Athel G. Unklesbay, Columbia, Mo.
Raymond E. Peck, A. K. Miller, A. C. Trowbridge
Walter Hillman Walne, Jr., Midland, Tex.
John I. Moore, P. D. Moore, F. H. McGuigan
Sam Nail Webb, Jackson, Miss.
B. W. Allen, J. Garst, Frederic F. Mellen
Robert Womack, Jr., New Orleans, La.
H. N. Hickey, H. T. Richardson, Brame Womack

A.A.P.G. PACIFIC SECTION MEETING, LOS ANGELES, NOVEMBER 17-18, 1949. ABSTRACTS

THURSDAY MORNING, 9:30-12:00
AMBASSADOR HOTEL THEATER

Presiding: John E. Kilkenny, Chanslor-Canfield Midway Oil Company, Los Angeles
John H. Beach, Independent Exploration Company, Bakersfield

9:30 (1) Geology of West Slope of Temblor Range, Between Bitterwater Creek and San Diego Creek

Otto Hackel and Roy W. Turner, Independent Exploration Company, Bakersfield, California.

The stratigraphy of the area studied is similar to that of the west side of the San Joaquin Valley. The Pliocene(?) Paso Robles formation unconformably overlaps Miocene to Cretaceous sediments. Upper to middle Miocene (Monterey group) shales and sands are generally lying on Eocene sandstones or are overturned under them. These Eocene (Canoas) sandstones are found in depositional or fault contact with the Cretaceous core of the Temblor Range. Structurally the region is a strongly deformed wedge of sediments between the San Andreas fault zone on the west and the Cretaceous massif on the east. The apex of this wedge is to the northwest and deformation and overturning of the sediments increase in that direction. Anticlinal or fault closures are not readily discernible in the field. Wells in the area have encountered non-commercial oil sands of lower Miocene age. These oil sands or any other lower Miocene beds are not found in the outcrop; hence, a strong possibility exists of finding stratigraphic accumulations of oil in the regionally high portions of the sedimentary wedge.

9:45 (2) San Ardo, A Stratigraphic Analysis

Thomas A. Baldwin, Jergins Oil Company, San Ardo, Calif.

The San Ardo oil field occurs in a stratigraphic trap at the updip shale edge of the Lombardi sand (upper Miocene). The water table of the field was warped synclinally during early Pleistocene time. The San Ardo field accumulated therefore during the Pliocene. Pliocene sediments of the area are described and termed the "San Ardo group," including three partly interbedded and time equivalent facies, Pancho Rico, Etchegoin, and Paso Robles.

It is shown that the shorelines or buttressed edges of sands occurring in the Salinas area have not been favorable for accumulation. It is suggested that Pleistocene structures should be discounted during future exploration in the Paso Robles-Salinas area.

10:15 (3) Geology of Russell Ranch and South Cuyama Oil Fields, Cuyama Valley, California

Rollin Eckis, Richfield Oil Corporation, Los Angeles.

Since the discovery of high-gravity oil in the Cuyama Valley on June 13, 1948, development and exploration have proceeded at a rapid pace. As of October 15, 1949, these operations had resulted in the discovery of two oil fields, and completion of 151 producers, with a restricted daily production of 29,200 barrels. Thirteen development wells and six wildcats were currently drilling.

The two oil fields lie in the western part of the valley. Development to date in the Russell Ranch field covers an area approximately 4½ miles long and ½ mile wide. Trending southeasterly from the top of White Rock Bluff, it straddles the Cuyama River, lying partly in San Luis Obispo County and partly in Santa Barbara County. Production here is from two sand zones, Dibblee, the upper, and Colgrove, the lower. Both are of lower Miocene age. The oil field occurs on a northeast-dipping monocline against a large, normal fault, known as the Russell fault. This fault trends approximately N. 30° W., and dips steeply to the southwest. The Dibblee sand lies at depths ranging generally from 2,800 to 3,200 feet. The Colgrove zone lies approximately 1,000 feet below the top of the Dibblee.

The South Cuyama field, discovered in May of this year, lies in the foothills at the south margin of the valley, about 4 miles southeast of the Russell Ranch field in Santa Barbara County. Its productive limits have not yet been determined, but present development and productive outposts extend over an area 3 miles long and more than 1½ miles wide. This oil field occurs on an elongated faulted dome, its long axis trending northwest and southeast. Production is from the Dibblee zone, encountered at depths ranging from 4,000 to 4,400 feet. Exploration has not yet been carried below this zone. Unlike the Russell Ranch field, South Cuyama has a gas cap area at the crest of the dome.

The Dibblee sand is a friable, well sorted arkose, ranging from fine- to coarse-grained. It is characterized by high porosity, high permeability, and high productive indices. Potentials in both fields range upward to several thousand barrels per day. The Colgrove sand is similar in character to the Dibblee and well potentials are comparable, though generally somewhat smaller due to the lesser thickness of sand. Both fields are being developed on a ten-acre spacing pattern, with duplicate wells where the Colgrove zone is productive.

10:45 Nomination of Officers.

10:55 (4) GEOLOGY AND PROBLEMS OF EXPLORING FOR OIL IN NORTHERN ALASKA
Col. O. F. Kotick, USA, Naval Petroleum Reserve No. 4, Fairbanks, Alaska (read by Frank Morgan, Richfield Oil Corporation, Los Angeles).

The Arctic is a land of natural excesses and severities. Special problems are presented by the excessively cold temperatures, protracted periods of darkness, winds, fogs, permafrost, and magnetic storms.

The Lisburne limestone (Mississippian) forms prominent scarps and slopes along the north front of the Brooks Mountain Range, which is the northwestern extension of the Rocky Mountains. In the foothill belt north of the mountains, Permian, Triassic, Jurassic, and Cretaceous rocks are represented.

Cretaceous rocks make up the bulk of the drillable sediments of the Arctic basin. These rocks attain a maximum thickness of about 22,000 feet, principally dark shales with some fine, tight sandstones and silts.

Northward thrust faults provide the major structural features along the front of the Brooks Range; this orogeny has resulted in the lower Mesozoic rocks immediately in front of the Range being broken up into a highly complex zone of isoclinal and overturned folds and thrust faults. Farther north the outcropping Cretaceous rocks are gently folded into long east-west trending structures, slightly steeper on the north limbs.

All types of known accepted tools have been or are being used in this exploration project including magnetometer, gravity meter, seismograph, core drill, surface and subsurface geology, aerial photography, and photo-geology, and test wells with all accepted devices for well survey. Eight test wells have been drilled to date, and twelve more are planned through 1952.

The natives, organization and planning for exploration, and the extraneous activities supported by Navy funds are described briefly.

THURSDAY AFTERNOON, 2:00–4:00

Presiding: WILLIAM F. BARBAT, Standard Oil Company of California, San Francisco
LOYDE H. METZNER, Signal Oil and Gas Company, Los Angeles

2:00 (1) OFFSHORE SEISMIC PROBLEMS AFFECTING GEOLOGIC EVALUATION
Curtis H. Johnson, General Petroleum Corporation, Los Angeles, and Robert B. Galeski, Honolulu Oil Corporation, Los Angeles.

During 1948 and 1949 joint seismic operations were conducted offshore the coast of California by a group averaging 14 oil companies employing two crews for a total of 13 crew-months. This joint effort was required by the California Division of Fish and Game to minimize damage to fish. During this work a notable variety of problems were encountered.

It is concluded that geophysical methods other than seismic are not of sufficient resolving powers in the California offshore areas to detail structure.

Problems peculiar to marine work are: secondary energy bursts, circumvented by either firing charges shallow or jetting them into the bottom; multiple reflections from the ocean floor, which result in apparent reflections below basement for shallow water, unusable records in water around 500 feet deep and complete repetitions of section for very deep water; occurrence of high angle "erratics," interpreted in terms of faulting, buried stream channels, and bottom irregularities; constant velocity in deep water, handled by projecting shots and detectors to the ocean floor; surveying over vast expanses of water, accomplished by the use of shoran; and timing the programming of specific lines to best overcome bad weather, ocean traffic hazards, and damage to fish.