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

Box 5-300
College, Alaska 99701

MINES AND PETROLEUM BULLETIN

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REORGANIZATION OF DIVISION

The Division of Mines and Minerals has been divided into two Divisions, each with a new name. The Petroleum Branch of the old Division of Mines and Minerals is now the Division of Oil and Gas. It remains at 3001 Porcupine Drive, Anchorage, and the phone number remains 279-1433. A Director will be named soon. Oil and gas news will continue to be reported in this Bulletin until other arrangements are made.

The name of the original Division has been changed to the Division of Mines and Geology to more accurately reflect its work and to designate it as the official State geological agency. It now consists of four Branches: Administration, Mining, Laboratory, and Geology. James A. Williams remains the Director, and the Division location is at College (phone 479-2202) as per the above heading except for its two Mining Information Offices. The Anchorage Mining Information Office remains at 3001 Porcupine Drive and the phone number is 279-2814. The Juneau Mining Information Office is in the Goldstein Building at Department headquarters. The mailing address there is Pouch M, Juneau, and the phone number is 586-6351.

Thomas E. Kelly, Commissioner of the Department of Natural Resources, stated that the change was made to upgrade the Petroleum Branch to meet the "obvious need of placing greater emphasis on control and effective regulation of oil and gas production to protect the State's interest." It is understood that the oil and gas leasing function of the Division of Lands may be added to the Division of Oil and Gas sometime in the future. The reorganization now places four Divisions under the Department of Natural Resources: Agriculture, Lands, Mines and Geology, and Oil and Gas.

DMG QUARTERS DEDICATED

The office and laboratory quarters of the Division of Mines and Geology on the campus of the University of Alaska were the scene of a dedication ceremony and open house on the afternoon of Saturday, October 5. Speakers for the occasion were Governor Walter J. Hickel, University President William R. Wood, Commissioner of Natural Resources Thomas E. Kelly, University Board of Regents President Elmer E. Rasmuson, Alaska Miners Association (Fairbanks Branch) Chairman Denny G. Breaid, Kennecott Copper Corp. representative Charles T. Penney, and Division Director James A. Williams. Earl H. Beistline, Dean of the University College of Earth Sciences and Mineral Industry, was Master of Ceremonies. A goodly crowd turned out.

Governor Hickel's address included the following: "This is a very minimum start. It was a difficult decision to make it happen. What we are in here today is an idea that has just been born. I would like to see a mines and minerals complex here second to none. There is not a spot on earth with such great potential, yet where so little has been done to explore and search out the riches as here in Alaska. It is appalling to allow this lack of interest. In the areas of government that compete with the free world, they are far ahead of us in real mineral wealth. As sure as I am

standing here, one of the things Kruschev meant when he said he would bury us and what Russia is doing, is economics. What we are going to try to do here for the United States and the free world is try to bring us up in the next ten years to where we should have been twenty years ago. There is great opportunity here in this Pacific basin. Federal, State and University have to get together behind one idea and in one spot to have a Mines and Minerals building and facilities that can really do all the things we have talked about, and take advantage of what has been given us. That is a real future."

Commissioner Kelly said: "We are most honored here today to go through this facility. It is a combination of quite a few years' effort. Governor Hickel wisely saw this quite a few years ago--the idea to have the State Division of Mines and Minerals to work with the University in cooperation--in materials and ideas for the development of exploration work in hardrock mining. Toward this end he worked to transfer this Division from Juneau to Fairbanks. This is just a start. It is our hope that a large industry building incorporating Federal, State and University mineral organizations will be housed in one facility. It will be a good thing for all Alaska because we have such tremendous mineral potential. This will allow the sharing of ideas to further the advancement in this aspect of science."

Following the brief addresses, a tour of the offices and laboratory was held for all those interested. The entire staff was on hand to display our facilities and equipment and explain how our work is done and why it is important to the development of the State's mineral resources. Favorable comments were heard from those attending. If we missed anyone with our mailed invitations sent out in advance who might have attended, we apologize to them.

NATIVE RESERVATION MINING PROPOSAL

Two officials of the U.S. Bureau of Indian Affairs recently talked with various mining authorities throughout Alaska on preliminary plans for opening certain Native reservations for mining. They were David Jones, Valuation Engineer, of Washington and Charles H. Jones, Realty Officer, of Juneau. The two Mr. Jones (no relation) explained that prospecting permits and leases on Indian reservations in the South 48 have been very successful and that Alaskan reservations should be made available for development without further delay.

Possibilities under discussion include one-year nonexclusive prospecting permits to be effective in 1969, followed by competitive bidding for exclusive prospecting permits with options to lease. The exclusive prospecting permits would be of longer duration - perhaps five years - and would probably be renewable at least once. Bidding would be on one or a combination of straight bonuses, rentals, royalties, or work to be performed. Tracts would be large -- up to 100,000 acres or more. Reservations being considered for opening include Akutan, Annette Island, Diomede Island, Karluk, Klukwan (parts not already under lease), Unalakleet, Venetie-Chandalar, and Wales.

Final plans are expected to be announced by the B.I.A. by January, 1969. For further information, contact Mr. David Jones, Valuation Engineer, U.S. Department of Interior, Bureau of Indian Affairs, 1951 Constitution Avenue, N.W., Washington, D.C. 20242.

NEW DIVISION PUBLICATIONS

The Division of Mines and Geology has released four reports as listed and described below. They are available from our College office by mail and "over the counter" at our Mining Information Offices at Anchorage and Juneau as well as at the College office. The price is $1.00 each.

Geochemical Report No. 16, A Geochemical Investigation of a Portion of the Fortymile District, Alaska. The area covered includes the drainage of Chicken, Lost Chicken, Franklin, Ingle, Wall Street, Fortyfive Pup and Buckskin Creeks, portions of Mosquito and South Forks of the Fortymile River, and eight other unnamed adjacent creeks. A total of 176 stream sediment samples were taken, of which 25 had probable or possible anomalous concentrations of copper, zinc, lead, molybdenum, or nickel. Limited bedrock sampling, including possibly mineralized veins, were undertaken, and 26 samples were selected for assay or analysis. A computation of results from both sources reveal three areas worthy of more detailed investigation. The report contains four pages of text, three tables of sample and rock analyses, and a geochemical map. The author is William H. Smith, Geology Field Assistant of the Division.

Geochemical Report No. 17, A Geochemical Investigation of the Wood River-Tikchik Lakes Area, Southwestern Alaska. The area examined includes the perimeters of the four major lakes of the Wood River Lake system and one of the six lakes in the Tikchik Lake system. The party collected 372 stream sediment samples in the area. The results indicate that mercury analysis is a good geochemical tool for prospecting in the region. Zinc appeared to be the best indicator of the heavy metals group. Geochemical anomalies and other field evidence indicated the most favorable locations for exploration are the following: (1) Marsh Mountain, (2) the south side of the southeast end of Lake Aleknagik, (3) the ridge on the south side of Sunshine Valley, and (4) the ridge on the south side of Little Togiak Lake. The report contains 18 pages of text, two tables of sample and rock analyses, and three maps. The author is Gilbert R. Eakins, Mining Geologist of the Division.

Geologic Report No. 26, Geological and Geochemical Investigations Southwest of Farewell, Alaska. This report covers about 100 square miles of an upland block bounded along the north edge by the Farewell fault. Recurrent movements along this great break probably have had a strong influence on the emplacement of igneous rocks in the area. A swarm of steep, west-trending, mafic to acidic dikes extends eastward for a distance exceeding five miles from the large granitoid stock at the head of the Middle Fork of the Kuskokwim. Stream sediments contain scattered nickel, copper, molybdenum, and zinc anomalies in the upper Middle Fork drainage. These are associated with diabase dikes and/or black slate within and marginal to the silicified aureole around the large granitoid stock at the head of the Middle Fork. One small nickel-bearing pyrrhotite deposit is associated with diabase in this area. The report consists of 10 pages of text, a geological-geochemical map of the area, and a geologic-geochemical tabulation of sampling results and rock analyses. The author is Gordon Herreid, Mining Geologist of the Division.

Geologic Report No. 29, Progress Report on the Geology and Geochemistry of the Sinuk Area, Seward Peninsula, Alaska. This report and Division of Mines and Minerals Geologic Report No. 24, released in May 1966, describe investigations in the Sinuk district made by the author during 1965 and 1966. Several mineralized localities, indicated by numerous gossans and geochemical anomalies make up the district. Geochemical anomalies found during the 1965 field season at the Quarry and Galena prospects, the Monarch gossan, and elsewhere have been reported (Herreid, 1966). A geochemical anomaly discovered in 1966 on Aurora Creek is herein reported. The geology as mapped to date is shown as well as all of the geochemical data and several new assay. The report consists of two pages, one map, and three geologic-geochemical tabulations of sampling results and rock analyses. The author is Gordon Herreid, Mining Geologist of the Division.

NEW USGS PUBLICATIONS

The following circular has recently been released by the USGS and may be obtained free at the various USGS and Division of Mines and Geology offices.

Circular 593, "Distribution of gold and some base metals in the Slana area, Eastern Alaska Range, Alaska" by Donald E. Richter and Neal A. Matson, Jr. This report, in which the State Division of Mines and Geology cooperated, points out that in the Slana area, covering about 240 square miles on the south flank of the eastern part of the Alaska Range, trace amounts of gold and base metals, detected in samples of stream sediments and igneous country rocks, show patterns of distribution that may serve as clues to hidden deposits. These patterns, shown in a series of maps, serve to outline favorable target areas believed worthy of exploration by private interests.

The following open file reports have been released by the USGS and are available for consultation in the Alaskan USGS and State Division of Mines and Geology offices. Material from which copies of these open file reports can be made at private expense is available in the Alaska Geology Branch, USGS, 345 Middlefield Road, Menlo Park, California 94025.

1. Metallic mineral resources map of the Skagway quadrangle, Alaska, compiled by Edward H. Cobb. 3 p., 1 map, 1 index map.
2. Metallic mineral resources map of the Mount Fairweather quadrangle, Alaska, compiled by Edward H. Cobb. 6 p., 1 map, 1 index map.
3. Metallic mineral resources map of the Juneau quadrangle, Alaska, compiled by Edward H. Cobb. 7 p., 1 map, 1 index map.
4. Metallic mineral resources map of the Sitka quadrangle, Alaska, compiled by Edward H. Cobb. 5 p., 1 map, 1 index map.
5. Metallic mineral resources map of the Sumdum quadrangle, Alaska, compiled by Edward H. Cobb. 2 p., 1 map, 1 index map.
6. Metallic mineral resources map of the Port Alexander quadrangle, Alaska, compiled by Edward H. Cobb. 2 p., 1 map, 1 index map.
7. Metallic mineral resources map of the Petersburg quadrangle, Alaska, compiled by Edward H. Cobb. 3 p., 1 map, 1 index map.
8. Metallic mineral resources map of the Bradfield Canal quadrangle, Alaska, compiled by Edward H. Cobb. 3 p., 1 map, 1 index map.
9. Metallic mineral resources map of the Craig quadrangle, Alaska, compiled by Edward H. Cobb. 8 p., 1 map, 1 index map.
10. Metallic mineral resources map of the Ketchikan quadrangle, Alaska, compiled by Edward H. Cobb. 4 p., 1 map, 1 index map.
11. Metallic mineral resources map of the Dixon Entrance quadrangle, Alaska, compiled by Edward H. Cobb. 2 p., 1 map, 1 index map.

MINING NEWS

Recent news releases include the following items:

Kendrick Bay Mining Co. has announced the signing of a joint venture agreement with Newmont Mining Corp. The agreement provides for the further development of the Kendrick Bay uranium holdings at Bokan Mountain on Prince of Wales Island with Newmont Exploration, Ltd. as the operator.

The new 100-tone mill of Chandalar Gold Mining and Milling Co. should be completed shortly and ready for operation next spring. Frank Birch, owner, and operator of Chandalar Gold Mining and Milling, estimates 20 years of ore in sight with a worth of $5 million. The district is 200 miles north of Fairbanks, above the Arctic Circle.

Construction of a new highway bridge across the Copper River at Chitina--which will open up hundreds of miles of prime mining and recreation country, has been scheduled for a definite start next spring. Cosby Steen, State Commissioner of highways, said that bids will also be called for this winter for further reconstruction work on the road from Chitina north. Lack of a bridge at Chitina is the main bottleneck to connecting up nearly a hundred miles of roadway along the route of the old Copper River and Northwestern Railroad from Chitina into McCarthy and Kennecott and out to various creeks in that area. The new highway link is expected to be a spur for possible growth of copper mining activity in the area. There are several small mining companies presently active there developing prospects, but it is not feasible to go into production until a road is available for hauling out the mined ore.

The White Pass & Yukon Railway's new ore shipping terminal at Skagway is coming along on schedule. A $1.3 million first phase project includes dredging of a boat basin using the dredged material to provide the base for the foundation for the new terminal. The $3.3 million second phase, to get underway soon, will include mooring facilities for bulk carriers, a storage shed with capacity for 75,000 tons of concentrates, and a conveyor loading system including a 72-foot-high fixed position loading tower. Slated for completion by August 31, 1969, the system will have an annual capacity of 450,000 tons of lead-zinc concentrate and 50,000 tons of copper concentrate. Ships will be loaded at a rate of 1,000 tons per hour. Most of the tonnage is expected to come from Anvil's new lead-zinc mine near Ross River, 120 miles northeast of Whitehorse; it is schedule to go into production next fall. Other smaller mines in the Yukon also will be shipping via the White Pass & Yukon.

VITRO MINERALS CHANGE

Earth Resources Company has acquired Vitro Minerals Corporation, a subsidiary of Vitro Corporation of America, Dan M. Krausse, Earth Resources President, recently announced. Earth Resources is a new company organized in July to explore for minerals, primarily strategic metals. Vitro Minerals has been in business since 1955 as a subsidiary of Vitro Corporation of America, and exploration headquarters are now located in Salt Lake City, Utah. It is active in exploration for precious, base and strategic metals, and is the operator of a joint venture with Marathon Oil Company for uranium exploration in the United States.

A principal income-producing property of Vitro Minerals is the Cripple Creek coal mine near Healy, Alaska, in the Nenana coal field. There will be no change in the present management of Vitro Minerals Corporation, and Mr. C. E. McGuire of Fairbanks will continue to be in charge of the Cripple Creek mine. It is conjectured that the change may make Vitro's postponed Alaskan exploration program a more immediate possibility.

OIL AND GAS NEWS
(Prepared by the Division of Oil and Gas)

Nine applications for drilling permits were approved by the Division of Oil and Gas as follows:

Permit No. 68-76. Union Oil Company of California #A-18 Trading Bay State, A.P.I. No. 50-133-20143. Surface location: 1,624' FSL and 558' FEL, Sec. 4, T9N, R13W, S.M. Bottom hole location: 350' FNL and 550' FWL, Sec. 3, T9N, R13W, S.M. This is a development location in the Trading Bay Field.

Permit No. 68-77. Standard Oil Company of California, W.O.I. #44-8 Moquawkie, A.P.I. No. 50-283-20117. 660' FSL and 660' FEL, Sec. 8, T11N, R11W, S.M. This exploratory location is about two miles southeast of the Moquawkie Gas Field.

Permit No. 68-78. Marathon Oil Company #1 Clam Gulch, A.P.I. No. 50-133-20144. 1,980' FSL and 660' FWL, Sec. 3, T1N, R13W, S.M. This exploratory location is about 25 miles southwest of Kenai, Alaska.

Permit No. 68-79. Shell Oil Company #C-11-26. Middle Ground Shoal, A.P.I. No. 50-133-20145. Surface location: 501' FSL and 1,542'FEL, Sec. 23, T8N, R13W, S.M. Bottom hole location: 1,030' FNL and 940' FWL, Sec. 26, T8N, R13W, S.M. This development location is in the Middle Ground Shoal Field.

Permit No. 68-80. Union Oil Company of California #G-14 Trading Bay Unit, A.P.I. No. 50-133-20146. Surface location: 1,876' FSL and 1,378' FEL, Sec. 29, T9N, R13W, S.M. Bottom hole location: 20' FSL and 1,380' FWL, Sec. 34, T9N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-81. Pan American Petroleum Corporation #1 USA Big Lake, A.P.I. No. 50-009-20001. 1,980' FSL and 1,980' FWL, Sec. 1, T15N, R4W, S.M. This exploratory location is about 25 miles north of Anchorage, Alaska.

Permit No. 68-82. Union Oil Company of California #D-6 Trading Bay Unit, A.P.I. No. 50-133-20147. Surface location: 673' FSL and 1,220' FWL, Sec. 6, T8N, R13W, S.M. Bottom hole location: 2,200' FNL and 40' FEL, Sec. 8, T8N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-83. Union Oil Company of California #K-11 Trading Bay Unit, A.P.I. No. 50-133-20148. Surface location: 617' FSL and 131' FEL, Sec. 17, T9N, R13W, S.M. Bottom hole location: 2,200' FNL and 2,090' FEL, Sec. 20, T9N, R13W, S.M. This development location is in the McArthur River Field.

Permit No. 68-84. Pan American Petroleum Corporation #1 USA Pan American David River, A.P.I. No. 50-211-20001. 1,650' FSL and 1,650' FWL, Sec. 12, T50S, R80W, S.M. This exploratory location is about 50 miles northeast of Cold Bay, Alaska.

DRILLING ACTIVITY (as of September 27, 1968)

Operator	Well Names & Numbers	Type	Status
Atlantic Richfield Co.	Sag River State #1	E	Drilling
B. P. Exploration U.S.A., Inc.	Sag Delta #1	E	Location
Marathon Oil Corp.	Clam Gulch #1	E	Location
Mesa Petroleum Co.	Kasilof Unit #2	E	Location
Mobil Oil Corp.	Granite Point State #44-11	D	Drilling
Mobil Oil Corp.	Granite Point State #42-23	D	Drilling

Operator	Well Names & Numbers	Type	Status
Mobil Oil Corp.	Moquawkie #2	E	Drilling
Pan American Petroleum Corp.	Big Lake #1	E	Location
Pan American Petroleum Corp.	David River #1	E	Location
Pan American Petroleum Corp.	Granite Point State 17586 #5	D	Completing
Pan American Petroleum Corp.	Granite Point State 17587 #5	D	Comp. Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #14	D	Temp. Susp.
Pan American Petroleum Corp.	Granite Point State 18742 #21	D	Location
Pan American Petroleum Corp.	Granite Point State 18742 #22	D	Suspended
Pan American Petroleum Corp.	MGS State 17595 #12	D	Drilling
Pan American Petroleum Corp.	Redoubt Shoal Unit	E	Suspended
Pan American Petroleum Corp.	South MGS Unit #10	D	Temp. Susp.
Pan American Petroleum Corp.	South MGS Unit #11	D	Comp. Oil Well
Pan American Petroleum Corp.	South MGS Unit #12	D	Drilling
Phillips Petroleum Co.	North Cook Inlet State 37831	D	Location
Shell Oil Company	Bachatna Creek #1	E	Abandoned-Location
Shell Oil Company	MGS C-31-23	D	Comp. Oil Well
Shell Oil Company	MGS C-11-26	D	Drilling
Standard Oil Co. of Calif.	Moquawkie 44-8	E	Location
Standard Oil Co. of Calif.	North Trading Bay A-23-27	E	Abandoned
Texaco, Inc.	Trading Bay TS #2	D	Comp. Oil Well
Texaco, Inc.	Trading Bay TS #3	D	Drilling
Texaco, Inc.	Trading Bay TS #4	D	Drilling
The Cherryville Corp.	Middle River State Unit	E	Drilled & Abandoned
Union Oil Co. of Calif.	Kenai Unit 43-6A	D	Comp. Gas Well
Union Oil Co. of Calif.	Kenai Unit 44-30	D	Comp. Gas Well
Union Oil Co. of Calif.	Trading Bay State A-17	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay State A-18	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit D-6	D	Location
Union Oil Co. of Calif.	Trading Bay Unit D-9	D	Comp. Oil Well
Union Oil Co. of Calif.	Trading Bay Unit D-11	D	Location
Union Oil Co. of Calif.	Trading Bay Unit D-12	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-12	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-13	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-14	D	Location
Union Oil Co. of Calif.	Trading Bay Unit K-3	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit K-7	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit K-8	D	Abandoned
Union Oil Co. of Calif.	Trading Bay Unit K-11	D	Location

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

PRODUCTION - August 1968 (Gas pressure base 14.65 psi)

Field	Oil-Bbls	Water-Bbls	Gas-MCF	*No. of Wells Prod.	Cum. Oil	Cum. Gas
Granite Point	989,528	12,520	639,302	31 (3)	16,900,381	12,079,654
McArthur River	2,366,778	**33,175	**652,158	22	13,602,316	3,770,192
Middle Ground Shoal	1,263,717	43,545	531,802	46 (3)	19,801,077	9,008,116
Swanson River	1,060,039	192,183	1,950,475	42 (7)	84,002,698	48,599,555
Trading Bay	327,472	2,912	272,811	15 (3)	2,581,033	2,342,079
Total	6,007,534	284,335	4,046,548	156 (16)	136,887,505	75,799,756

Field	Oil-Bbls	Water-Bbls	Gas-MCF	*No. of Wells Prod.	Cum. Oil	Cum. Gas
Beluga River			166,176	1 (3)		1,079,599
Kenai			3,513,311	17 (1)		115,036,475
Kenai Deep			295,774	1		1,500,623
Moquawkie			25,156	1		713,869
Sterling			10,134	1 (1)		716,737
South Barrow			30,277	3		3,[illegible]2,779
Trading Bay	269		23,622	1	1,489	166,683
Inactive Gas Fields						12,028,262
Total Dry Gas			4,064,450	25 (5)		134,365,027
STATE GRAND TOTAL	6,007,803	284,335	8,110,998	181 (21)	136,888,994	210,164,783

Average per day: Oil, 193,800; Csg. Head, 130,534; Dry Gas, 131,111; Total Gas, 261,645.

*Dual completions are included as two wells; triple, as three. (_) Number of wells not producing in August.

**Water and gas figures were reversed in July. Should have read: Water, 19,990; Gas, 633,488. Total water for oil fields and State, 263,794. Total casinghead gas, 4,819,464; and total gas for State, 8,714,417. No change in cumulative totals.

E. AND M.J. METAL MARKET PRICES

	September 30	Month Ago	Year Ago
Copper, per lb.	41.722¢	41.7¢	39.1¢
Lead, per lb.	12.5¢	12.5¢	14¢
Zinc, per lb.	13.5¢	13.5¢	14¢
Tin, per lb.	152.0¢	142.0¢	151.9¢
Nickel, per lb.	94.0¢	94.0¢	85.25¢
Platinum, per oz.	$120-125	$120-125	$109-112
Mercury, per flask	$550-555	$523-528	$490-495
Antimony ore, per unit*	$5.80	$5.80	$5.26-6.20
Beryllium powder, 98% (lb)	$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	$20-21	$20-21	$21-24
Tungsten, per unit	$43.00	$43.00	$43.00
Silver, New York, per oz.	218.0¢	219.5¢	169.5¢
Gold, Engelhard, per oz.	$40.20	$39.02	----

*Prices quoted for September 30 and month ago are for New York, lump, stu, 60%; price quoted for year ago is for New York, lump, stu, 50%. Apparently 50% antimony is no longer being quoted by E. and M.J.