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STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND MINERALS

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MINES AND PETROLEUM BULLETIN

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OIL AND GAS NEWS

Nine applications for drilling permits were approved by the Division's Petroleum Branch as follows:

Permit No. 68-25. Union Oil Company of California #K-8 Trading Bay Unit, A.P.I. No. 50-133-20097. Surface location: 725' FSL and 133' FEL, Sec. 17, T9N, R13W, S.M. Bottom hole location: 290' FSL and 2,490' FEL, Sec. 19, T9N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-26. Union Oil Company of California #G-9 Trading Bay Unit, A.P.I. No. 50-133-20098. Surface location: 1,886' FSL and 1,382' FEL, Sec. 29, T9N, R13W, S.M. Bottom hole location: 1,900' FSL and 1,200' FEL, Sec. 27, T9N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-27. Union Oil Company of California #A-14 Trading Bay State, A.P.I. No. 50-133-20099. Surface location: 1,601' FSL and 570' FEL, Sec. 4, T9N, R13W, S.M. Bottom hole location: 260' FSL and 630' FWL, Sec. 4, T9N, R13W, S.M. This development location is in the Trading Bay Field.

Permit No. 68-28. Union Oil Company of California #D-5 Trading Bay Unit, A.P.I. No. 50-133-20100. Surface location: 761' FSL and 1,132' FWL, Sec. 6, T8N, R13W, S.M. Bottom hole location: 654' FSL and 2,029' FWL, Sec. 6, T8N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-29. Pan American Petroleum Corporation #12 MGS State 17595, A.P.I. No. 50-133-20101. Surface location: 1,989' FSL and 588' FWL, Sec. 31, T9N, R12W, S.M. Bottom hole location: 0' FSL and 1,400' FWL, Sec. 31, T9N, R12W, S.M. This lease line location is authorized by Rule 5 of Conservation Order No. 44 and will eventually be an injection well.

Note: Permit No. 68-23. The name of Atlantic Richfield Company's #2 Prudhoe Bay State has been changed to #1 Sag River State and the location changed from 1,880' FSL and 550' FEL, Sec. 4, T10N, R15E, U.M. to 866' FSL and 2,637' FWL, Sec. 4, T10N, R15E, U.M.

Permit No. 68-30. Shell Oil Company #C-23-23 Middle Ground Shoal, A.P.I. No. 50-133-20102. Surface location: 547' FSL and 1,599' FEL, Sec. 23, T8N, R13W, S.M. Bottom hole location: 2,240' FSL and 2,480' FWL, Sec. 23, T8N, R13W, S.M. This development location is in the Middle Ground Shoal Field.

Permit No. 68-31. Pan American Petroleum Corporation #10 South Middle Ground Shoal Unit, A.P.I. No. 50-133-20103. Surface location: 743' FSL and 1,818' FWL, Sec. 35, T8N, R13W, S.M. Bottom hole location: 2,000' FSL and 1,500' FWL, Sec. 35, T8N, R13W, S.M. This development location is in the Middle Ground Shoal Field.

Permit No. 68-32. Pan American Petroleum Corporation #11 South Middle Ground Shoal Unit, A.P.I. No. 50-133-20104. Surface location: 699' FSL and 1,872' FWL, Sec. 35, T8N, R13W, S.M. Bottom hole location: 2,140' FSL and 2,140' FEL, Sec. 35, T8N, R13W, S.M. This development location is in the Middle Ground Shoal Field.

Permit No. 68-33. Union Oil Company of California #A-15 Trading Bay State, A.P.I. No. 50-133-20105. Surface location: 1,624' FSL and 570' FEL, Sec. 4, T9N, R13W, S.M. Bottom hole location: 985' FNL and 1,630' FEL, Sec. 4, T9N, R13W, S.M. This development location is in the Trading Bay Field.

DRILLING ACTIVITY

<u>Operator.</u>	<u>Well Names & Numbers</u>	<u>Type</u>	<u>Status</u>
Atlantic Richfield Co.	Prudhoe Bay #1	E	Drilling
Atlantic Richfield Co.	Sag River State #1	E	Location
Atlantic Richfield Co.	West Foreland Unit #5	E	Drilling
Mobil Oil Corp.	Granite Point State #22-13	D	Drilling
Mobil Oil Corp.	Granite Point State #24-13	D	Comp. Oil Well
Mobil Oil Corp.	Granite Point State #31-23	D	Comp. Oil Well
Mobil Oil Corp.	Granite Point State #33-14	D	Drilling
Mobil Oil Corp.	Granite Point State #44-11	D	Location
Pan American Petroleum Corp.	Granite Point State 17587 #5	D	Temp. Susp.
Pan American Petroleum Corp.	Granite Point State 18742 #11	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #12	D	Comp. Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #14	D	Temp. Susp.
Pan American Petroleum Corp.	Granite Point State 18742 #16	D	Comp. Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #18	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #19	D	Comp. Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #20	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #21	D	Location
Pan American Petroleum Corp.	Granite Point State 18742 #23	D	Drilling
Pan American Petroleum Corp.	MGS State 17595 #12	D	Location
Pan American Petroleum Corp.	MGS State 17595 #14	D	Testing
Pan American Petroleum Corp.	South MGS Unit #5	D	Comp. Oil Well
Pan American Petroleum Corp.	South MGS Unit #8	D	Comp. Oil Well
Pan American Petroleum Corp.	South MGS Unit #9	D	Drilling
Pan American Petroleum Corp.	South MGS Unit #10	D	Temp. Susp.
Pan American Petroleum Corp.	South MGS Unit #11	D	Drilling
Shell Oil Company	Bachatna Creek #1	E	Location
Shell Oil Company	MGS C-23-23	D	Drilling
Shell Oil Company	MGS C-24-26	D	Comp. Oil Well
Shell Oil Company	MGS C-34-26	D	Drilling
Standard Oil Co. of Calif.	Lewis River Unit 13-2	E	Abandoned
Union Oil Co. of Calif.	Trading Bay State A-14	D	Drilling
Union Oil Co. of Calif.	Trading Bay State A-15	D	Location
Union Oil Co. of Calif.	Trading Bay Unit D-2	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit D-3	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit D-4	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit D5	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-5	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-8	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit G-9	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-10	D	Drilling

Union Oil Co. of Calif.	Trading Bay Unit K-3	D	Location
Union Oil Co. of Calif.	Trading Bay Unit K-4	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit K-5	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit K-6	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit K-8	D	Drilling
U. S. Navy	South Barrow #7	D	Comp. Gas Well

"E" indicates an exploratory well, and "D" a development well.

PRODUCTION - March 1968 (Gas now all at pressure base of 14.65 psi)

<u>Field</u>	<u>Oil-Bbls</u>	<u>Water-Bbls</u>	<u>Gas-MCF</u>	<u>*No. of Wells</u>	<u>Cum. Oil</u>	<u>Cum. Gas</u>
Granite Point	1,435,705	7,212	1,106,123	24(1)	11,330,172	7,847,995
McArthur River	1,319,456	8,480	357,736	10	3,469,421	981,176
Middle Ground Shoal	1,236,151	75,507	609,329	39(1)	13,559,574	6,081,806
Swanson River	1,161,226	177,415	1,937,954	30(20)	78,407,100	37,779,236
Trading Bay	198,530	1,336	178,068	11(4)	1,224,920	1,204,999
TOTAL	5,351,806	269,950	4,189,210	114(26)	107,991,187	53,895,207
Beluga River			62,619	3(1)		213,094
Kenai			3,178,917	17(2)		99,098,520
Kenai Deep			257,618	1		265,618
Moquawkie			9,669	1		51,595
Sterling			17,778	1(1)		643,816
South Barrow			52,821	2(1)		3,543,048
Trading Bay			11,160	1		78,085
Total Dry Gas Fields (Active)			3,590,582	26(5)		103,893,776
Inactive Gas Fields - 3				(19)		12,028,262
STATE GRAND TOTAL	5,351,806	269,950	7,778,068	140(50)	107,991,187	169,817,245

*Dual completions are included as two wells; triple, as three. () Number of producers shut-in, standing or inactive this month.

ATOMIC ENERGY STATEMENT

The Atomic Energy Commission made an interesting point at a recent hearing held by the Public Land Law Review Commission. After citing the need for government support for uranium mining and for additional mapping by the U. S. Geological Survey, the AEC outlined the many limitations to mineral entry imposed by Federal statutes and administrative actions. Following this, the AEC (itself a government agency) stated that "it would make little sense to continue a legislative objective of encouraging and supporting the nuclear industry and, at the same time, have or adopt laws or policies which curtail such industry by cutting off access to its base commodity or fail to recognize its legitimate needs with respect to prospecting, exploration, and mining.

"There is a potential impediment to the development of a nuclear industry and atomic energy if disposals or other actions restrict the accessibility and utilization of public lands for prospecting, exploration, and mining of uranium - as well as for other essential minerals."

NEW COMMERCIAL ASSAY LAB

A. L. Renshaw, consulting mining engineer of Anchorage, announces the opening soon of the Alaska Minerals Lab at 2229 Spenard Road. June 1 is the target date. It will be the only commercial lab of its kind in Alaska and the first in at least thirty years. The Alaska Minerals Lab will feature atomic absorption and spectrophotometry analyses, general assaying and geochemical analyses. We are pleased to see this addition to Alaska's hardrock mineral industry.

NEW BEAR CREEK MINING OFFICE

Bear Creek Mining Co., Kennecott exploration subsidiary, has re-established an office in Anchorage. Senior Geologist Clyde E. Wetherell is in charge. The present address is 999 E. Tudor Road, Anchorage.

NEW U.S.G.S. PUBLICATIONS

The following open file U. S. Geological Survey reports are available for consultation at 108 Skyline Bldg., Anchorage Alaska 99501; Brooks Bldg., College, Alaska 99701; 441 Federal Bldg., Juneau, Alaska 99801; 678 U.S. Court House Bldg., Spokane, Wash. 99201; 504 Custom House, San Francisco, California. 94111; 7638 Federal Bldg., Los Angeles, Calif. 90012; 1012 Federal Bldg., Denver, Colo. 80202, as well as in the following offices of the Alaska Division of Mines and Minerals: 3001 Porcupine Dr., Anchorage, Alaska 99504; 509 Goldstein Bldg., Juneau, Alaska 99801; University Ave., College, Alaska 99701:

Geology of the Iliamna quadrangle, Alaska, by Robert L. Detterman and Bruce L. Reed., 1 sheet, scale 1:250,000.

Metallic mineral resources map of the Nome quadrangle, Alaska, compiled by Edward H. Cobb. 12 p., 1 index map; 1 map, scale 1:250,000.

Metallic mineral resources map of the Teller quadrangle, Alaska, compiled by Edward H. Cobb and C. L. Sainsbury. 8 p., 1 index map; 1 map, scale 1:250,000.

REVISION OF INFORMATION CIRCULARS

The Division of Mines & Minerals is revising Information Circular No. 9 - Dealers in Alaskan Rocks and Minerals. Anyone who would like his name or business included in the circular should please contact the Division at Box 5-300, College, Alaska.

We are also revising Information Circular No. 8 - Mineral Industry Consultants available For Work in Alaska. Consultants who would like their names included should also get in touch with us. Consulting specialties should be listed or described.

DIVISION PROGRAM FOR 1968

As in past years, areas considered favorable for ore deposits of economic importance will be investigated by the staff of the Division and reports published on the results. The purpose of the program is to provide information to encourage and assist further field work by prospectors and mining companies.

Southeastern Alaska

Kasaan-Hetta Inlet, Prince of Wales Island: Numerous rich copper-iron deposits have been mined in this area. Geochemical, geological, and geophysical (magnetic) mapping projects will be conducted and prospects re-examined.

Southcentral and Southwestern Alaska

Talkeetna Mountains: Continue preliminary investigations of A. W. Rose (Division geologic report No. 32) on sources of copper anomalies on the Talkeetna River and possible extension of similar occurrences in the vicinity of Iron and Sheep Creeks.

Beluga and Bering River coal areas: Check exploration activities and conduct geological work where needed or advisable.

Wood River - Tikchik Lakes Region: Completion of a project started in 1967. Significant geochem anomalies found last year will be investigated and mapping and sampling extended into new areas.

Northcentral Alaska

Farewell area, Kuskokwim Region: Extend detailed mapping and sampling in an area of dikes and intrusives along the Farewell fault in the Alaska Range.

Upper Koyukuk River: Examination of copper occurrences and their relation to granite intrusives for possible ore-bodies of commercial importance.

Bornite Area: Detailed geological-geochemical mapping of a possible copper belt will be done along the southern flank of the Brooks Range.

Uranium investigations will be conducted along the margins of lowland basins.

Northwestern Alaska

Sinuk area, Seward Peninsula: Further studies on iron deposits and lead-zinc geochemical anomalies of ore-target size.

Prospect investigations, mining district evaluations, and geochemical and geological work will be performed where advisable.

OIL FIELDS OF COOK INLET, ALASKA An Abstract

By Graydon H. Laughbaum, Jr., Union Oil Company of California

Significant increases in petroleum production continue in the Cook Inlet basin of Alaska, moving the state closer to being the fifth leading oil producer in the United States by 1971. Five fields account for a total present output of more than 145,000 b/d. Swanson River, Middle Ground Shoal, Granite Point, McArthur River, Foreland, Dolly Varden, and Trading Bay collectively have estimated producible reserves in excess of 750 million bbl.

One of 15 geologic basins in the state, the Cook Inlet basin has an area of 9,500 sq. mi. lying approximately 45 percent offshore, 15 percent in tidal areas, and 40 percent onshore. The basin's Cenozoic stratigraphy generally is represented by a maximum thickness of 25,000+ ft of nonmarine Tertiary rocks. Mesozoic limestone, marine clastic sedimentary rocks, and volcanic rocks unconformably underlie the Tertiary.

Major structure and fault systems trend north-northeast. Tectonism occurred throughout the Mesozoic and Cenozoic and continues into the Recent as in other areas of the circum-Pacific tectonic belt. Faulting and folding are most prominent in the northwestern part of the basin close to the Alaska Range—a range which includes dioritic and granitic mountains with numerous active volcanoes.

Oil has been found in the classic anticlines. Production is from sandstone and conglomerate beds of the Kenai Group including the Middle Kenai and Hemlock Formations. Faulting and stratigraphic variations in part control accumulation and fluid properties. All reservoirs contain undersaturated oil close to bubble-point pressure requiring early secondary recovery efforts. Oil gravities range from 25° to 56° API. Average daily production per well is about 1,400 bbl.

E. AND N. J. METAL MARKET PRICES

	<u>April 15</u>	<u>Month Ago</u>	<u>Year Ago</u>
Copper, per lb.	42¢	Suspended	38¢
Lead, per lb	14¢	14¢	14¢
Zinc, per lb	14¢	13.5¢	15¢
Tin, per lb	145.750¢	145.8¢	153.5¢
Nickel, per lb	94.00 ¢	94.00¢	82.25¢
Platinum, per oz.	\$ 226-228	\$ 109-114	\$ 109-112
Mercury, per flask	\$ 558-565	\$ 560-590	\$ 487-500
Antimony ore, per unit	\$5.00-5.95	\$5.00-5.95	\$5.20-620
Beryllium Powder, 98% (1b)	\$ 54-66	\$ 54-66	\$ 54-66
Chrome ore, long ton	\$ 31-35	\$ 31-35	\$ 31-35
Molybdenum Conc., per lb.	\$ 1.62	\$ 1.62	\$ 1.62
Titanium ore, per ton	\$ 21-24	\$ 21-24	\$ 21-24
Tungsten, per unit	\$ 43.00	\$ 43.00	\$ 43.00
Silver, New York, per oz.	218.00¢	225.00¢	129.3¢