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Jay S. Hammond—Governor *Guy R. Martin—Commissioner*

Ross G. Schaff—State Geologist

IN THIS ISSUE

Guy R. Martin Named DNR Commissioner

On March 5th, Governor Jay Hammond nominated an attorney, Guy R. Martin, as Commissioner of Natural Resources. Martin brings not only legislative experience to the post, but historical attributes as well: His grandfather, also named Guy Martin, was a Colorado legislator who was chairman of the Mines and Mining Committee.

At the time of his appointment, Martin was concluding 2 years as Washington, D.C. counsel for the Egan administration, where he represented the institutional interests of the State of Alaska with the Federal government and any other parties having legal relationships with the State. Previously, he had been a legislative assistant to the late Rep. Nick Begich, was Alaska's sole representative at the Outer Continental Shelf hearings, and had lobbied for the state on the native land claims bill, the trans-Alaska pipeline bill, D-2 lands (see p. 4), and other matters. Martin came to Alaska in 1967 as an instructor in political science at Alaska Methodist University in Anchorage.

Martin's statement to the Daily News-Miner (May 1, 1975) rings a note of caution to the hard-rock miner, however. The Commissioner said that "the Department of Natural Resources is not a department of natural resource development. It has a responsibility to deal sensitively with natural resources. That means develop only where it makes sense to develop and withhold development when it makes sense to do so.

" 'I hope to have a very integrated approach to natural resources policy—to make sure each type of activity that we deal with is balanced off against other things. I told the miners that we will have areas in parks where mining can co-exist with park use, but there will also be areas where environmental values are so high, that even though we know the resources are there, we shouldn't mine them. We will have to balance out values,' he said."

In Fairbanks April 26 for the Community Growth Forum, Martin said, "I see my greatest value to the Department of Natural Resources stemming from the fact that I didn't come from one of the disciplines in mining, timber, or petroleum. Such a person is biased in his own interests. I have experts in these fields in my department to provide technical information. My plan of integration is to set up regular meetings with all of my division heads, so they can exchange ideas with each other; that has never been done before."

Martin stressed the same philosophy the previous evening at an AIME speech before members of the Alaska mining community and U. of A. graduating seniors in geology. He said, "If we can get the crusty, hard-bitten geologist to stop fondling his rock hammer and talk with the park ranger, for instance, the rest will be easy."

Martin, 32, is a graduate of the University of Colorado, where he obtained a B.A. degree in 1964 and a J.D. degree in 1967, specializing in natural resource law. He lettered in football as an undergraduate, playing linebacker for the Buffs' 1963 Orange Bowl team *(a possible reason why nobody took umbrage at his "rock-hammer fondling" comment.)*

The Martins (his wife is the former Nancy Sand, of Long Island, NY) will live in Juneau. Their interests include skiing, and all outdoor sports. Another hobby is renovating old homes—an avocation that may well come in handy in the housing-scarce capital city.

Geochemistry as a Prospecting Tool

by Alfred F. Trites

(Ed. note—This is the second of a series from The Mining Record [Dec. 18, 1974]. The author is a consulting geologist in Denver.)

Soil Sampling Procedures

After you as a geochemical prospector have assured yourself that the soil of your area is in place and represents the underlying rock you are then ready to lay out a plan for soil sampling. Here with care and planning you may save yourself both time and dollars and still obtain the information needed to determine the presence of a buried ore deposit.

The arrangement of sample locations will be guided largely by the size and shape of the deposit being sought. Of course, the ultimate in a sample pattern would be a very closely spaced grid covering the entire area of interest. Since most of us cannot afford such an intensive program we have to consider other arrangements to sample sites. You may still want to consider grid sampling on fairly wide centers, say 500 or 1,000 feet, for a look at the metal values spread out over a large area. Such a sparse pattern is an excellent reconnaissance tool and can have a definite place in searching for more extensive deposits, such as disseminated copper, molybdenum, or even gold deposits. Wherever unusually high metallic values are found additional sampling can be undertaken later on a tighter pattern. The wide spacing of samples has the disadvantage that smaller targets, such as veins or faults, may be completely missed.

Another pattern is to collect the soil samples along a traverse line. Such lines can later be used as baselines for the development of a grid pattern if the results of your first sampling warrant it. Try to run your sample lines as nearly as possible at right angles to the veins or mineralized zones. If possible, place them so as to avoid gravel-filled valleys which you will not sample. A soil traverse is a quick and effective way to get a good cross-section of the soils values across a mountain range. The spacing between samples is governed by the widths of the mineralized targets being sought. Where the veins are wide and carry significant metal values an interval of as much as 200 feet may be used, whereas it may require samples as closely spaced as 40 or 50 feet for smaller veins. I have found an interval of 100 feet to be suitable where I know the veins to be of medium size.

A third way to collect samples is without a definite pattern but at points which you select because of their nearness to suspected mineralization. No sampling program should be so rigid that it does not permit you to take an extra sample here and there. Take a few extra samples where you see indications of mineralization or any other feature, such as rock alteration, faulting, veining, or a contact between different rock types. The taking of a few soil samples requires such a little time and can often fill in gaps that so often remain even after the most careful examination and sampling of the rocks exposed.

I feel that a word of caution is important no matter how the sampling program is conducted. Just as you would avoid "salting" yourself in sampling a vein by taking too much of the obviously high-grade rock, be careful not to come up with soil values that do not represent the rock below. Contamination from mine dumps or prospect pits can spread out for tens of feet or farther, especially down the slope from the toe of the dump. Likewise, open pit mining operations where blasting has plastered mineralized rock across the countryside can result in the contamination of the upper few inches of the soil. I recall one instance in which anomalously high mercury values in a soil were the product of fumes from an old retort which had long ago been dismantled and removed. This area which was drilled with negative results was on the downwind side of the mercury retorting operation. Areas near smelters should be examined cautiously for unusually high backgrounds in such elements as lead and zinc. Be careful that your high values don't outline that old mine road along which are strewn fragments of high-grade ore.

How Deep to Sample

No strict rule can be given as to the depth at which soil samples should be taken. Soils can vary in thickness from less than an inch to scores of feet. The climate, vegetation, and the composition of the decomposing rock all have a part in the formation of that soil you are preparing to sample.

Without going into a detailed discussion of soils which is an important science itself, a cut-away section of a normal soil formed in the temperate zone shows a profile consisting of three main layers or zones. The top or surface layer can vary from a few inches to three feet or more in thickness. This layer is characterized by an abundance of organic matter which very often imparts a gray or black color which is darker than the underlying soil. Organic matter, mixed with grains of quartz and other resistant minerals, together with clay particles, are the components of this layer.

The top layer is underlain by a much lighter colored layer, very often light gray to nearly white, consisting

predominantly of clay. Much of the iron oxide and the metallic elements have been leached from this layer, making it low in its metal content. This layer is usually thicker than the top layer.

The third or lowest layer, sometimes called the "C" zone, immediately overlies the bedrock and contains fragments of this parent rock from which it is being derived. The color of this zone can be yellow, orange, red, brown, or a mottling of these. Many of the metallic elements which have been leached from the zone above have found their way downward into this layer which therefore tends to be enriched in them. This "C" zone is the layer most commonly sampled where this normal soil profile has been developed.

As is so often the case in nature, the normal mature form is not everywhere found. It is here that the prospector must use his own judgment to decide on the interval to sample. For instance, I have found that in much of the arid Southwestern U.S. the soils are less than two feet or so in thickness and have no recognizable zones. In such instances there is no choice but to remove the top two or three inches and sample the remaining soil beneath. It is very important, however, to be consistent in sampling the same interval wherever possible. I like to make notes in my fieldbook, describing the soil as I see it and any irregularities encountered during the sampling.

New Documents Released

One special report, four open-file reports (AOFs), and an information circular have been released. The open files are available through Petroleum Publications, 409 W. Northern Lights Blvd., Anchorage 99503; the others may be procured through the DGGS College office.

Special Report 10, Radiometric dates from Alaska--A 1975 Compilation, by D.L. Turner, D. Grybeck, and F.H. Wilson; 57 p. (includes 726 mineral and whole-rock dates determined by K-Ar, Pb-Sr, fission-track U-Pb, and Pb alpha techniques); $1.00.

AOF-51, Mineral resources of Alaska and the impact of federal land policies on their availability--Coal, by D.L. McGee and K.M. O'Connor; 29 p. (8-1/2" by 14"), including seven maps with eight colored overlays, $15.00 postpaid, $14.40 in person (through Petroleum Publications). This is a compilation of the known and estimated coal resources of Alaska, determined from field observations, surface outcrops, and electrical logs from exploratory wells.

AOF-73, Aeromagnetic map, Big Delta quadrangle, Alaska; map (scale 1:250,000); $2.25 postpaid, $1.85 in person (through Petroleum Publications).

AOF-74, Cook Inlet Basin subsurface coal reserve study, by D.L. McGee and K.M. O'Connor; 24 p., including one table (six p.), six figures, and three maps, 17" by 21" (scale, 1 inch = 8 miles), $10.40 postpaid, $9.80 in person (through Petroleum Publications).

AOF-75, An evaluation of energy alternatives, Alaska and the western United States, and review of environmental impact statement 74-90, section F (energy alternatives), by R.M. Klein and K.M. O'Connor; 35 p., including two tables and six figures, $7.90 postpaid, $7.50 in person (through Petroleum Publications).

Information Circular 11, List of reports issued by the Division of Geological and Geophysical Surveys, revised May 1, 1975, 10 p. Free.

Schaff Named State Geologist

(Ed. note--As the Mines & Geology Bulletin went to press, Commissioner Martin announced his choice of new State Geologist. The following is an excerpt from the Anchorage Daily News, May 2, 1975.)

Dr. Ross G. Schaff, 39, a member of the Alaska Methodist University staff since 1960, was tapped for the position earlier this week by Commissioner of Natural Resources Guy Martin. Official confirmation of the appointment, which becomes effective May 12, came from Gov. Jay S. Hammond's office late Thursday afternoon.

A graduate of Boston University where he received his AB, MA, and PhD degrees in geology, Schaff came to AMU as an assistant professor. In 1965 he was promoted to associate professor and received his full professorship in 1969. During the 1973-74 school year Schaff served as AMU's acting academic dean, being appointed to the position permanently last autumn.

In announcing the appointment Martin said Schaff will now be able to use his skills over the wide spectrum of natural resource problems facing the state.

Schaff, who has specialized in minerals, economic geology and petrology, has authored several articles and professional papers on Alaska mineral resources. Schaff has done consulting field work in the Alaska Range and Alaska Peninsula as well as organizing and developing a program for students in the Wrangell Mountains. Schaff has also conducted travel-study programs for students in Europe and Hawaii.

Schaff said he's "extremely excited" about the opportunities his new position offers."

"I feel the history of Alaska will be written in terms of the mineral resources of the state." he said. "It's essential the people of Alaska have access to basic data about these natural resources. This is the function of the geological survey."

DGGS 1974 Aeromagnetic Maps to go on Sale June 16

Fifteen-minute aeromagnetic maps compiled from the 1974 flight season will go on sale at all four DGGS Mining Information offices on Monday, June 16. Sale the maps, scaled 1:63,360, will begin at 11 a.m. in Juneau (11th floor, State Office Bldg., Pouch M, 99811) and Ketchikan (205 State Office Bldg.; P.O. Box 2438, 99901). The sale will start at 9 a.m. in the Anchorage office (MacKay Annex, 323 E. 4th Ave.; 99501) and at the College office (Physical Plant Bldg. of U. of A.; P.O. Box 80007, 99701).

The maps may be purchased or examined at any of these offices. They cost $1.05 postpaid or $1.00 in person. (Additional 15-minute maps from the 1974 flight season are being prepared, and will be announced in a later Bulletin.) Those maps to be offered for sale June 16 are:

Ambler River	A-4 thru A-6
Baird Mts.	A-1 thru A-4
Baird Mts.	B-3, B-4
Baird Mts.	C-3, C-4
Baird Mts.	D-3, D-4
Selawik	D-1 thru D-4
Shungnak	D-3 thru D-5

Also to be made available on June 16 are 1:250,000 composite aeromagnetic maps of the four quadrangles listed above. They are part of the DGGS open-file report system, and will be handled through Petroleum Publications, 409 W. Northern Lights Blvd., Anchorage 99503. The cost for each is $2.90 postpaid, $2.50 in person. When ordering, specify the AOF number:

AOF	Quadrangle
76	Ambler River (western two-thirds)
77	Baird Mts. (eastern two-thirds)
78	Selawik (northeastern part)
79	Shungnak (northwestern part)

The Alaska Land Withdrawals

by James Barker, BLM Mining Engineer

(Ed. note—This is the second in a series by the Bureau of Land Management to inform the public—especially the small mine operator—of the current mineral situation in Alaska.)

Of the total 375 million acres in the state, more than 255 million acres, or two-thirds, is either closed to mineral development or severely restricted. The rest of the land consists of a) about 55 million acres that is under the jurisdiction of the State Mining Laws and which are generally available for all forms of mineral activity and b) the D-1 lands (62 million acres), which are open only to metalliferous mining. *Thus, only about 13 per cent of the land in Alaska is open to full operation of the mining laws.*

The terms "D-1 lands" and "D-2 lands" are common to Alaskans, but what do they really mean? More specifically, what do they mean to the mining industry?

As discussed in the last Bulletin, the Alaska Native Claims Settlement Act (ANCSA) of December 18, 1971 provided for the withdrawal of 116.4 million acres of existing Indian reserves. Until final selections are made, these lands are withdrawn from all forms of appropriation under the public-land laws, including the mining and mineral leasing laws and from the right of selection under the Alaska Statehood Act.

Furthermore, ANCSA Section 17(d)(2) (hence the term "D-2") provides for the withdrawal of up to 80 million *additional* acres of land suitable for inclusion in the National Park, Forest, Wildlife Refuge, and Wild and Scenic Rivers systems. These lands, like the native-selected lands, also are withdrawn from operation of the mining and mineral leasing laws. Congress has until December 1978 to decide on the final outcome of the D-2 proposals. Until this time, however, the miner cannot enter these lands for prospecting and claim locating.

Section 17(d)(1) of ANCSA authorized the withdrawal of all remaining unreserved public lands in Alaska from public-land laws, including the mineral leasing laws and the mining law (except location for metalliferous minerals). These lands, which comprise about 62 million acres, are being reviewed for future classification by BLM.

Another 5 million acres were withdrawn in December 1971 for the utility corridor for the trans-Alaska pipeline. Within this corridor is an inner corridor of approximately 3 million acres that is closed to all types of mining activity.

The lands in the D-1 category are thus withdrawn from filings on homesteads, state selection, mineral leases (coal, oil, gas, etc.), or nonmetallic locatable minerals such as asbetos. These D-1 lands are open to the location of metallic minerals claims. Lands in the D-1 category will remain temporarily withdrawn until permanently classified by the Interior Department.

The question has been raised as to what are the access rights on D-1 or D-2 land where claims were located prior to the withdrawals. In essence, the mining laws of the United States gave to the owner of a mining claim an implied right of ingress and egress across public lands for maintaining the claim and removing the minerals. It has been interpreted that special permits are *not* necessary on D-1 lands. This land will continue under the operation of the mining laws as if it were open public-domain land. The only difference is that there can be no new location for nonmetallic minerals. On D-2 land where prior valid rights were established before the closures, the subsequent use or improvement of access routes cannot be infringed on. The miner holding a valid claim but who has not constructed the necessary access roads will continue to have a right to construct a road.

Permits such as a regular Tramroad Permit are not necessary but are recommended as a legal precaution

in these days of conflicting land claims and withdrawals. This sort of permit does not require a survey, and only a small annual rental is charged. Further information is available at any BLM office.

In addition to the ANCSA withdrawals, the D-1, and the D-2 lands, nearly 52 million acres had already been closed or severely restricted to mining activity. These lands had been reserved prior to the passage of ANCSA under other legislation for such uses as military, parks, and wildlife refuges. Nearly 2 million acres are also being patented to Alaskan Natives under the 1906 Native Allotment Law and are withdrawn from all appropriation under the public land laws until patent is conveyed.

Because of the multitude of laws and the complex and changing patterns of land status, the person interested in the minerals field finds it increasingly important to be aware of both land status and the applicable laws.

What problems are encountered if a claim is staked on withdrawn lands? First, the claimant has gained no rights under the prevailing mining laws. He has gained no protection for either a mineral discovery or for his investment on the land. Also, the claim would not become valid even if the land is later returned to public-land status.

Second, the "Forgive us our trespasses" principle is not invoked. The illegal claimant is liable for trespass proceedings. He can be charged for the value of the minerals removed and for the cost of rehabilitation if significant environmental damage occurs. A mining claimant who exercises his implied right of access across public lands may be held liable for unnecessary surface damage or unneeded circuitous routing. Existing trails should be used wherever possible. The implied rights of access provided to benefit miners includes reasonable conditions and covenants related to its use. Surface damage or abandoned roads should be reasonably restored or stabilized.

The various BLM offices in Alaska would be glad to offer planning assistance to any claimant interested in building an access road.

The BLM is charged with management of withdrawn federal lands for the various agencies. Laws which apply to those lands are set by Congress and must be enforced. This can be expensive and time consuming for both the miner and for the government. Either through ignorance of the law or apathy, many prospectors have recently been working on withdrawn lands. It cannot be overly stressed to anyone working in mineral exploration—check the land status first!!

Out-of-Print Division of Mines Documents Reissued

Seven reports that have been out of print for a number of years have been reprinted. Available through all four DGGS offices (p. 4), these reports are listed below. (Note: most maps are bluelines.)

Geologic Report 3, Geology of the Portage Creek-Susitna River area, by D.H. Richter; July 1963 (2 blueline p., including map, scale 1:24,000); $1.00.

Geologic Report 6, Geology and mineral deposits of the Ahtell Creek area, Slana district, south-central Alaska, by D.H. Richter; May 1964, 17 p. and map (scale 1:31,680); $1.00.

Geologic Report 12, Geology of the Bear Creek area, Seward Peninsula, Candle quadrangle, Alaska, by G. Herreid; May 1965, 15 p., map (scale 1:44,000), $1.00.

Geologic Report 20, Geological and geochemical investigations in the Eureka Creek and Rainy Creek area, Mt. Hayes quadrangle, Alaska, by A.W. Rose; June 1966, 36 p., 3 maps (scale 1:42,420, 1:180,000), $1.00.

Geologic Report 22, Geology and geochemistry of the Nixon Fork area, Medfra quadrangle, Alaska, G. Herreid; July 1966, 29 p., map (scale 1:42,240); $1.00.

Geologic Report 32, Geology of an area on the Upper Talkeetna River, Talkeetna Mountains quadrangle, Alaska, by A.W. Rose; February 1967, 17 p., map (scale 1:63,360); $1.00.

Special Report 2, Mineral occurrences in the Yukon region, Alaska, by R.H. Saunders; April 1967, 58 p., 2 maps (scale 1:84,480); $1.00.

The Princess and the Tin Box

by James Thurber[1]

Once upon a time, in a far country, there lived a King whose daughter was the prettiest princess in the world. Her eyes were like the cornflower, her hair was sweeter than the hyacinth, and her throat made the swan look dusty.

From the time she was a year old, the Princess had been showered with presents. Her nursery looked like Cartier's window. Her toys were all made of gold or platinum or diamonds or emeralds. She was not permitted to have wooden blocks or china dolls or rubber dogs or linen books, because such materials were considered cheap for the daughter of a King.

When she was seven, she was allowed to attend the wedding of her brother, and throw real pearls at the bride instead of rice. Only the nightingale, with his lyre of gold, was permitted to sing for the Princess. The common blackbird, with his boxwood flute, was kept out of the palace grounds. She walked in silver-and-samite slippers to a sapphire-and-topaz bathroom and slept in an ivory bed inlaid with rubies.

1. Copyright © James Thurber. From *The Beast in Men—and other Animals*, published by Harcourt Brace Jovanovich, Inc. Originally printed in *The New Yorker*.

On the day the Princess was eighteen, the King sent a royal ambassador to the courts of five neighboring kingdoms to announce that he would give his daughter's hand in marriage to the prince who brought her the gift she liked the most.

The first prince to arrive at the palace rode a swift white stallion and laid at the feet of the Princess an enormous apple made of solid gold which he had taken from a dragon who had guarded it for a thousand years. It was placed on a long ebony table set up to hold the gifts of the Princess's suitors. The second prince, who came on a gray charger, brought her a nightingale made of a thousand diamonds, and it was placed beside the golden apple. The third prince, riding on a black horse, carried a great jewel box made of platinum and sapphires, and it was placed next to the diamond nightingale. The fourth prince, astride a fiery yellow horse, gave the Princess a gigantic heart made of rubies and pierced by an emerald arrow. It was placed next to the platinum-and-sapphire jewel box.

Now the fifth prince was the strongest and handsomest of all the five suitors, but he was the son of a poor king whose realm had been overrun by mice and locusts and wizards and mining engineers so that there was nothing much of value left in it. He came plodding up to the palace of the Princess on a plow horse and he brought her a small tin box filled with mica and feldspar and hornblende which he had picked up on the way.

The other princes roared with disdainful laughter when they saw the tawdry gift the fifth prince had brought to the Princess. But she examined it with great interest and squealed with delight, for all her life she had been glutted with precious stones and priceless metals, but she had never seen tin before or mica or feldspar or hornblende. The tin box was placed next to the ruby heart pierced with an emerald arrow.

"Now," the King said to his daughter, "you must select the gift you like best and marry the prince who brought it."

The Princess smiled and walked up to the table and picked up the present she liked the most. It was the platinum-and-sapphire jewel box, the gift of the third prince.

"The way I figure it," she said, "is this. It is a very large and expensive box, and when I am married, I will meet many admirers who will give me precious gems with which to fill it to the top. Therefore, it is the most valuable of all the gifts my suitors have brought me, and I like it the best."

The Princess married the third prince that very day in the midst of great merriment and high revelry. More than a hundred thousand pearls were thrown at her and she loved it.

MORAL: ALL THOSE WHO THOUGHT THAT THE PRINCESS WAS GOING TO SELECT THE TIN BOX FILLED WITH WORTHLESS STONES INSTEAD OF ONE OF THE OTHER GIFTS WILL KINDLY STAY AFTER CLASS AND WRITE ONE HUNDRED TIMES ON THE BLACKBOARD, "I WOULD RATHER HAVE A HUNK OF ALUMINUM SILICATE THAN A DIAMOND NECKLACE."

Increase Costs

(Ed. note—A copy of the following letter was published in the Letters to the Editor column of the Fairbanks Daily News-Miner of April 24, 1975.)

April 12, 1975

Dear Legislator:

I would like to call your attention to Senate Bill No. 294, Mineral Severance Tax (by request of the governor). First of all, I would like to be on record as firmly against the passage of this and all similar type shallow and irresponsible attempts to generate short term revenue at the expense of we Alaskan consumers and tax payers.

To place a tax of any form on coal will only increase the cost of electricity and heating within the interior of our state. To levy a tax on clay, stone, sand, gravel, and marketable earth is absurd, as you are only raising the cost of our developing state at the expense of our voting citizens. To levy a tax on asbestos, gypsum, iron ore, lead, zinc, mercury, tin, chromite, boride, copper, silver, gold, and platinum would only mean the demise of our marginal and high-risk mining industry.

Under what logic or guise this legislation was trumped up might bear close scrutiny by those of us who are responsible and concerned Alaskans.

The informed conservationist or ecologist well recognizes that only the highest grade mineral locations could be worked under this type of legislation. Thus, we would have to open up numerous deposits, take only the cream, and then, because of the economics, shut down, leaving the medium to low-grade materials. Should this legislation become law, many mining efforts that are currently low to marginal financial endeavors would be forced to close.

This is precisely the type of legislation that will deter orderly, economic growth within our state. I can only speculate that the parties who support this type of legislation would also support that the entire land mass north of Vancouver Island be annexed to McKinley National Park and open for visitation in accordance with existing park regulations.

I respectfully request that you give deep consideration to this and similar type legislation that will come before you in the guise of easy revenue which in fact may be the ruination of our few existing industries.

Sincerely,
Don Bennett
Mile 101, Steese Hwy.
P.O. Box 2801 – Fairbanks, Alaska 99707

CIA Episode Shakes Ocean Mining Firm

(from Chemical & Engineering News, March 24, 1975)

The startling revelation that the deep-sea mining activities of Howard Hughes' mystery ship *Glomar Explorer* was actually a cover for the Central Intelligence Agency's attempt to recover a sunken Soviet submarine raises as many questions about the future of the embryo deep-sea mining industry as it does about spying and international intrigue.

So far, there are no answers, only questions. Besides Hughes' Summa Corp., three U.S. companies—Deepsea Ventures, Kennecott Copper, and Ocean Resources Inc.—are trying to develop their deep-sea mining technology into a business. Uppermost in the minds of company executives are these questions: Will Summa continue to pursue deep-sea mining now that the submarine escapade apparently is finished? Does Summa or the government own whatever technology may have been developed to mine manganese nodules from the ocean floor? And, more important, if the government owns it, what will it do with the technology?

"Conceivably," says one company official, "we may have a new competitor in our midst--the government itself."

For years, U.S. deep-sea mining companies have been prodding Congress to pass legislation that would protect their investments in case any treaty coming out of the Law of the Sea Conference barred them from mining the deep seabed. Administration officials have opposed this legislation on the grounds that such unilateral action might hamper negotiations at the conference. Now, some of these companies are asking themselves if they were being delayed while the government was developing its own deep-sea mining technology. "We're going to look into this very carefully," one company official says.

Recently, the first hint that the government might indeed enter the deep-sea mining business came to light. An Ocean Mining Administration has been set up within the Interior Department. OMA has prepared draft legislation of its own covering ocean mining activities. Section 11 of that draft outlines the liabilities for which the government will be responsible. Section 12 says that the government will not be liable for any other damage arising out of this act "unless the U.S. itself engages in ocean mining—and its activities are the cause of the damage or the basis of a claim for compensation or indemnification."

Does this mean that the government intends to jump into deep-sea mining through a government corporation such as the proposed Federal Oil & Gas Corporation? If not, how will the government use its manganese nodule technology, if it has any? Conceivably, it could license it to the U.S. companies. Or as one observer suggests, the U.S. could give it away to any international agency that may be formed under a Law of the Sea treaty in exchange for other treaty terms that the U.S. is seeking.

Right now, the questions are speculative. But the embryo U.S. deep-sea mining industry already is busy digging for the answers.

God and EPA

(from Missouri's Environment, March 1975)

(Ed. note—The Hon. Andrew J. Hinshaw of California, member of the U.S. House of Representatives, is the author of this report reprinted from the Congressional Record of Oct. 10, 1974.)

In the beginning God created heaven and earth.

He was then faced with a class action lawsuit for failing to file an environmental impact statement with HEPA (Heavenly Environmental Protection Agency), an angelically staffed agency dedicated to keeping the universe pollution free.

God was granted a temporary permit for the heavenly portion of the project, but was issued a cease and desist order on the early part, pending further investigation by HEPA.

Upon completion of the construction permit application and environmental impact statement, God appeared before the HEPA Council to answer questions.

When asked why He began these projects in the first place, he simply replied that He liked to be creative.

This was not considered adequate reasoning and He would be required to substantiate this further.

HEPA was unable to see any practical use for Earth since "the Earth was void and empty and darkness was upon the face of the deep."

Then God said: "Let there be light."

He should never have brought up this point since one member of the council was active in the Sierrangel Club and immediately protested, asking "How was the light to be made? Would there be strip mining? What about thermal pollution? Air pollution?" God explained the light would come from a huge ball of fire.

Nobody on the council really understood this, but it was provisionally accepted assuming (1) there would be no smog or smoke resulting from the ball of fire, (2) a separate burning permit would be required, and (3) since continuous light would be a waste of energy it should be dark at least one-half of the time.

So God agreed to divide light and darkness and he would call the light Day, and the darkness Night. (The council expressed no interest with in-house semantics.)

When asked how the Earth would be covered, God said "let there be firmament made amidst the waters; and let it divide the waters from the waters."

One ecologically radical council member accused him of double talk, but the council tabled action since God would be required first to file for a permit from the ABLM (Angelic Bureau of Land Management) and further would be required to obtain water permits from

appropriate agencies involved.

The council asked if there would be only water and firmament and God said "Let the earth bring forth the green herb, and such as may seed," and the fruit tree yielded fruit after its kind, which may have been itself upon the Earth.

The council agreed, as long as native seed would be used.

About future development God also said: "Let the waters bring forth the creeping creature having life, and the fowl that may fly over the earth."

Here again, the council took no formal action since this would require approval of the Game and Fish Commission coordinated with the Heavenly Wildlife Federation and Audobongelic Society.

It appeared everything was in order until God stated he wanted to complete the project in six days.

At this time He was advised by the council that his timing was completely out of the question....HEPA would require a minimum of 180 days to review the application and environmental impact statement, then there would be the public hearings.

It would take 10 to 12 months before a permit could be granted.

God said "To Hell with it!"

Lost River, Native Group Sign $78 Million Pact

(from EM/J Mining Activity Digest, April 1975)

Lost River Mining Corp. Ltd. has signed a long-term agreement with Bering Straits Native Corporation of Nome to assist in the development of its fluorite and tin-tungsten orebody on the Seward Peninsula. The complex agreement also gives Lost River exploration and development rights in adjoining land selected by Inalik "Diamede" Native Corp. Brevig Mission Native Corp. and Teller Native Corp. are participants in the agreement and will lease lands to Lost River for an airport, deepwater port, and material sites needed to develop the mine. Mine support facilities, including tailings disposal, water storage and a townsite, will be on land leased from Inalik. Bering Straits is a major participant in mine construction contracts and will assist in financing the $78 million project. Construction is scheduled to begin this summer.

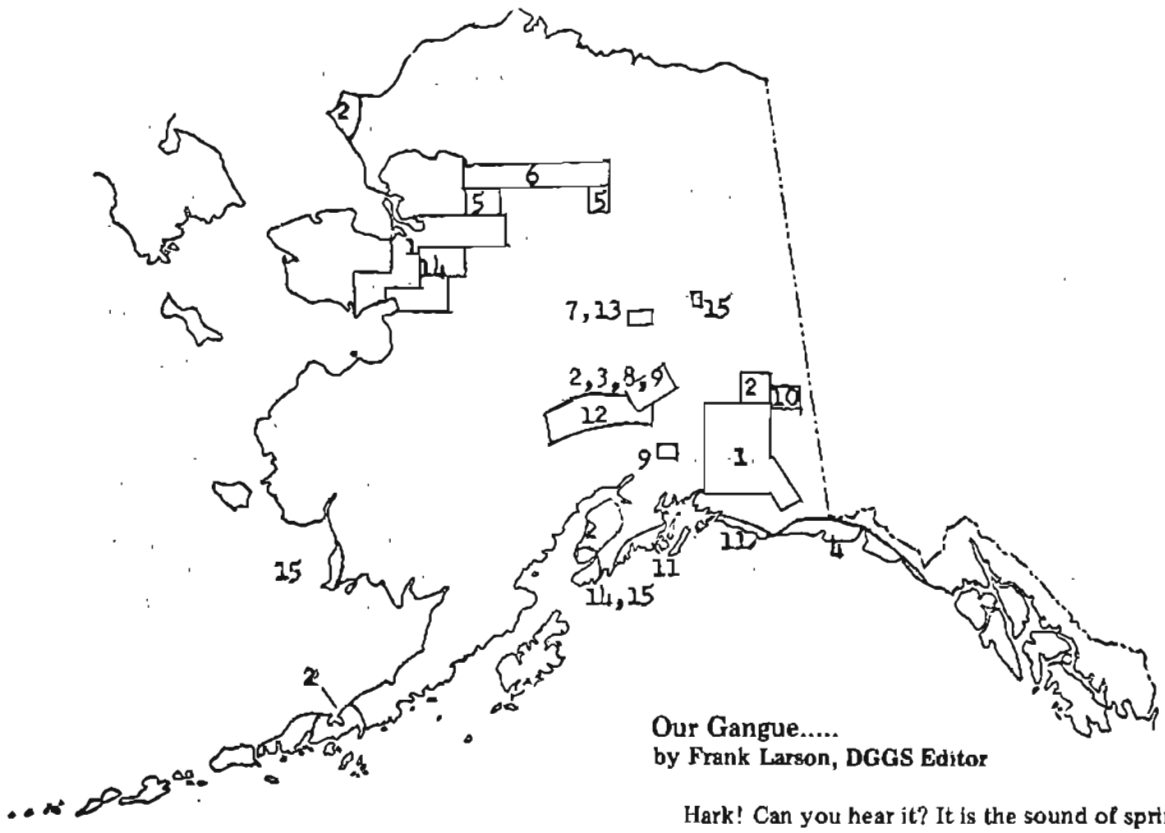
UV Industries estimates gold production at its Nome and Hogatza operations in 1975 will produce 20,000 ounces.

DGGS, U. of A. Summer Field Work Scheduled

Late this month, geologists from DGGS and the University of Alaska will pack their beloved hammers and their *OFF* and start heading for the bush. Most field parties (see map) plan on beginning operations by early June.

DGGS	
1. G.R. Eakins	Uranium potential of Alaska (under contract with ERDA).
2. C.N. Conwell	Primarily collecting coal samples for USGS national coal data bank.
3. T.E. Smith, T.K. Bundtzen, W.G. Gilbert	Geological mapping in Kantishna Hills, and mineral resource investigations.
4. W.M. Lyle	Evaluating sedimentary rocks, proposed OCS sale area, Gulf of Alaska (with USGS).
5. M.A. Wiltse, M.W. Henning	Examining copper belt in Ambler River and Survey Pass quadrangles; copper skarn mineralization in Chandalar quadrangle.
6.G.H. Pessel	Oil geology along north front of Brooks Range and regional geology of Brooks Range in cooperative program with USGS.
University of Alaska	
7. D.B. Hawkins[1]	Investigation of arsenic in water, Pedro Dome area.
8. D.M. Triplehorn[1]	Radiometric dating of coal-bearing Tertiary sediments, Kenai Peninsula; coal sampling in various locations.
9. C. Ariey	Geologic assistant - Healy, Sheep Mt.
10. M.S. Robinson	Mineral exploration, Tok area.
11. T.L. Patton	Mineral exploration, Gulf of Alaska area.
12. J. Decker	Mapping, central Alaska Range.
13. D. Wilcox	Investigation of arsenic in water, Pedro Dome area.
14. B.K. Jones	Petrography of anomalously radioactive alkaline plutons; correlation of radioactivity, mineralogy, and trace elements.
15. D.L. Turner[2]	Sampling intrusives and metamorphics for dating near Chena Hot Springs (with USGS); examining ash beds and coals for dating near Homer and Seldovia; mapping and sampling of Precambrian terrane in Goodnews Bay area.

1. Faculty
2. Geophysical Institute



Mining Claims Filed in March Total 650

In April, the DGGS mining information office received 650 location notices (of new claims) from the 36 recorders' offices located throughout the state. These notices, filed in March, were from the following USGS quadrangles.

Fairbanks	6
Seward	2
Livengood	3
Healy	36
McCarthy	8
Ambler River	184
Survey Pass	391

Alaska has unsnarled the gigantic native claims problem. It is well on its way to become the number one oil state in the nation, the number one state to supply energy resources. And hopefully in the not too distant future Alaska, the development of Alaska's tremendous storehouse of other resources will be developed.

Alaska is on the move. It no longer is a territory or a far-flung province. It is a full-fledged state of the union.

—All-Alaska Weekly, April 25, 1975

Our Gangue.....

by Frank Larson, DGGS Editor

Hark! Can you hear it? It is the sound of spring. Birds singing, children playing, cars splashing, glorious spring---when one's thoughts turn to love, youth, breweries, and avoiding chuckholes....and spring, according to Mona, our resident typist, sexpot, and sage, is when "the geologists are all happy, because that's when the snow leaves their rocks." ....Spring, too, is when one's thoughts turn to more mundane (Webster: *earthy*) subjects---for example, the coming field season (p. 8), when geologists the world over pack their beloved hammers, humming "Sedimental Journey"..... J.W. Kerr, in "Tips on Organizing Arctic Geological Field Work" (Geological Survey of Canada Paper 74-12) offers some advice to young geologists: "When mapping, get problem oriented above all. Sit down, study the (air) photos, and then walk to the outcrop or place that will contribute most to solving the immediate problem. Do not sit on the rocks for long, or you may join the long list of field geologists who have piles. My trick is to sit on one or both ankles, Indian style. When the ankles begin to hurt, you have probably sat there long enough and will learn more by walking to another outcrop."..... This is an excerpt, I believe, from a chapter entitled "Having Piles Does Not Necessarily Mean You Are Rich"..... Speaking of piles (are you ready for this?), it appears DGGS has hit a real streak of paydirt. In the span of one issue of the Bulletin, we went from zero Commissioners (p. 1) and State Geologists (p. 3) to one of each....(and after *this* column, perhaps from one mundane editor down to zero).....Cheers.

Metals Market

	April 20, 1975	February 17, 1975	April 26, 1974
Antimony ore, stu equivalent European ore	$ 21-25	$ 23-24	$ 23.5-24.5
Barite (drilling mud grade per ton)	$ 17-21	$ 17-21	$ 17-21
Beryllium ore stu.	$ 30.00	$ 30.00	$ 30.00
Chrome ore per long ton	$ 35.00	$ 55.00	$ 37.00
Copper per lb. (MW-prod.)	$ 0.63	$ 0.63	$ 0.6857
Gold per oz.	$170.75	$189.50	$169.30
Lead per lb.	$ 0.245	$ 0.245	$ 0.215
Mercury per 76-lb. flask	$159.00	$228.00	$283.00
Molybdenum conc. per lb.	$ 2.43	$ 2.43	$ 1.87
Nickel per lb.	$ 2.01	$ 2.01	$ 1.62
Platinum per oz.	$149.00	$160.50	$245.00
Silver per oz., New York	$ 4.35	$ 4.49	$ 5.50
Tin per lbs. New York	$ 3.53	$ 3.73	$ 4.67
Titanium ore per ton (Ilmenite)	$ 55.00	$ 55.00	$ 38.00
Tungsten per unit	$ 84.21	$ 88.125	$ 57.52
Zinc per lb.	$ 0.3885	$ 0.39324	$ 0.3482

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