIFTH FIELD CONFERENCE. Previous conferences sponsored by this society have traversed the San Juan Basin area of the northwestern corner of the State, the Rio Grande country of central New Mexico, and the basin and range province of the southwestern portion of the State. This excursion affords an opportunity to examine the structure and stratigraphy of the Sacramento-Guadalupe Mountains region of southeastern New Mexico.

The Sacramento and Guadalupe Mountains have been the objective of previous field trips, but the classic exposures, complex structure, and controversial stratigraphic relationships undoubtedly merit much more than the usual amount of attention. The Sacramento escarpment furnishes excellent outcrops of a section ranging in age from the pre-Cambrian to the middle Permian, while the Guadalupe Mountains and Delaware Basin offer exposures of the type upper Permian section for the North American Continent characterized by striking facies changes resulting from specialized conditions of sedimentation. Along the Barrera del Guadalupe the fabulous Carlsbad Caverns exist as a mecca for the speleologist. The Delaware Basin is yielding a huge tonnage of potash from the largest deposits in the world and is showing promise of becoming a major petroleum province.

The allotted time for this conference is not sufficient to cover the region as thoroughly as could be desired, however, it is believed that the route of the trip will allow its participants to gain a clear concept of its general geology and its associated problems. In addition, this guidebook has been designed to serve as a convenient reference to the Sacramento-Guadalupe Mountains region. Toward this end qualified authors have furnished numerous papers, heretofore unpublished, which have been included as a contribution to the conference. The opinions expressed in these papers, as well as elsewhere in this guidebook, may or may not concur with those of the field trip committee; nevertheless all ideas proposed are believed to have merit and should be objectively considered by the reader.

Your participation in the discussions at all stops is invited and your comments will be appreciated. We sincerely hope that this excursion stimulates your interest in the geology of the region, and that you will take part in the good fellowship that always prevails wherever geologists congregate.

NEW MEXICO GEOLOGICAL SOCIETY

The New Mexico Geological Society had its beginning in 1947 at which time a group of farsighted geologists anticipated the service such an organization could render to the State of New Mexico and the geologic profession. A copy of the Society's Constitution, effective as of January 1, 1954, may be obtained by addressing the secretary. Pursuant to one of its purposes, the Society sponsors annual field conferences of which this is the fifth. Membership has grown from a small number to 240 active, associate, student and honorary members. A list of those comprising the present membership may be found in this guidebook.

OFFICERS OF THE SOCIETY

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T. F. Stipp		United States Geological Survey
	Vice President	
Phil D. Helmig		Malco Refining Company
	Secretary	
Roy M. Milks		Magnolia Petroleum Company
	Treasurer	
Waldemere Bejnar		Consultant, Socorro, New Mexico

ACKNOWLEDGEMENTS

The New Mexico Geological Society and the members of the Conference Committee wish to acknowledge with gratitude and sincere appreciation the generous assistance and unrestrained cooperation of all members, individuals, organizations, companies and advertisers who have contributed to the field conference and guidebook.

The Society is particularly indebted to the authors of the various papers appearing in the guidebook. These individuals have freely contributed their time and knowledge to furnish pertinent material which has not been published elsewhere. Much of the information contained herein has been extracted from publications of the United States Geological Survey, the American Association of Petroleum Geologists, and the Geological Society of America in addition to guidebooks compiled by other societies. To these principal contributors as well as to those mentioned in the following pages, the society is most grateful.

The editor and general chairman wish to express their special thanks to Dr. Lloyd C. Pray of the California Institute of Technology who has expended a great amount of time and effort in contributing most of the data pertaining to the Sacramento Mountains portion of this conference; and to all committee members and authors who have helped to produce this guidebook. The editor and general chairman also wish to thank Peter Hurd for permission to reproduce some of his paintings; R. Vernon Hunter, Director, Roswell Museum, for making these paintings available for reproduction; and Maurice G. Fulton for preparing the paper on the early history of southeastern New Mexico.

CONFERENCE COMMITTEE

General Chairman

Rex Alcorn Sun Oil Company

CONFERENCE COMMITTEE (Continued)

Guidebook

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Sanford P. Fagadau, Guadalupe Mountains	Atlantic Refining Company
Richard F. Meyer, Guadalupe Mountains	Humble Oil & Refining Company
Tracy P. Clark, Guadalupe Mountains	Stanolind Oil & Gas Company
C. L. Bruce, Guadalupe Mountains	Stanolind Oil & Gas Company
Edward J. Matchus, Guadalupe Mountains	Union Oil Company of California

Road Log

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George O. Bachman, Foothills Region	United States Geological Survey
Vilas P. Sheldon, Pecos River Valley	Consultant, Artesia, New Mexico
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SCHEDULE

Thursday, October 21.

4:00 p.m. Registration, Alamogordo, New Mexico.

10:00 p.m. Registration desk closes.

SCHEDULE (Continued)

Friday, October 22. Alamogordo to Carlsbad, New Mexico.

7:30 a.m. Caravan assembles at Alamogordo Reservoir (See road log)

8:00 a.m. Caravan leaves Alamogordo Reservoir.

12:00 m. Lunch vicinity of Alamogordo, New Mexico.

1:00 p.m. Caravan assembles at Mile 3.1 on road log.

1:30 p.m. Caravan leaves Assembly Point.

6:00 p.m. Caravan arrives and disbands Carlsbad, New Mexico.

7:30 p.m. Late registration, Carlsbad, New Mexico. Location to be announced.

8:30 p.m. Late registration desk closes.

Saturday, October 23. Guadalupe Mountains Area, New Mexico and Texas.

7:00 a.m. Caravan assembles north city limits, Carlsbad, New Mexico, on U.S. Highway 285.

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

12:30 p.m. Lunch vicinity of White's City, New Mexico.

1:00 p.m. Caravan assembles vicinity White's City, New Mexico.

1:30 p.m. Caravan leaves vicinity White's City, New Mexico.

4:30 p.m. Caravan disbands Guadalupe Summit, Texas.

6:30 p.m. Social hour, Riverside Country Club, Carlsbad, New Mexico.

7:30 p.m. Banquet, Riverside Country Club, Carlsbad, New Mexico.

10:00 p.m. Riverside Country Club closes.

Sunday, October 24. 1. Carlsbad to International Minerals and Chemical Corporation's Potash Mine.

2. Carlsbad to Carlsbad Caverns.

7:00 a.m. Potash mine caravan assembles at Bataan Bridge east edge of Carlsbad on U. S. Highway 62-180.

Carlsbad Caverns caravan assembles on U.S. Highway 62-180 at Carlsbad Municipal Airport.

7:30 a.m. Caravans depart for destinations.

12:00 m. Potash mine caravan disbands.

1:00 p.m. Carlsbad Caverns caravan disbands.

Fifth Field Conference Ends.

GENERAL INSTRUCTIONS

1. It is imperative that the caravan starts each morning at the announced time. Your cooperation will be appreciated.
2. If you require transportation for the trip, notify a member of the Arrangements Committee.
3. You will be assigned to your lodging reservations at the time of registration. Please do not make any subsequent change of your reservations without notifying some member of the Arrangements Committee.
4. Please pay your lodging bill in advance or before you go to breakfast so you will not delay the departure time of the caravan.
5. The person sitting in the front seat with the driver will 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.
6. You are especially requested to heed the instructions for Sunday's trips to the International Minerals & Chemical Corporation's potash mine and the Carlsbad Caverns. Your cooperation will aid our guides in giving us an informative and enjoyable tour.

SPECIAL INSTRUCTIONS TO CAR DRIVERS

1. DO NOT DISREGARD THE WARNINGS IN THE ROAD LOGS CONCERNING ROAD CONDITIONS. THEY ARE FOR THE PROTECTION OF ALL OCCUPANTS OF YOUR CAR AS WELL AS OTHER CARS IN THE CARAVAN.
2. You will be given a numbered placard for attachment to your rear window. This number designates your position in the caravan and must be displayed.
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 to 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. Though water is RELATIVELY plentiful, you should carry water if your car has a tendency to overheat.
8. Please pay particular attention to instructions pertaining to parking at all stops and promptly obey the directions of the flag men.