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Published to Accelerate the Development of the Mining Industry in Alaska

WILLIAM A. EGAN – Governor | CHARLES F. HERBERT – Commissioner

WILLIAM C. FACKLER – State Geologist

IN THIS ISSUE

JAPANESE MINING INDUSTRY DELEGATION VISIT TO ALASKA

A Mining Industry Delegation from Japan is visiting Alaska to study the mining investment opportunities in the state at the invitation of Governor Egan. The group is composed of Team Leader Mr. Kanji Shiobara, Director and Chief of Exploration, Mitsui Mining & Smelting Co., Ltd.; Mr. Hisashi Kamono, Senior Geologist, The Dowa Mining Co., Ltd.; Mr. Isamu Nakamura, Senior Staff, Ataka & Co., Ltd.; Dr. Toshiaki Suzuki, Chief Geologist, Nissho-Iwai Co., Ltd.; Mr. Yasuhiko Ohmori, General Manager, The Nomura Securities Co., Ltd.; Mr. Tetsuro Murai, Senior Staff, Marubeni Corporation; Mr. Umetaro Morishita, Staff, Sumitomo Shoji Kaisha, Ltd.; (Observer) Dr. Moritsuna Saigusa, Director, Metallic Minerals Exploration Agency of Japan and Mr. Eiichi Yugeta, Representative in Canada, Metallic Minerals Exploration Agency of Japan.

The Delegation's activities were coordinated through Mr. Charles F. Herbert, Commissioner, Department of Natural Resources and Mrs. Irene Ryan, Commissioner, Department of Economic Development. Mr. Richard Eakins, Director, Division of Industrial Development, organized the itinerary and is conducting the tour. The Delegation arrived in Anchorage on July 29. Their itinerary is as follows:

July 30 – Dedication Ceremony – "Commemorative Plaque"; Toured Portage Glacier, Earthquake Park and Alyeska Resort.

July 31 – Met with Dr. Allen Clark, U. S. Geological Survey; Mr. George Schmidt, Bureau of Land Management and Mr. William Eckard, Chief of Alaska Field Operations, Bureau of Mines; followed by a courtesy call to the Japanese Consulate. The

afternoon included meeting with Mr. A. Lee Atherton, Vice President, Alaska department, Seattle-First National Bank and Mr. Victor S. Hirakawa, Asst. Vice President, International Banking, Seattle-First National Bank. News conference; dinner hosted by National Bank of Alaska.

August 1 - Visited Lost River Camp, Host: Lost River Mining Co., Ltd.

August 2 - Visit to Bornite Camp, Host: Bear Creek Mining Company.

August 3 - Traveled by Alaska Railroad to Fairbanks, met by Dr. Ernest Wolff, President of Alaska Miner's Association.

August 4 - Morning spent visiting Usibelli Mine, followed by afternoon meeting with officials of University Administration, tour of campus and a visit to the State Geological Survey office.

August 5 - Tour of Fairbanks area, visit to CRREL Ice Tunnel; afternoon visit to placer operation at Fish Creek. Cocktail party hosted by Alaska National Bank and dinner hosted by Alaska Miners Association and AIME.

August 6 - Prudhoe Bay Oil Field tour.

August 7 - Beluga Coal Fields; Kennecott Copper Mine in McCarthy. Evening meeting in Anchorage with Federal Officials - Dwight Ink, Deputy Director, U. S. State Department.

August 8 - Traveled to Juneau. Courtesy call - Governor Egan; News conference and cocktail reception hosted by First National Bank of Anchorage.

August 9 - Meetings with State, Federal Government and Private Industry Officials, then return to Anchorage.

NORTH ALASKA TRANSPORTATION STUDY

The Mineral Industry Research Laboratory of the University of Alaska has been awarded a contract by the U. S. Bureau of Mines to investigate optimum transportation systems to serve the mineral industry north of the Yukon Basin in Alaska. The project will survey the mineral potential in the area north of the Yukon Basin including an estimated evaluation of the location, kind, amount and geological setting of mineral deposits known or believed to be present. Feasible means of transporting exportable mineral products from potential mine sites to tidewater ports and back haul of supplies and equipment will be analyzed by a computer model to determine the combinations of routes and transport modes which will provide the most favorable benefit-cost rates. The transport modes being investigated include truck, rail, pipeline, air, barge and hovercraft.

Principal investigators for the study are Dr. Ernest N. Wolff, Associate Director, Mineral Industry Research Laboratory and Professor of Mineral Exploration, and Chris A. Lambert, Professor and Head, Department of Mineral Engineering, University of Alaska. Others participating in the study are Dr. Nils I. Johansen, Assistant Professor of Geological Engineering, Dr. Richard Solie, Department Head and Professor, Economics, and graduate students Paul R. Clark and Edwin M. Rhoads.

1972 Aeromag Survey

The Aeromagnetic Survey flying is 52% complete as of Saturday, July 29. The Eagle quadrangle, 6206.4 square miles, was completed between June 30 and July 25. The crew at Eagle, flying the Cessna 206, has returned to the lower 48 to work on another contract. While at Eagle they flew 8522 line miles of production in 20 flying days. The crew at Anchorage, flying the Twin Engine Aero Commander, has flown 8137 line miles in 14 flying days; or about 34% of areas A, B, D & E. Estimated date for completion of flying is late September. The contractor, LKB, has increased the Anchorage staff to include an additional man who is working on film processing and flight path recovery.

Aero Service's Twin Engine A-26 is flying Aeromag Survey north of Fairbanks for the U. S. Geological Survey. The plane is based in Fairbanks and flying in the Wiseman, Chandalar, Bettles, Livengood, Beaver, and Tanacross quadrangles.

MINERAL ENGINEERING SCHOLARSHIPS

The minerals industry is taking steps to relieve the shortage of minerals engineers. One should interest the high school graduating class of 1972. Effective with the 1972-73 academic year the Minerals Industry Educational Foundation has approved three $700 competitive scholarships for freshmen entering the study of mineral engineering at the University of Alaska. These scholarships are to continue throughout the four year period of study.

GOLD STAYS AT $65 LEVEL

Free market gold held very firm the last weeks in the face of unresolved monetary uncertainties. London quotes moved in the neighborhood of $65 a tr. oz. during the week, reaching $68.80 on August 1, 1972.

Attacks against the dollar--spurred by the recent pound sterling weakness--continue to threaten the monetary system, although Treasury reversed its previous hands-off policy on Wednesday and intervened on exchange markets to give the currency strength. Meanwhile, a large question remains about Russian sales, particularly in light of increasing trade agreements between US firms and the Soviet Union which could spark added Soviet requirements for foreign currencies, and hence Russian gold exports.

LAND STATUS CHECK ADVISABLE

Ernest N. Wolff, President, Alaska Miners Association has asked the Bulletin to point out that much of Alaska was withdrawn from entry on March 15, 1972. This was under provisions of the Native Claims act, and was done two days before the land was to be returned as specified in that act. It actually imposes a more rigid freeze than had been in effect since 1966. Anyone intending to expend time or money in exploration should check with an office of the Bureau of Land Management, State Division of Lands, or State Geological Survey before going ahead.

DIVISION PUBLICATION

The Division of Geological Survey has recently released the following report: Special Report No. 5 - Preliminary Report on Stratigraphy of Kenai Group, Upper Cook Inlet, Alaska, by D. C. Hartman, G. H. Pessel and D. L. McGee, the price is $2.00.

NEW REPORTS ON ALASKAN GEOLOGY

U. S. Geological Survey open-file reports concerning Alaskan geology are listed here in a form suitable for inclusion in the next volume of the Bibliography of Alaskan Geology published by the Alaska Geological Survey. The numbers assigned to these reports are informal ones used by the Alaskan Mineral Resources Branch of the USGS at Menlo Park, California. New reports are as follows:

Barnes, D. F., 1972, Notes on the processing and presentation of U. S. Geological Survey Alaskan gravity data: U. S. Geol. Survey, Alaskan open-file rept. 529, 25 p., 5 tables

Barnes, D. F., 1972, Sixteen 1:250,000 simple Bouguer gravity anomaly maps of southeastern Alaska showing station locations, anomaly values, and generalized 10-milligal contours. [Included quadrangles are: Prince Rupert, Dixon Entrance, Craig, Ketchikan, Bradfield Canal, Petersburg, Port Alexander, Sitka, Sumdum, Taku River, Juneau, Atlin, Skagway, Yakutat, Icy Bay, and Bering Glacier]: U. S. Geol. Survey, Alaskan open-file rept. 525, 16 sheets, scale 1:250,000

Barnes, D. F., 1972, Southeast Alaska gravity base station network: U. S. Geol. Survey, Alaskan open-file rept. 526, 40 p., 1 fig., 14 tables

Barnes, D. F., 1972, Summary operational report of a preliminary gravity survey of southeastern Alaska: U. S. Geol. Survey, Alaskan open-file rept. 524, 12 p., 1 table

Barnes, D. F.; Olson, R. C.; Holden, K. D.; Morin, R. L.; Erwin, M. J., 1972, Tabulated gravity data from southeastern Alaska obtained during the 1968 field season: U. S. Geol. Survey, Alaskan open-file rept. 527, 76 p.

Barnes, D. F.; Popenoe, Peter; Olson, R. C.; MacKenzie, M. V.; Morin, R. L., 1972, Tabulated gravity data from southeastern Alaska obtained during the 1969 field season: U. S. Geol. Survey, Alaskan open-file rept. 528, 75 p.

Chapman, R. M.; Weber, F. R., 1972, Geochemical analyses of bedrock and stream sediment samples from the Livengood quadrangle, Alaska: U. S. Geol. Survey, Alaskan open-file rept. 530, 2 large sheets, scale 1:250,000

Matson, N. A., Jr.; Richter, D. H., 1972, Additional geochemical data from the Nabesna C-4 and D-5 quadrangles, Alaska: U. S. Geol. Survey, Alaskan open-file rept. 532, 5 p.

Matson, N. A., Jr.; Richter, D. H., 1972, Geochemical data from the Nabesna B-3 quadrangle, Alaska: U. S. Geol. Survey, Alaskan open-file rept. 531, 41 p. (incl. 34 p. tabular material), 1 pl. (scale 1:63,360)

Nelson, C. H.; Pierce, D. E.; Leong, K. W.; Wang, F. F. H., 1972, Mercury distribution in ancient and modern sediment of northeastern Bering Sea: U. S. Geol. Survey, Alaskan open-file rept. 533, 29 p., 4 figs., 4 tables

The Bibliography and Index of Geology (v. 36, no. 3, March 1972 and v. 36, no. 4, April 1972) published by the Geological Society of America contains the following Alaskan entries:

Addicott, W. O., 1971, Tertiary Marine Mollusks of Alaska; An Annotated Bibliography: U. S. Geol. Surv., Bull., No. 1343, 30 p., illus. (incl. sketch maps)

Barnes, P. W., 1971, Sedimentary processes of the northwest coast of Alaska [abstr.]: Natl. Coastal Shallow Water Res. Conf., Abstr., No. 2, p. 264

Berg, E.; VanWormer, J. D.; Bloom, N., 1971, Microearthquakes in the Fairbanks area, Alaska, "b" slopes and Vp/Vs ratios [abstr.]; In Symposium on forerunners of Strong Earthquakes, 8, p. 28: Int. Geod. Geophys., 15th Gen. Assem., Abstr., Moscow

Berg, H. C., 1972, Recognition of large-scale thrust faults and locally related mineral deposits, southeastern Alaska [abstr.]; In Faults, fractures, lineaments and related mineralization in the Canadian Cordillera: Geol. Assoc. Can., Cordilleran Sect., Programme Abstr., p. 8

Boothroyd, J. C.; Ashley, G. M., 1972, Bedforms and sedimentary structure of braided outwash streams, northeastern gulf of Alaska [abstr.]; In Northeastern Section, 7th Annual Meeting: Geol. Soc. Am., Abstr., Vol. 4, No. 1, p. 3

Brabb, E. E.; Grant, R. E., 1971, Stratigraphy and Paleontology of the Revised Type Section for the Tahkandit limestone (Permian) in East-Central Alaska: U. S. Geol. Surv., Prof. Pap., No. 703, 26 p., illus. (incl. sketch map). *Stratigraphic relations, lithology, brachiopod faunas, fossil lists, systematic descriptions, Nation River area*

Butler, H. M., 1971, Palmer Seismological Observatory: Earthquake Notes, Vol. 42, No. 1, p. 15-36, illus. (incl. sketch maps)

Clark, S. H. B.; Foster, H. L.; Bartsch, S. R., 1972, Growth of a talus Cone in the Western Chugach Mountains, Alaska: Geol. Soc. Am. Bull., Vol. 83, No. 1, p. 227-230, illus. (incl. sketch map)

Das, M. M., 1971, Longshore Sediment Transport Rates: A Compilation of Data: U. S. Army, Coastal Eng. Res. Cent., Misc. Pap., No. 1-71, 75 p., illus. (incl. sketch maps)

Douglass, R. C., 1971, Pennsylvanian fusulinids from southeastern Alaska: U. S. Geol. Surv., Prof. Pap., No. 706; 20 p., illus. (incl. sketch maps). *Systematic descriptions, four new species, Pseudostaffela rotunda, Fusulinella pinguis, F. Alaskensis, Fusulina flexuosa, Prince of Wales Island fauna compared to fauna of British Columbia and Japan*

Eisbacher, G. H.; Tempelman-Kluit, D. J., 1972, Map of major faults in the Canadian Cordillera and S.E. Alaska [abstr.] In Faults, fractures, lineaments and related mineralization in the Canadian Cordillera: Geol. Assoc. Can., Cordilleran Sect., Programme Abstr., p. 13-14, map

Hayes, M. O.; Boothroyd, J. C., 1971, Reconnaissance study of coastal processes on the glacial outwash plain shoreline of southeastern Alaska [abstr.]: Natl. Coastal Shallow Water Res. Conf., Abstr., No. 2, p. 98

Holmes, M. L.; Von Huene, Roland; McManus, D. A., 1972, Seismic Reflection Evidence Supporting Underthrusting beneath the Aleutian Arc near Amchitka Island: J. Geophys. Res., Vol. 77, No. 5, p. 959-964, illus. (incl. sketch map)

Lathram, E. H., 1972, Interpretation of lineaments observed on a 1971 satellite photograph of Alaska and western Canada [abstr.]; In Faults, fractures, lineaments and related mineralization in the Canadian Cordillera: Geol. Assoc. Can., Cordilleran Sect., Programme Abstr., p. 15

Lee, W. H.; Gard, L. M., Jr., 1971, Summary of the subsurface geology of the Cannikin site, Amchitka Island, Alaska: U. S. Geol. Surv., 24 p., sketch map, Denver. (USGS-474-132, Amchitka 6-4). *Petrography, physical properties, and chemical composition of volcanic breccias and pillow basalts, Banjo Point Formation and Amchitka Formation*

McKenzie, L. S.; Nemeth, D. F.; Walker, H. J., 1971, Morphology of two arctic river bars [abstr.]: Natl. Coastal Water Res. Conf., Abstr., No. 2, p. 146

Meier, M. F.; Tangborn, W. V.; Mayo, L. R.; others, 1971, Combined Ice and Water Balances of Gulkana and Wolverine Glaciers, Alaska, and South Cascade Glacier, Washington, 1965 and 1966 Hydrologic Years: U. S. Geol. Surv., Prof. Pap., No. 715-A, 23 p., illus. (incl. maps). (Ice and Water Balances at Selected Glaciers in the United States)

Mickelson, D. M., 1972, Glacial geology of the Burroughs Glacier area, southeastern Alaska [abstr.]: Diss. Abstr. Int., Vol. 32, No. 7, p. 4012B

Mickelson, D. M., 1971, Glacial geology of the Burroughs Glacier area, southeastern Alaska: Ohio State Univ., Inst. Polar Stud., Rep., No. 40, 149 p., illus. (incl. maps)

Mickelson, D. M.; Goldthwait, R. P., 1972, Ice marginal channels on Burroughs Glacier, Alaska, compared to central New Hampshire [abstr.]; In Northeastern Section, 7th Annual Meeting: Geol. Soc. Am. Abstr., Vol. 4, No. 1, p. 33

Morris, R. H., 1971, Marine terraces of the western Aleutian Islands, Alaska: U. S. Geol. Surv., 23 p., illus. (incl. sketch maps), Denver. (USGS 47Y-139, Amchitka 30)

Page, Robert; Lahr, John, 1971, Measurements for Fault Slip on the Denali, Fairweather, and Castle Mountain Faults, Alaska: J. Geophs. Res., Vol. 76, No. 35, p. 8534-8543, illus. (incl. sketch maps)

Patton, W. W., Jr.; Csejtey, Bela, Jr., 1971, Preliminary geologic Investigations of Western St. Lawrence Island, Alaska: U. S. Geol. Surv., Prof. Pap., No. 648-C, 15 p., illus. (incl. geol. sketch map) (Shorter Contributions to General Geology). *Devonian to Quaternary lithostratigraphic units, Permian, Cretaceous and Tertiary-Quaternary igneous rocks, structure, metallic mineral occurrences*

Plafker, George, 1972, Alaskan Earthquake of 1964 and Chilean Earthquake of 1960; Implications for Arc Tectonics: J. Geophys. Res., Vol. 77, No. 5, p. 901-925, illus. (incl. sketch maps)

Plafker, George, 1972, New data on Cenozoic displacements along the Fairweather fault system, Alaska [abstr.]; In Faults, fractures, lineaments and related mineralization in the Canadian Cordillera: Geol. Assoc. Can., Cordilleran Sect., Programme Abstr., p. 33-34

Smith, T. E.; Lanphere, M. A., 1971, Age of the sedimentation, plutonism and regional metamorphism in the Clearwater Mountains region, central Alaska: Isochron/West, No. 2, p. 17-20, geol. sketch map

Stoneley, Robert, 1971, A note on the structural evolution of Alaska: Geol. Soc. Lond., J., Vol. 127, Part 6, p. 623-628, sketch maps

Strimple, H. L.; Allison, R. C.; Kline, G. L., 1971, Fossil crinoid studies; Part 2, Pennsylvanian crinoids from Alaska: Kans., Univ., Paleontol. Contrib., Pap., No. 56, p. 9-15, illus.

Sykes, L. R., 1971, Aftershock Zones of Great Earthquakes, Seismicity Gaps, and Earthquake Prediction for Alaska and the Aleutians: Geophys. Res., Vol. 76, No. 32, p. 8021-8041, illus. (incl. sketch maps). *Epicenters, foci, magnitudes and distribution*

Tempelman-Kluit, D. J., 1972, Evidence for timing and magnitude of movement along Tintina trench [abstr.]; In Faults, fractures, lineaments and related mineralization in the Canadian Cordillera: Geol. Assoc. Can., Cordilleran Sect., Programme Abstr., p. 39

NEW REPORTS BY MINERAL INDUSTRY RESEARCH LABORATORY

The Mineral Industry Research Laboratory, University of Alaska, has recently issued two new reports:

MIRL REPORT NO. 24 - "A Computer Processable Storage and Retrieval Program for Alaska Mineral Information". The report is in two volumes: Volume 1 - MINFILE and Volume 2 - Alaskan Mineral Deposits. The authors are Lawrence E. Heiner and Eve Porter.

The Laboratory developed this program for Alaska mineral information to facilitate resource studies. The basis for the file is the Division of Geological Survey Mineral Kardex system which contains an entry for every mineral property in Alaska that has been claimed under the mineral staking laws.

Volume 1 contains the following computer programs: MINFILE 1 refers to a program that stores mineral information on magnetic tape. MINFILE 2 is a Retrieval Program, MINFILE 3 is a program to correct and make additions to the file. MINFILE 4 and 5 are utility programs used for maintenance of the system. Volume 1 will be of particular interest to people engaged in computer applications.

Volume 2 - Alaskan Mineral Properties, contains a computer printout of all known Alaskan mineral deposits. There are 6,675 properties and 52,483 claims listed. The information for each deposit contains among other things location, name, commodity, and some indication of merit and work done. It is hoped that Volume 2 will be a reference book for Alaskan mineral deposits. The two volumes can be obtained separately. Price for Volume 1 is $1.00 and for Volume 2, $2.00

MIRL REPORT NO. 28 - "Mineral Resources of Southeastern Alaska". The report contains the following sections: Introductory material describing history, climate, plants and animals, settlements, communication, and transportation; geography and physiography; regional geology of the Cordillera; tectonic belts of the Northwest Cordillera; distribution and relations of mineral deposits to tectonic belts; regional geology of Southeastern Alaska; geologic history, and igneous intrusions. There is also a section on the mining districts of the region, with brief descriptions of the principal known deposits.

There are, in addition, three sections which form the heart of the report:

The first of these is a discussion of possible correlations of mineral deposition with geology. Eleven translucent overlay plates show the distribution of deposits of various mineral commodities. These may be laid over a geologic map for study. The second section consists of 133 pages of tables describing all of the deposits to which reference was found in the literature. The third contains a computer printout of all deposits listed on the Alaska Geological Survey Kardex system, with information on merit, development, production, and exploration. This printout is backed up by a tape, from which several optional printouts can be obtained by writing the Mineral Industry Research Laboratory.

The study which produced this report was aimed at providing basic information that will help in the exploration for ore deposits in Southeastern Alaska, and is part of a continuing study which has already covered several other areas. The report contains 334 pages, twelve plates, at a scale of 1 inch = 20 miles, and twelve figures. The price is $3.00

Alaska Geological Survey reports may be purchased or inspected at:
Maintenance Building, Univ. Alaska, Box 80007, COLLEGE, Ak. 99701
323 East Fourth Avenue, ANCHORAGE, Ak. 99501
Room 509 Goldstein Building, Pouch M. JUNEAU, Ak. 99801
Room 312, 306 Main Street, Box 2438, KETCHIKAN, Ak. 99901

U. S. Geological Survey Alaskan open-file reports usually are available as follows:
Purchase: Ak. Min. Res. Branch, 345 Middlefield Road, MENLO PARK, Calif. 94025
Inspection: Room 108, Skyline Building, 508 Second Avenue, ANCHORAGE, Ak. 99501
Room 402, Brooks Building, Univ. Alaska, COLLEGE, Ak. 99701
Room 441, Federal Building, JUNEAU, Ak. 99801
Alaska Geological Survey offices listed above

Mineral Industry Research Laboratory reports are available as follows:
Purchase: MIRL, University of Alaska, Box 95303, FAIRBANKS, Ak. 99701
Inspection: Alaska Geological Survey offices listed above

ALASKA MINING CLAIMS

Number of Claims	Creek or Area	Quadrangle	Date Notice Posted
11	Ningyoyak Creek	Ambler River	February 1972
80	Kugruk River	Bendeleben	May 1972
200	Fish Creek & Kanuti River	Bettles	April 1972
200	Bear Creek	Candle	May 1972
70	North Fork Creek	Candle	May 1972
528	Granite Mountain	Candle	May 1972
1	Bear & Birch Creek	Circle	May 1972
2	Birch Creek	Circle	June 1972
2	Homestake Creek	Circle	June 1972
10	Butte & Birch Creek	Circle	June 1972
51	Pin Peak	Craig	May & June 1972
1	O'Brien Creek	Eagle	May 1972
8	Happy New Year & Bryan Creek	Eagle	June 1972
1	Ester Dome	Fairbanks	May 1972
3	Lucky Gulch	Healy	March 1972
6	Valdez Creek bench	Healy	March 1972
8	Valdez Creek	Healy	March 1972
1	Sec. 16, T76S, R92E, CRM	Ketchikan	May 1972
9	Charlie Creek	Lake Clark	May 1972
10	Dome Creek	Livengood	April 1972
12	Ranney Hollow	Livengood	June 1972
170	Clearwater & Maclaren River	Mt. Hayes	April 1972
46	Maclaren River	Mt. Hayes	January 1972
11	Sixmile, Falls & Walker Creeks	Seward	April & May 1972
9	Canyon Creek	Seward	October 1971
6	Mills & Fresno Creek	Seward	June 1972
150	Zane Hills	Shungnak	April 1972
100	Purcell Mountain	Shungnak	April 1972
150	Hawk River	Shungnak	April 1972
3	Ruby Creek	Talkeetna	March 1972
2	Bull Run Creek	Wiseman	March 1972
4	Vermont Creek	Wiseman	May 1972

METAL MARKET

Metals	July 28, 1972	Month Ago	Year Ago
Antimony ore, stu equivalent European ore	$7.03-8.16	$7.03-8.16	$8.64-10.00
Barite (drilling mud grade per ton)	$18-22	$18-22	$17-20
Beryllium powder, 98%, per lb.	$54-66	$54-66	$54-66
Chrome ore per long ton	$24-27	$25-27	$25-27
Copper per lb	50.6¢	52.57¢	52.8¢
Gold per oz.	$64.17	$64.17	$40.93
Lead per lb.	15.5¢	15.5¢	14.0¢
Mercury per 76# flask	$200	$200	$303-312
Molybdenum conc. per lb.	$1.72	$1.72	$1.72
Nickel per lb.	$1.33	$1.33	$1.33
Platinum per oz.	$147.01	$137.25	$120-125
Silver, New York, per oz.	178.6¢	156.4¢	157.7¢
Tin per lb.	176.8¢	176.0¢	167.0¢
Titanium ore per ton (Ilmenite)	$30-35	$30-35	$30-35
Tungsten per unit	$55.00	$55.00	$55.00
Zinc per lb.	18.0¢	18.0¢	16.0¢

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FIELD INVESTIGATION
IS THE FIRST STEP IN
RESOURCE DEVELOPMENT