STATE OF ALASKA

Department of Natural Resources

Division of Geological & Geophysical Surveys

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** Mining-information office + Publications office*

Is there a truly pot of gold at the end of the rainbow?---Or just a hernia?

If that fabulous gold placer deal in Alaska you've been offered sounds to good to be true, it probably is. According to DGGS mining engineer Cleland Conwell, Alaska placer mines seem to be the source of a great number of what is known in the security business as 'shams.' Most of the financial backers who lost their money were from outside the state. Unfortunately, Conwell says, these so-called 'good deals' have hurt the financing of legitimate Alaskan mining properties.

The tax dodge

One thread common to most of the placer financial schemes is the tax dodge. True, for the large investor or operator there are some tax advantages, the major one being a 15-percent depletion allowance on gold production. But there's a catch: gold must be produced at a profit.

The tax advantage is overplayed. It is applied to both money investors and 'time' investors---men who gamble their time and labor that they can make more money by receiving shares in gold instead of currency. In other words, you not only work for a share in the profits, but you pay for the 'privilege' as you do it.

Now, there is nothing wrong with such an arrangement if all parties understand the agreement and it is equitable---but gold must be produced and the percentage shared must be fair, Conwell says, or you're going to be both sore and sorry.

The Alaskan laborer caught in such a nonpaying sham may have some protection, however. He may find, through the Wage and Hour Division of the Alaska Department of Labor, that he is entitled to payment of a minimum wage. It may not amount to much, but it's a far better deal than some ended up with---they not only worked for nothing all summer but found they owed their employer for board and room.

Another line dangled before prospective suckers is that "no taxes are due until the gold is sold" and that "we'll mine the gold now, while the price is low, and sell it later, when it's high." The first statement is true, the second one admirable. In actuality, most operations must sell their gold as it is produced to pay expenses. Only the large mining con-

cerns or the independently wealthy can withhold their gold for a tax savings or for speculation at a higher price.

'The River of Gold'

Another great gimmick is the 'new and fantastically rich deposit.' The sad truth is, most placer deposits are of very low grade. Many good operators have had profitable operations on ground that yielded but 0.01 ounce of gold per cubic yard. Most miners make a profit because of favorable conditions and because they are experienced operators.

Oh, there are probably isolated rich pockets to be found, but if a promoter is pushing a substantial deposit of over 0.08 ounces per yard or more---BEWARE. There are deposits in Alaska that were explored many years ago that have remained dormant because of wet or frozen ground, extensive overburden, or recovery problems. If these are presented, make sure you see reliable documentation---old company maps, drill reports, assays, and other factual data.

'New machines, lazy oldtimers'

Still another argument promulgated by the fast talkers is the 'the new machine' that will recover untouched fine gold that the 'oldtimers left behind.'

Despite their faults, the sluice box and jig have withstood the test of time; they are still the primary recovery systems. True, some fine gold was left behind; the sluice box has a low recovery for less than -65 mesh gold. But remember, fine gold is nearly as difficult to recover now as it ever was. Even a recovery system designed by a qualified mineral-separation engineer, using proven separation techniques, may not be economic.

The best thing to remember is that the oldtimers were thorough---they took the cream and didn't leave a whole lot behind.

Ask yourself questions first

If you are still seriously thinking about placer mining in Alaska, don't be discouraged. Some good operators make money. On the basis of a rough 'canvas' survey made by DGGS mining geologist T.K. Bundtzen and Ernie Wolff, head of the UA Mineral Industry Research Laboratory, more than 114,000 troy oz of placer gold were probably produced in Alaska during the 1981 operating season. But remember this: placer mining is mining, and mining is a tough, technical business.

So, before jumping in feet first, ask yourself a few questions: a) Can I afford to lose the investment of both time and money that is necessary to make the project pay? b) Is it a tax dodge? c) Is there a gimmick? d) Do I know the principals involved? and e) Has the security been registered with proper authorities (Securities Exchange Commission) before the sale?

But if you still hear the call and have properly investigated the proposition, perhaps you can make your fortune in placer mining in Alaska.

On the other hand, they still make trusses for suckers.

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'Western Alaska' to be topic of AGS symposium in February

About 15 speakers will discuss western Alaska geology and its resource potential at the 1982 Alaska Geological Society symposium, to be held at the Captain Cook Hotel in Anchorage next Feb. 17 and 18. The conference will feature two luncheons with guest speakers ($10 each) and a banquet ($17.50) on the evening of the 17th.

Registration fees for the symposium, which falls in the middle of Anchorage's annual Fur Rendezvous celebration, are $40 in advance, $50 at the door, and $10 for students. For details on the program, contact John Bolm, USGS, 800 A St., Anchorage 99501 (ph 271-4583).

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New claims received by DGGS rise dramatically

Mildred Brown and Carole Stevenson are pooped. The two DGGS mining-information specialists in College processed 8,484 new mining claims this quarter, a total second only to the 9,668 documents processed in the fall of 1978, when the price of gold was at a 'fever pitch.'

This year's autumnal total is substantially higher than that recorded

last year, when 5,012 new claims were recorded. It is also markedly higher than the 4,551 new claims received and plotted last quarter.

Of particular interest is the 1,030 claims recorded in the Kuskokwim district recorders office (see table below). This activity, primarily conducted by Greatland Exploration, centered in the Sleetmute Quadrangle, an area not previously known for its mineral deposits.

"This is going to be a banner year," said Brown. "Already this year, in the first 9 months, we've processed more claims than we did for all of last year." She added, "More than 6,000 claims have been received for October alone."

	July	Aug.	Sept.
Fairbanks	620	573	834
Barrow	1	0	44
Manley H. Spr.	96	4	71
Nulato	19	72	67
Mt. McKinley	159	306	727
Nenana	4	6	57
Rampart	2	7	27
Ft. Gibbon	0	0	45
Kotzebue	20	0	264
Talkeetna	102	129	322
Palmer	20	29	40
Nome	9	570	0
Seward	76	0	103
Juneau	55	571	10
Haines	17	46	12
Petersburg	0	17	0
Ketchikan	0	30	59
Anchorage	73	583	221
Iliamna	0	10	0
Aleutian Is.	0	4	0
Seldovia	0	64	0
Cordova	9	8	0
Chitina	I	0	23
Glenallen	1	0	0
Bethel	0	0	9
Kuskokwim	48	1,030	146
Homer	0	12	0
Totals	1,332	4,071	3,081

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DGGS publishes nine open files, Cook Inlet bibliography

DGGS had a busy quarter on the publishing scene. A bibliography on the Cook Inlet area, nine new open-file reports, and three revised information circulars were released.

The bibliography, a 33-page booklet compiled by Karen S. Emmel and Patti L. Coonrod, is a collection of geological entries from recent literature covering the Cook Inlet area between 59° and 61° north latitude. The bibliography emphasizes petroleum-based material, but subjects referenced include geophysics, stratigraphy, paleontology, and articles from the petroleum trade journals. It sells for $1.

The focus of the open-file reports primarily centers on two areas, the Brooks Range and the Fairbanks mining district. Four gravity studies from various parts of the state were also printed this quarter.

DGGS mining geologist John Dillon, principal author of the Brooks Range open-file reports, said, "They've been a long time in the making. It's good to know that they are finally seeing the light of day." Two of the reports are lengthy geochemical summaries. They are:

.AOF-133A, 'Geochemical reconnaissance of the southwest Wiseman Quadrangle: Summary of data on pan-concentrate and stream-sediment samples,' by J.T. Dillon, J.B. Cathrall, and M.A. Moorman. This report, produced in cooperation with the U.S. Geological Survey, presents the analyses of 647 stream-sediment and 156 pan-concentrate samples. The samples were collected by DGGS during the 1977-79 field seasons and analyzed by the U.S. Geological Survey. Most of the 176-page text is taken up by tabular data. The report, which includes a 1:125,000-scale blackline geochemical location plate, costs $8.

.AOF-133B, 'Geochemical reconnaissance of the southwest Wiseman Quadrangle: Summary of data on rock samples,' by J.T. Dillon, M.A. Moorman, and Larry Lueck. This 164-page report, which also has a 1:125,000-scale blackline geochemical location plate, has extensive tables on the analysis of 536 rock samples. AOF-133B costs $8.

The other open-file report on the Brooks Range, AOF-124, 'Geologic map of the Wiseman A-4 Quadrangle, Alaska,' by J.T. Dillon, G.H. Pessel, Larry Lueck, and W.B. Hamilton, is a continuation in the series that started earlier this summer with the publication of AOF-119, which covered the Wiseman A-3 Quadrangle. AOF-124 consists of one

1:63,360-scale blackline map and costs $1.

Two new open files cover the Fairbanks mining district. One, AOF-145, should prove popular with the miners of the interior. It is a set of five blackline maps that form a mosaic of the mining-claim status of the Fairbanks mining district. The AOF depicts the status of state mining claims and of federal patented and unpatented claims located before 1981. AOF-145 is part of a larger study, 'Mineral resource appraisal of the interior Alaska mining districts,' a cooperative effort conducted by DGGS and the UA Mineral Industry Research Laboratory.

Sources of the report, compiled by Larry Lueck and J.E. Sperber, are the DGGS mining-information files, the state Division of Forest, Land, and Water Management, the BLM, the Fairbanks North Star Borough, and the Fairbanks district recorders office. The five-sheet set of blackline maps costs $6.50.

The other open-file report covering the Fairbanks mining district is AOF-137, 'Surface geology and ground magnetics of the Yellow Pup tungsten deposit, Fairbanks mining district, Alaska' by M.S. Robinson. The one-sheet map costs $1.

Four of former DGGS geophysicist Steve Hackett's gravity surveys are now available. The open-file reports, which are primarily computer printouts of gravity-site readings from selected areas, are:

.AOF-135, 'Tabulated gravity field data for Yukon Flats and Norton Sound coastal areas, western Alaska,' by S.W. Hackett (7 p.). The AOF costs $1.

.AOF-136, 'Tabulated gravity field data, Alaska Peninsula area, Alaska,' by S.W. Hackett (20 p.), $1.

.AOF-138, 'Tabulated gravity field data, north flank of Alaska Range, Alaska,' by S.W. Hackett (6 p.), $1.

.AOF-139, 'Tabulated gravity field data, Cook Inlet, south-central Alaska,' by S.W. Hackett (15 p.), $1.

Three information circulars were revised this quarter: IC-16, 'Alaska map information' (3 p.); IC-11, 'List of DGGS publications' (47 p.); and IC-25, 'Information on water and water rights in Alaska' (6 p.). All are free.

All these publications may be inspected at any of the four DGGS information offices located throughout the state (p. 1).

In other publications news, three DGGS staffers had papers published in the UA Mineral Industry Research Laboratory's compilation of the second annual Conference on Alaska Placer Placer Mining, 'Focus on gold.' Mark Robinson's presentation, 'Classification of placer deposits,' was the first paper given at the April 1980 conference, held at the UA-Fairbanks campus. Immediately following on the agenda was fellow geologist Tom Bundtzen, who gave a talk entitled 'Geological guides to heavy-mineral placers.' The third DGGS author in the report was mining engineer Cleland Conwell, whose presentation, 'Gold recovery from placer concentrates by cyanidation,' was delivered the next day. The three papers are contained in MIRL Report 46, which is available from the Mineral Industry Research Laboratory, University of Alaska, Fairbanks 99701.

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UA begins annual extension courses in prospecting

Jim Madonna and Leo Mark-Anthony have packed their bags and started living out of them. The two itinerant instructors in basic mining and prospecting techniques travel the state from September till mid-May, teaching basic and geochemical prospecting, ore identification, rockhounding and the like in free, noncredit extension courses offered by the University of Alaska each year.

The only fee involved, according to Madonna, is "about $15" for books and supplies. The classes are taught evenings, and run 2 to 3 hours each. For further information, contact Charlene Winner at the UA School of Mineral Industry, Fairbanks 99701 (ph 479-7366) or Mark-Anthony, 2020 Lake Otis Pkwy, Anchorage 99504 (ph 279-4702). The schedule for the rest of the year is shown on page 5.

In a related note, Madonna says that his revised handbook, 'A guide for the Alaskan prospector,' is hot off the press and has two new chapters. The paperback booklet can be purchased for $6 at his Alaskan Prospecting and Geologists Supply stores in Anchorage (4409 Spenard Road, 99503) or Fairbanks

(504 College Road 99701). The former location, he wryly noted, is "conveniently situated in beautiful downtown Spenard, between the Magic Carpet Ride and the Aloha massage parlors."

Location	[illegible]	Date
Instructor - Leo Mark-Anthony		
Anchorage	Rock Identification	November 2 - November 20
Elmendorf	Basic Prospecting	November 23 - December 18
Homer	Basic Prospecting	January 4 - January 29
Soldotna	Basic Prospecting	February 1 - February 26
Talkeetna	Basic Prospecting	March 1 - March 26
Anchorage	Basic Prospecting	March 29 - April 23
Anchorage	Ore Deposits	April 26 - May 7
Anchorage	Environmental Factors	May 10 - May 14
Instructor - James Madonna		
Fairbanks	Basic Prospecting	October 26 - November 20
Fairbanks	Ore Deposits	November 23 - December 11
Juneau	Basic Prospecting	January 4 - January 29
Nome	Basic Prospecting	February 1 - February 26
Tok	Basic Prospecting	March 1 - March 26
Ft. Wainwright	Rocks and Minerals	March 29 - April 16
Fairbanks	Basic Prospecting	April 19 - May 14

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Barnwell named DGGS Deputy State Geologist

William W. (Bill) Barnwell, former assistant to the Director of the U.S. Geological Survey, was named Deputy State Geologist by DGGS Director Ross Schaff in late October. Barnwell, who started work in early November, joined five other new employees in the Anchorage office. The group includes a petroleum geologist, a computer specialist, and a cartographer.

Barnwell, who had been with the USGS for 16 years, will be concerned primarily with the hydrology, petroleum, hazards, surficial geology, and publications aspects of the DGGS operation. The personable earth scientist, who first came to Alaska with SoCal Oil in 1958, has a B.A. from Harvard and an M.A. in geology from the University of Wyoming. Bill and his wife, Audrey, have four children and one boat, a 30-footer that they keep in Seward.

The petroleum geologist is an old hand in the oil and gas business. C.G. ('Gil') Mull comes to DGGS with a varied career, having spent 14 years in industry (Richfield, Exxon) and 6 years with the USGS, mostly in Alaska. He is working on regional structural-stratigraphic studies and hydrocarbon potential, mostly on the Arctic Slope and Brooks Range. Gil has a B.S. and an M.S. from the University of Colorado.

Richard D. Wallace is the new (and only) DGGS operations research analyst. Wallace, who is coordinating and managing the DGGS data-processing activities, has a B.S. from Southern Illinois University, he has been in the DP business for about 20 years and came to DGGS from Boeing Computer in Anchorage. Dick is married and has four children.

Ralph Ahgupuk is also new to the Anchorage fold. The new cartographer came to DGGS from the BLM in Anchorage, where he was a drafting technician for 5 years. Ralph replaces Garth Olsen, who returned to the BLM in August.

In the DGGS Eagle River facility is new geological assistant Edmund J. (Ed) Collazzi, who works in the hydrology section. A bachelor, Ed came to DGGS from Northern Pacific Aerial Surveys in Anchorage.

In Fairbanks there is a newcomer too, but there is a nepotism problem involved. On September 26, a 6-lb 9 oz daughter was born to Wyatt and Joan Gilbert. So far, young Claire Morgan shows no qualms about registering her grievances with the Deputy State Geologist.

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"The streak of a rock is the color shown when scraped with a pet."--Geological Howlers.

DGGSer studies salary scale of geologists

DGGS mining geologist John Dillon made a survey of salary ranges of geologists working in Alaska. He compiled replies to questionnaires he had sent to Alaska-based geologic firms, 'Outside' companies (which he adjusted for cost-of-living differences), and government agencies.

In the questionnaire, Dillon selected positions and associated qualifications and responsibilities to conform in part to nationwide salary surveys and to current state and industry standards. Forty-three Alaska-based mining, petroleum, consulting, and engineering firms were contacted in February and asked to supply information on wages paid to their geologists; UA and the USGS were also contacted. The latter two and 12 of the 43 firms contacted responded.

The results indicate that lead geologists and above in the employ of the state of Alaska are paid significantly less than their colleagues working in industry (table 1). The overall wage scale is shown in table 2.

Table 1. Summary of wages paid to geoscientists who live and work in Alaska

Position	Qualifications and responsibilities	Geologist Respondents	Geologist Avg mo. wage	Geologist Benefits[1]	Geophysicist Respondents	Geophysicist Avg mo. wage	Geophysicist Benefits
Beginning field assistant	Beginning, seasonal, field geoscientist with some training in geosciences (no degree required); duties mainly involve camp operations.	10	Range	1000-1600	105-600		
		10	Overall avg	1370	321		
		7	Industry	1350	341		
		3	Govt.[3]	1419	257		
		1	State[4]	1660	448		
Experienced field assistant	Seasonal field geoscientist with 2 or more seasons field experience[2] and college training[2]; duties mainly geologic.	10	Range	1300-1900	145-644		
		10	Overall avg	1672	374		
		7	Industry	1657	398		
		3	Govt.[3]	1706	316		
		1	State[4]	1870	505		
Beginning geoscientist	Permanent, nonsupervisory, entry-level geoscientist with BS or BA; works on geologic projects of various types, usually under direction of lead geoscientist.	10	Range	1700-2538	50-829	4	1900-3135	399-900
		10	Overall avg	2004	462	4	2296	668
		8	Industry	2018	460	2	2645	865
		2	Govt.[3]	1948	470	2	1948	470
		1	State[4]	1995	539	1	1995	539
Working geoscientist	Permanent geoscientist with MS (or Bachelors plus 2 yr experience); may be assigned supervisory and project mgmt responsibility.	13	Range	1889-3325	100-1000	6	1889-3350	464-990
		13	Overall avg	2494	614	6	2562	707
		8	Industry	2558	584	3	2974	881
		3	Govt.[3]	2151	521	3	2151	521
		1	State[4]	2455	663	1	2455	663
Lead geoscientist	Permanent research geoscientist with PhD (or MS plus 2 yr experience or Bachelors degree plus 5 yr experience); usually assigned supervisory and project mgmt responsibility for his projects.	12	Range	2200-3742	350-3000	6	2300-3726	608-1734
		12	Overall avg	3101	864	6	3261	879
		9	Industry	3128	992	3	3500	1055
		3	Govt.[3]	3021	680	3	3022	736
		1	State[4]	3039	820	1	3039	820
Senior geoscientist	Permanent senior research geoscientist with Masters or PhD plus 7 yr experience, including either well-established reputation as a research expert or 3 or more yr supervisory and management experience; may assume specialized scientific duties or supervisory responsibility for 4 or more lead and working geologists and coordinate their projects.	14	Range	2740-6234	150-3000	8	2740-5988	685-1734
		14	Overall avg	3956	1126	8	4093	1151
		11	Industry	4056	1195	5	4413	1212
		3	Govt.[3]	3595	876	3	3561	1050
		1	State[4]	3494	943	1	3494	943
Chief geoscientist	Qualifications same as senior geoscientist; employee may be a "superstar" research geoscientist (regional exploration geologist, consulting specialist, or may have overall management responsibilities for a region).	13	Range	3500-8200	150-3000	6	4022-7669	804-2700
		13	Overall avg	5101	1512	6	5667	1614
		10	Industry	5086	1477	3	6712	2122
		3	Govt.[3]	4623	1129	3	4623	1105
		1	State[4]	4022	1086	1	4022	1086
Executive vice-president	Vice-president of geoscience firm.	4	Range	4022-6033	804-1500			
		4	Overall avg	5264	1335			
		1	Industry	6000	1500			
		3	Govt.[3]	5018	1279			
		1	State[4]	4022	1086			

1. Approximate dollar value. 2. Experience, training, and education requirements assumed to be in field of geosciences related to position. 3. Federal and State Geological Surveys and University of Alaska. 4. Anchorage base for DNR, does not include UA.

Table 2. Adjusted results of wage studies, geoscientists in U.S., including Alaska.

Position	Qualifications and responsibilities	Source[2]	Geologist Wages	Geologist Benefits[1]	Geophysicist Source[2]	Geophysicist Wages	Geophysicist Benefits
Beginning field assistant	See table 1.	B	1128	67.65			
		D	1613	97			
Experienced field assistant	See table 1.	B	1312	79			
		D	1876	113			
Beginning geoscientist	Permanent nonsupervisor beginning geoscientist with BS or BA.	A	1700 ± 400	170			
		B	1355	87	B	1355	
		C	1685	- -	C	1685	- -
		D	2340	180	D	2294	116
Working geoscientist	Permanent geoscientist with a MS (or with Bachelors plus 2 yr experience; may be assigned supervisory responsibility in rare instances.	A	2174	400	A	2333 ± 600	250
		B	1554	93	B	1554	93
		C	- -	- -			
		D	2666	352	D	2779	245
Lead geoscientist	Permanent research geoscientist with a PhD (or MS plus 2 yr experience or Bachelors plus 5 yr experience; employee may be assigned supervisory and project mgmt responsibility.	A	3000 ± 800	450			
		B	1787	107	B	2031	127
		C	2484	- -			
		D	3584	398	D	2904	182
Senior geoscientist	See table 1.	A	3800 ± 800	500	A	4400 ± 700	900
		B	2852	171	B	3170	630
		C	2690	- -			
		D	4581	480	D	5413	1094
Chief geoscientist	See table 1.	A	4750 ± 1400	1200			
		B	3280	750	B	3780	750
		C	3624	- -			
		D	5728	1394	D	5405	1073
Executive	Vice president of a geoscience firm.	A	6250 ± 2000	2500			
		B	3750	602			
		D	7157	2218			

[1]Approximate dollar value. [2]Source studies: A.-Oil and Gas Journal (Dec. 1980); B.-Dietrich and Associates, 1980; C.-Scientific Manpower Commission, 1979; D.-Average this table adjusted to Alaska 1981.

Alaska Miners Ass'n Conference well attended--More than 700 register

The Alaska Miners Association's sixth annual conference was, in the words of one attendee, "a huge success." More than 700 miners, students, and representatives of industry and government descended on the Captain Cook Hotel in Anchorage to attend the annual meeting.

The theme of the October 23-24 conference was strategic minerals in Alaska. In the opening session, Perry Pendley, deputy assistant secretary for energy and minerals for the Department of Energy, discussed the Reagan Administration's position on the development of strategic mineral resources.

DNR Commissioner John Katz presented his views on the issues affecting the mining industry in Alaska today and in the foreseeable future. State Geologist Ross Schaff briefly summarized the DGGS Resource Evaluation and Mapping program.

The rest of the first day was devoted to the why's and where's of strategic minerals. Papers were presented on various mineral deposits in the state---tin granites on the Seward Peninsula, chromite deposits on the Kenai Peninsula, the Yakobi Island and Brady Glacier copper-nickel deposits, the Lost River tin lode, and the podiform chromite deposits of central Alaska.

The second day's presentations were devoted to new search techniques used in locating strategic minerals and to the financial aspects of placer mining.

The conference included a surprising number of attendees from Outside. John Sims, director of the Office of Mineral Development of the Alaska Department of Commerce and Economic Development, said, "Quite a few people in the lower-48 have their ears to the ground on what's happening up here."

Three DGGS staff members had a hand in presenting papers (see following article).

DGGS presents papers at AMA meeting

Three papers were presented by the DGGS staff at the Alaska Miners Association annual meeting in late October. The first, on the Grant Gold Mine, an underground working near Fairbanks, was coauthored by DGGS geologist Tom Bundtzen and Wayne Murton, of Tri-Con, Inc., the mine developer. Abstracts of the presentations follow.

GEOLOGICAL & PRODUCTION ASPECTS OF THE GRANT GOLD MINE FAIRBANKS DISTRICT, ALASKA

By Wayne Murton and T.K. Bundtzen

The current development and production program at the Grant Mine began in the spring of 1979. Earlier work was intermittent since the 1920's; about 6,000 tons of selected ore had been mined and custom milled before 1950.

There are two known shear zones with veins in the mine---the Irishman and the O'Dea, which dip steeply and cross-cut relatively flat-lying polymetamorphic schist and quartzite of undetermined age.

The underground workings consist of over 3,000 ft of drifts, crosscuts, and raises on the 100-, 150-, and 200-ft levels of the Irishman system and on the 80-, 120-, and 200-ft levels of the O'Dea breccia zone.

The two ore zones contain at least three ages of vein-quartz and late-stage silica injection; these were accompanied by free gold, arsenopyrite, lead-antimony sulfosalts, and (rarely) scheelite and cinnabar. Ore fluids were emplaced along fault zones trending sinuously N. 20°-55° E. and dipping from 45°-90° to the SE.

Underground exploration and development has shown the Irishman vein system to be over 400 ft long and open both to the south and at depth; the O'Dea system extends over 900 ft in the same direction. The NE end of both ore zones is cut by a N-NW-striking joint-fault system.

The nature of movement along this crosscutting fault is not understood. Vein widths vary from 3 to 22 in. on the Irishman, with grades averaging about 1 oz/ton, and from 6 in. to over 6 ft on the O'Dea vein, with one 300-ft section averaging 1.60 oz/ton over a 3.3-ft width.

Surface exploration has consisted of EM-16 geophysics. The 50 ft of loess overburden at the mine have prevented successful geochemical sampling. However, recent rotary reverse-circulation drilling has been used successfully.

A gravity mill for testing was installed in July 1980 and began operating at about 5 tpd. The mine and mill have since been in continuous production. The mill now treats 1.5 to 2 tph and operates 24 hr a day.

ALASKAN STRATEGIC MINERALS---AN OVERVIEW

By T.K. Bundtzen

Since the turn of the century, Alaska has contributed significant amounts of so called 'strategic' and 'critical' minerals to U.S. domestic production. During four wars and times of commodity shortages, Alaska's contribution included tin, tungsten, platinum-group metals, antimony, mercury, chromium, and minor amounts of asbestos. In some cases, particularly during World War II and the Korean War, price supports and subsidized exploration efforts were provided by the federal government and dropped when either strategic stockpiles were accumulated or the demand for the minerals slowed. Minor amounts of tungsten and platinum are presently produced in Alaska and major mining companies are evaluating strategic mineral deposits statewide. Nationally significant reserves of tin, fluorite, cobalt, nickel, asbestos, and platinum metals can be found throughout the 49th State. By-product reserves of cobalt and platinum have been recently recognized in Alaskan copper-nickel deposits, partly as a result of reinterpreting past drilling programs.

A major asbestos deposit is being developed by the Native corporation Doyon, Inc. The U.S. Bureau of Mines has begun an aggressive program to assess Alaska's strategic mineral potential, particularly cobalt, chromium, and the platinum metals.

FAIRBANKS MINING DISTRICT IN 1981: NEW LOOK AT AN OLD MINERAL PROVINCE

By T.E. Smith, M.S. Robinson, T.K. Bundtzen, and P.A. Metz*

At the request of the Fairbanks North Star Borough, both the University of Alaska and DGGS began a mineral investigation aimed at producing data useful in stimulating local mineral development and exploration. The Fairbanks district, which has accounted for about 25 percent of Alaska's gold production, also provided significant amounts of antimony, tungsten, building stone, and aggregate.

The new studies include 1:24,000-scale geologic mapping, drainage and rock-chip geochemical surveys, and detailed studies of selected prospects and mines.

Bedrock exposed in the district comprises three metamorphosed stratigraphic packages, which appear to be in fault contact. The lowermost sequence, referred to as the Fairbanks Schist, consists dominantly of quartzite and micaceous schist with local variants containing garnet, biotite, and chlorite. Interbedded near the center of the Fairbanks Schist is a 400-ft-thick sequence of interlensing felsic schist, white quartzite, greenschist, graphitic schist, minor mafic flows and rhyolite, calc-silicate beds, gray marble, and significant amounts of quartzite and mica-quartz schist indistinguishable from the Fairbanks Schist host rocks. This group of rocks, referred to as the Cleary Sequence, appears to be largely of distal volcanogenic origin and contains most of the lode-mineral occurrences in the district; it is also exposed upstream from most important placer deposits.

Structurally above the Fairbanks Schist - Cleary Sequence is an interval of variable thickness containing amphibolite, marble, coarse-grained garnet-muscovite schist, biotite schist, calc-schist, and greenish chert.

Metamorphic rocks occurring along the northern part of the district also overlie the Fairbanks Schist in presumed thrust-fault contact, but consist of a different rock assemblage, including garnet-clinopyroxene rocks, garnet amphibolites, black quartzite, and pelitic schist thought to have formed at higher pressures than the other rocks exposed in the district.

Intrusive rocks in the district occur mainly as northeasterly-trending bodies of a) dark, homogeneous granodiorite exposed near Pedro Dome, and b) light-colored, coarse-grained porphyritic quartz monzonite-granodiorite present mainly on Gilmore Dome. Numerous small plutons of felsic to intermediate composition occur throughout the district. Crosscutting relationships show the porphyritic quartz monzonite-granodiorite is younger than the hornblende-bearing granodiorite. Available radiometric ages for the Pedro Dome stock range from 91 to 93 m.y.

Structural development of the Fairbanks region was dominated by two folding episodes. The first resulted in isoclinal northeast-verging folds with wavelengths to about 1,000 ft and northwest-trending axes. The second episode folded the previously metamorphosed units into a series of broad northeast-trending open folds which control the distribution of rock types now exposed in the district. Local structures include small-scale folds, faults, joints, shears, and 'crush zones.' These zones typically cluster in NS- and EW-trending subparallel sets up to 1 mile long. Both sets of fractures have a close spatial and genetic relationship to vein deposits of gold, antimony, and arsenic in the district.

*Authorship order by lottery.

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Fourth International Conference on Permafrost to meet in Alaska in 1983

Since World War II, the serious impact of permafrost or perennially frozen ground on development in northern and high-altitude regions has become widely appreciated. Effective construction of airfields, roads, railroads, urban areas, and oil- and gas-pipeline systems requires extensive knowledge of the distribution, properties, and engineering performance of perennially frozen materials.

About 20 years ago it became apparent that scientists and engineers working with permafrost needed to periodically exchange information at the international level. The First International Conference on Permafrost

was held in the United States at Purdue University in 1963. This relatively small conference was extremely successful and yielded a publication which is still consulted throughout the world. In 1973 the Second International Conference on Permafrost was convened in Yakutsk, Siberia, where 400 attendees (mostly Westerners) got to see firsthand the vast amount of work accomplished by the Soviets in the science and engineering of permafrost. In 1978 Canada hosted the Third International Conference on Permafrost in Edmonton, Alberta, with field trips to northern Canada. About 800 individuals from nine nations attended. In Edmonton it was decided that the U.S. would host the Fourth International on Permafrost and a formal invitation was extended to hold the next Conference on the Fairbanks campus of the University of Alaska.

Conference Program

The technical program of the Fourth International Conference on Permafrost, which will meet July 18-22, 1983, will consist of two parts: a) reviews of six themes identified as being particularly timely, and b) presentations of contributed papers. The reviews will be presented as panel discussions among invited experts in the following topics: pipeline construction, climatic change and geothermal regime, deep foundations and embankments, permafrost terrain and environmental protection, frost heave and ice segregation, and subsea permafrost.

Papers written in English on all aspects of permafrost science and engineering are welcome. Extended abstracts are due for review by October 1, 1982, and will be published in a separate volume, which will be available at the Conference. Papers for conference presentation are due on March 1, 1983, and will be reviewed prior to publication in a proceedings volume or perhaps volumes.

A popular aspect of past Conferences has been field trips during which attendees have the opportunity to observe phenomena that are discussed at the sessions. The main reason for hosting the Fourth Conference in Fairbanks is the ready availability of many outstanding examples of permafrost features and problems related to perennially frozen ground. During the week of the technical sessions, three half-days are set aside for field trips in the Fairbanks area. Both the geological and engineering aspects of permafrost will be emphasized, including pipeline test sites, segments of the Trans-Alaska Pipeline System, a tunnel in ice-rich permafrost, water systems, utilidors, sewage-treatment works, sections of roadways impacted by permafrost, and other permafrost features such as open-system pingos, a collapsed pingo, thermokarst mounds and pits, erosional gullies, and various types of ground ice. Special attention will be given to Quaternary stratigraphy and relationships between permafrost and vegetation.

Before the formal conference three field excursions are planned: a) Alaska Railroad and Mt. McKinley National Park; b) Fairbanks to Prudhoe Bay via the Dalton Highway, and c) Prudhoe Bay and vicinity. After the formal sessions six field trips are being arranged: a) Alaska Railroad and Mt. McKinley National Park, b) Prudhoe Bay, c) northern Yukon Territory and Mackenzie River Delta, d) Fairbanks to Anchorage via Copper River Basin, e) Prudhoe Bay and Beaufort Sea Coast, and f) Prudhoe Bay and Colville River Delta. Prior to the conference, DGGS will publish illustrated guidebooks for all field trips.

Registration

Registration forms will be mailed during the summer of 1982 to individuals expressing an interest in the Conference by writing to:

Polar Research
National Academy of Science
2101 Constitutional Avenue, N.W.
Washington, D.C. 20418

Participants can either preregister at a reduced cost of about $175 before January 1, 1983, or pay about $225 after that date. Bona fide students, guests of participants, and single-day registrants can register at reduced rates of $25 to $50. Payment of the full registration fee (or about $175 prior to January 1, 1983) entitles participants to attend all sessions and official functions, receive a program for the meeting, and receive all publi-

cations, including the volume or extended abstracts and the volume(s) of final papers and discussions. There will be no charge for refreshments served during the sessions or for the local field trips.

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DGGS Anchorage mining-info office, DMEM move

The DGGS Anchorage mining-information office has come full cycle. On September 1, it moved again---back to where it started from 4 years ago, the MacKay Building Annex, at 323 E. 4th. The move, according to mining specialist Bob Stuvek, was "pretty hectic."

The relocation is part of an overall plan to centrally locate as many DNR Anchorage agencies as possible. The Division of Technical Services also returned to the MacKay Building Annex; the Division of Minerals and Energy Management, which had been on Northern Lights Blvd, moved into the Cordova Building, at 555 Cordova St, as did some of the Division of Forest, Land, and Water Management personnel who had been in an office on Dowling Road.

The above agencies will share the same mailing address, Pouch 7-005, Anchorage 99510. The phone number of the DGGS mining information office is 279-5577.

Most of the DGGS offices in College are also preparing for a move. In late-November, the DGGS staff will begin moving to the second floor of the Alaska National Bank of the North Building, located on Geist Road and University Avenue. The office staff now in the UA O'Neill Building will move first, followed by the mining-information and publications staffs, which are located in the UA Physical Plant. The DGGS assay lab will remain in the O'Neill Building. The mailing address will remain the same. New phone numbers were not available at press time.

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"Rhyolite is an extrusive rock formed in igneous intrusions. It is sometimes coarse and sometimes fine in grain. It is often light colored though it may be dark. It is basic sometimes, but more usually though not often it is acid. It is a common constituent of sedimentary rocks."--Geological Howlers

36,000-year-old bison 'comes to life'

(from Fairbanks Daily News-miner, Aug. 26, 1981)

On a winter day in Interior Alaska some 36,000 years ago, a nine-year-old bull bison with 40-inch horns was attacked from the rear by lions, paleontologist Dale Guthrie believes.

In early spring the partially scavenged remains were quickly buried by thick mud, creating a natural deep freeze which lasted until July 1979, when Walter and Ruth Roman of the Lucky Seven Mining Co. uncovered the bison at their gold mine north of Fairbanks.

"Red meat in the mud," Guthrie said Tuesday as he showed slides at the 32nd Alaska Science Conference of what the bison looked like when it was discovered. "It is really a dramatic thing to all of a sudden fall into your lap, to see this coming out---an animal that no longer exists with black hair, wool and fat."

Under the direction of Guthrie, a vertebrate paleontologist, the bison was excavated in two weeks and taken to a freezer at the University of Alaska for storage. There has been an ongoing scientific investigation which will conclude in a published report and a display at the University of Alaska Museum about the oldest mummified bison ever found.

The study won't be complete until later this year, Guthrie told the audience in the auditorium of the Brooks Building. But he said a lion attack was probably responsible for the bison's death at a site which would eventually become Pearl Creek. Lions were the most common large predator in Alaska 36,000 years ago, he said.

He said there is evidence that a heavy mud flow covered the bison in the early spring, saving it from destruction. Most mummies are preserved because they were buried quickly, he said.

The University of Alaska scientist said there were claw marks on the rear of the bison, which appear to be from lions like those found today in Africa. The bison was scavenged from the top, which is unusual, Guthrie said, but most of the carcass remained intact.

The muscles were close to original form and although it smelled a lot, he tried eating a bit of the preserved meat. He said it tasted something like

jerky.

Guthrie said the find, made possible by the cold ground in the North, is important because normally all that's left of prehistoric animals are skeletons. "One of the things we haven't had is material to reconstruct what the soft parts look like," he said.

Guthrie believes that an arc extending from Alaska to Asia and Europe was once a dry grassland unlike anything found in the North today. Bison, wooly mammoth, horses, camels, taiga antelope, and lions once roamed the territory, as evidenced by occasional fossil discoveries.

The bison is a member of the same species which occurs in cave paintings in France and Spain and it was common all across Europe and Alaska during the Ice Age. Its horns are bigger than modern bison and it had two shoulder humps. Such bison were hunted by the early people who came to Alaska from Siberia.

The bison, which was donated to the school by the Romans and the Alaska Gold Co., was determined to be 36,000 years old by carbon dating.

⚒

Sohio begins exploration program off Alaska's west coast

(from Alaska Industry, Sept. 1981)

Sohio Alaska Petroleum Company has begun seismic testing in preparation for a proposed November 1982 federal lease sale. The Outer Continental Shelf Sale will offer 429 tracts comprising 2.4 million acres in Norton Basin, off Alaska's western coast.

Before freeze-up this year, seismic survey work will also be completed in the Beaufort Sea, to the west of Prudhoe Bay. A sale is scheduled there for September 1982. The sales are only two of 16 offshore lease sales to be held in Alaska from 1982 to mid-1986 under the five-year OCS leasing schedule.

Under contract to Sohio, Geophysical Services, Inc. is conducting the surveys from the 134-foot vessel 'Krystal Sea,' which sailed from Homer in mid-July.

According to Exploration Supervisor Bruce Clardy, preliminary geologic data from the Norton Basin indicates the area has good prospects. "It's a Tertiary-aged (65 million years to present) block-faulted basin," he said. "Basins similar to this have been productive elsewhere, namely, Cook Inlet, offshore California and the Gulf of Mexico."

Clardy mentioned that gas seeps containing gasoline-range hydrocarbons have been detected in the area---another promising indicator. "The basin doesn't extend onshore," says Clardy, "so this will be our first opportunity to see what's out there."

To date, Sohio has drilled 12 exploration wells offshore in the Beaufort Sea, some of which have shown the potential for hydrocarbons in commercial quantities.

According to the company's exploration manager Roger Herrera, Sohio plans to drill five offshore exploration wells in Alaska this coming winter. Three will be offshore in the Beaufort Sea and two onshore, the Colville River delta---about 50 miles west of Prudhoe---and the other near Oliktok Point, about 35 miles northwest of Prudhoe.

"If we bid successfully during the proposed five-year OCS program," says Herrera, "our exploration program in Alaska will probably triple within that time period."

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Scientists say Alaskan peak could erupt

(from Anchorage Times, July 30, 1981)

Scientists say they are concerned that increased thermal activity beneath Mount Wrangell could one day lead to an eruption of the 14,163-foot volcano in south-central Alaska.

"Mount Wrangell is one of the largest active volcanos on the Pacific Rim, and it's potentially explosive, just like Mount St. Helens," said Christopher Noah, executive director of the Alaska Council on Science and Technology, which has alloted $87,500 for studies of the mountains. The research will be conducted by the Geophysical Institute of the University of Alaska, Fairbanks.

Noah said there is increased thermal activity beneath Mount Wrangell. It is 100 miles northeast of Valdez, just north of the Alaska Panhandle.

"We're concerned about the increased heat flux (flow) and its potential to melt the surrounding ice

to flood and avalanche proportions," he said. Residents of the Copper River Valley, along the east side of the mountain, have reported increased volcanic activity.

Dr. Carl Benson, the Geophysical Institute's principal investigator for the Mount Wrangell project, said there has been a threefold increase in heat from the mountain since an earthquake occurred in the Mount St. Elias area in 1979. Mount St. Elias is 120 miles southeast of Wrangell. The quake measured 7.5 on the Richter scale.

Mount Wrangell has not erupted in recorded history. However, a crater more than 8 miles in diameter is evidence of an active volcanic past.

Benson said that despite the recent thermal and seismic activity, there was no telling what would happen on the mountain in the future. "We are not predicting an eruption. But this is a big, hot system and it is changing. You can't walk away from that. What is needed is a very careful watch."

He said the heat energy from Mount Wrangell's summit area is 200 to 500 megawatts. The heat flow from the north crater alone is 10 times that emanating from Mount Baker in Washington state, another potentially dangerous volcano. ⚒

DEC works with miners to prevent pollution

(from 1981 Environmental Report of Alaska Dept. of Environmental Conservation)

Since mining operations ceased about 40 years ago, the Chatanika River near Fairbanks has run clear and cold, attacting large numbers of boaters and fishermen.

When gold and other precious metal prices soared in the late 1970s, however, five placer mining operations started up again at the headwaters of the Chatanika. Discharges of muddy water directly into the river from four of the five mines left the Chatanika unusable for sport fishing for 100 miles downstream in the summer of 1980.

By last August, however, the discharge problem---and the river---had been largely cleaned up.

Field officers of the Department of Environmental Conservation provided technical assistance to miners who built 18 sediment ponds at four of the five mines. The fifth mine was designed to operate without a discharge to the river. The result was a reduction of more than 95 percent in the amount of mud entering the river, plus the return of canoeists and fly fishermen.

By itself, the Chatanika was only one of the more dramatic cases of mining-related conflicts facing the state last year. From the Tolovana River---where Minto village fishermen and trappers have subsisted for years---to the 40-Mile-River---now a Wild and Scenic River under federal law---more than 300 placer mines using heavy equipment were in operation.

In fact, 57 percent of all complaints lodged with DEC officials in Fairbanks last year were related to placer mining.

"The placer mining industry is no longer simply a family operation," says Jerry Brossia, from DEC's Fairbanks office. Jerry has watched the number of active mines in his region increase by about 300 percent in the last five years.

"Companies like Asamera Oil, St. Joe Mineral, Placid Oil, WGM, Alaska Gold and U.S. Smelting are becoming interested in placer gold operations. It is a fact that a single large company such as Asamera Oil can sluice 3,000 to 4,000 (cubic) yards of material per day," Brossia observes. "A well organized family operation may move 1,000 to 1,500 yards per day."

To help miners reduce sedimentation, Brossia and his colleagues are directing a settling-pond demonstration project, looking at the best ways to remove from water the sediment that results from sluicing gravel. Information gleaned from this and other studies should help the state---as well as the miners---in making this historic industry compatible with other water uses.

Last year, two DEC field officers working on placer mining traveled to 38 of the 300 placer mines operating in the Fairbanks region, and made 77 inspections at these mines, providing technical assistance to build 51 sediment ponds, including the 18 at the headwaters of the Chatanika.

In addition to the settling-pond demonstration project and technical assistance provided to miners to con-

struct settling ponds, Environmental Conservation participated with the departments of Natural Resources, Revenue, and Fish and Game to create a single state application form for placer miners. The application, which recently won a national award for form design, covers most state permits required for the average placer-mining operation.

Within the next decade, many experts predict, Alaska also will see a large increase in the hard-rock mining industry, such as the planned molybdenum mine of U.S. Borax near Ketchikan.

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Oil rigs ready for Beaufort drilling season

(from Anchorage Times, Oct. 25, 1981)

Perched on natural and man-made islands just off the ice-jammed Beaufort Sea coastline, a half-dozen oil rigs have been sitting idle like patient fishermen for weeks, some even months.

Standby charges of as much as $30,000 a day have run up multimillion-dollar tabs without a single drilling bit having yet touched the frozen earth.

The five oil companies who are renting the rigs strongly believe the potential undersea treasure is worth the investment. When the rigs grind into operation at precisely 12:01 a.m. a week from today, the search for an offshore version of the Prudhoe Bay oil field will have begun in earnest.

Oil companies would be satisfied with considerably less, as long as they locate deposits in commercial quantities. No matter what their discoveries, the winter drilling season should show whether the $1.06 billion in bids promised by the industry at the December 1979 joint federal-state Beaufort Sea lease sale was wisely spent.

"It'll be the busiest winter on the North Slope (exploration-wise) since '67-68, and it might even be busier than that one," said Bill Van Dyke, petroleum manager for the state Division of Minerals and Energy Management. "This winter's really going to almost make or break the oil companies" on their Beaufort investments.

Most of the exploration will be offshore, highlighted by the Beaufort drilling in the Barrier Islands region -- all of it within 10 miles of shore and surrounded by relatively shallow waters averaging considerably less than 40 feet in depth.

Oil exploration activity has occurred in the Beaufort on and off for the past several years. But this winter marks the first all-out push in the area, and industry officials are cautiously optimistic about the potential of the 10-year leases from the '79 sale, with some wells to be located as far north as any ever drilled.

Of the 21 wells drilled in the sea so far -- 13 by Sohio Alaska Petroleum Co. -- the results of two have been highly promising.

"The picture is an encouraging one at this stage," said Roger Herrera, Sohio exploration manager. "It's being translated into action this winter.... The fact that companies are willing to spend large amounts of money means they think there are large accumulations."

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Our Gangue....

By Frank Larson, DGGS editor

Ever have that listless feeling? No, not the languid, I'll-do-it-tomorrow feeling, but the sensation that you are *lost*, bereft of all direction, aimlessly adrift on the sea of life? If so, Brother and Sister, you are listless---you done lost your list of things to do...Listmaking is a compulsion, a sickness, an addiction. Ask me. I'm an incurable list junkie. In fact, I maintain two lists. The first is my main list, a compendium of daily chores reminding me of what to do (feed dogs, kiss wife), where to go (work), stops to make on the way home (beer for me, day-old bread for kids), and so forth. The second list tells me where I left the first list...Listmaking is a dangerous disease, possibly a terminal one. (You doubt this? When you're too busy making entries to your list to see the runaway cement truck, it's terminal.)....Lists are sort of a literary Rorschach test. They give you insight into the listmaker. Some lists reflect personal traits, others indicate a personal philosophy. Leroy 'Satchel' Paige, now, was cool. When the ageless baseball pitcher was asked the secret of his longevity, he replied with his list for eternal youth: 'a) Avoid fried foods, for they angry up the blood. b) If your stomach disputes you, lie down and pacify it with cool

thoughts. c) Keep the juices flowing by jangling around gently as you move. d) Go very lightly on the vices, such as carrying on in society; the social ramble ain't restful. e) Avoid running at all times, and f) Don't look back. Somebody might be gaining on you'... Other lists reflect inner turmoil, witness the one sent to lovelorn columnist Abigail Van Buren by a distraught mother. It seems her 7-yr-old boy had an older sister who tormented him. The kid had a list: 'Things to do: a) Get pencil box. b) Cub Scout kerchief. c) Find mitten. d) Kill Phyllis.'...My all- time favorite list, however, comes from---where else?---a restroom. On the wall in the men's room of the local library, where there should be a towel dispenser of some sort, is one of those hot-air hand driers. (For my money, these machines run a very close second in Life's Ulcer Sweepstakes to the ultimate instrument in sadism, the pay toilet.) At any rate, atop this noisy air blower is a list of operating instructions. It says, 'a) Wash hands. b) Shake off excess water. c) Depress large button. d) Hold hands under nozzle, rubbing together vigorously.' At the bottom of the list someone had painstakingly scribed, 'e) Dry hands on pants.'.... Now then, here is a list, in no semblance of any kind of order, of recent happenings: a) Chevron recently bid $4.4M for exploration rights on 13 tracts in a BLM sale of oil and gas leases in lower Cook Inlet. One of the late-September bids was for $2.3M for a tract west of Anchor Point, 15 mi NW of Homer. b) Diamond Shamrock, an NRG firm from Dallas, home of the Ewings, plans to invest $25M in developing their leases on 21,000 acres of the Beluga Coal Fields, west of Anchorage. (The Bass-Hunt-Wilson consortium has held the leases since 1967.) c) Placer Amex (of SF, home of the you-know- whats) shipped 1,200 tons of Beluga coal to Japan in mid-October. The coal, shipped from the Port of Anchorage, will be tested for its efficiency in fueling Nipponese power plants. d) Sun Eel-Alaska, a subsidiary of Sun Eel Shipping of South Korea, is considering a 14-acre site in Seward for construction of a coal-loading facility; original plans for one in Anchorage fell through when the municipality announced it would not spend $3.5M for ground stabilization. e) Taiwan is looking toward developing a coal market with Alaska in about 5 yr. P.S. Pan (first name Peter?) of the Taiwan Power Company said, "After 1986 we will be looking for coal from Alaska, and trade will be very much speeded up." f) Bear Creek Mining, the exploration division of Kennecott, has opened an Alaska office (1111 Dowling Rd, Anchorage). g) An Exxon well at Pt. Thomson, 50 mi E of Prudhoe Bay, came in with considerable quantities of oil and gas. Exxon, which participated in the 1979-80 drilling with Mobil, Phillips, and Chevron, only recently announced the findings. Five of six exploratory wells in the region tested significant quantities of oil and gas. Exxon is planning two more wells this winter. h) NERCO, Inc., a subsidiary of Pacific Power and Light, bought Resource Associates of Alaska in late October for $15.2M. RAA will continue to work with the parent company on a tungsten-gold deposit near FBX and in locating coal reserves on the Alaska Peninsula. i) The BLM issued patent to Kennecott Minerals for 16 lode claims in the Ambler district on the south flank of the Alaska Range. The deposit, a prospective openpit Cu-Zn-Pb-Ag-Au mine, is near the copper-rich Ruby Creek deposit. (BLM issued two patents in Alaska in 1979, four in 1980.) j) BLM director Curt McVee advises miners that holders of unpatented claims on federal land located before 1981 have until Dec. 30 to file annual assessment notices with the BLM. If you didn't do any assessment work the previous year, he says, you must file a Notice of Intent to Hold. Failure to do either will cause your claim to be declared abandoned, he says. So, avoid the Christmas rush and file early. BLM has offices in Anchorage (Box 13, 99513) and in Fairbanks (Box 1150, 99707)...How much can you 'read into' a list? The Seattle Chamber of Commerce recently held a contest to choose a city nickname. 'Emerald City' was the winner. However, among the 13,000 entries in the contest to name this verdant metropolis---one not especially known for its abundant sunshine---were some interesting losers. Among them: 'The Big Dripper,' 'City of Crocodile Tears,' 'The Green Weenie,' 'City of Crying Clouds,' 'Puddle Town,' and 'Home of the Peoples Republic of Artesia.'.....Cheers.

	Oct. 30, 1981	3 Months Ago (7/24/81)	1 Year Ago (9/4/80)
Antimony metal per lb, NY dealer	$ 1.26	$ 1.38	$ 1.50
Barite (drilling-mud grade per ton)	$ 95-115	$ 32-61	$ 30-60
Beryllium ore, stu*	$130.00	$130.00	$ 75.00
Chrome ore per long ton (Transvaal)	$ 55.00	$ 55.00	$ 51.00
Copper per lb. (MW-prod.)	$ 0.81	$ 0.82	$ 0.947
Gold per oz.	$427.14	$410.60	$651.00
Lead per lb.	$ 0.38	$ 0.42	$ 0.42
Mercury per 76-lb flask	$420.00	$440.00	$390.00
Molybdenum conc. per lb. (Climax)	$ 7.90	$ 8.70	$ 10.31
Nickel per lb. (cathode)	$ 3.45	$ 3.00	$ 3.45
Platinum per oz.	$415.30	$407.00	$696.40
Silver, New York, per oz.	$ 9.04	$ 8.46	$ 17.20
Tin per lb., MW composite	$ 7.90	$ 6.44	$ 8.53
Titanium ore per ton (ilmenite)	$ 70.00	$ 70.00	$ 55.00
Tungsten per unit (GSA domestic)	$125.21	$133.00	$130.00
Zinc per lb. (MW-US PW)	$ 0.46	$ 0.46	$ 0.364

* - Standard ton unit (20 lb)

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