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

MINES BULLETIN

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IN THIS ISSUE:

PIPELINE GEOLOGY

The various oil companies involved with the Trans-Alaska Pipeline plan to geologists along the entire pipeline route as part of an extensive samplin call for the geologists to take samples from the bottom of the pipeline's at given intervals. Various analyses will be run on the samples in hopes areas of mineralization will be indicated. This will be one of the most e pling programs conducted in the state thus far.

INLET OIL

Inlet Oil, new owner of Alaska Barite Company, is an independent Alaskan c sified interests in both oil and mineral exploration. The latest issue (N Alaska Construction and Oil gives an interesting summary of the company's

Of particular interest to the mineral industry is Inlet's exploration of o directly adjacent to known mineral occurrences on land. Proof of the succ shore exploration is found in the company's recent discovery of additional Canal adjacent to the newly acquired Castle Island barite deposits. At th this operation is probably the only undersea lode mining operation in the call for future expansion of the entire operation.

Inlet Oil used two vessels in its exploration work this summer. One, a c sweeper, had new highly-sophisticated navigation equipment installed on bo vessel was a self-propelled barge containing various geophysical and corin Also on board was a chemist's lab which included an atomic absorption unit worked in Southeastern Alaska and the Bering Sea.

TRANSPORTATION CORRIDOR

Indications are that $3 million will be spent to survey the transportat
/ctic." Transportation Secretary John Volpe said the project will take
and will be primarily concerned with the physical aspects of the corrid
will touch upon the economic feasibility of a railroad north although V
pect the study to be able to prove that the railroad will pay for itsel

CORTELLA COAL

Various reports indicate that the Cortella Coal Corporation, another inc
company, is ready to start delivery of coal from its 18 000 acres of coa
in the Bering River coal field between Cordova and Yakutat. Plans call
built from the fields to the Katalla loading dock 21 miles away. If the
pleted early next summer, the first shipment of a million dollars worth
delivered to Japan bound cargo ships.

The coal is low-volatile bituminous and is suitable for metallurgical wo
coal, and for briqueting. It is of low ash quality and thus is quite fa
tion-conscious buyers. The coal occurs in the Kushtaka formation of prc
estuary deposition in Tertiary time. The thickness of the coal seams va
tion of an inch to as much as 47 feet in an outcrop area of approximatel

The Bering River coal fields were first discovered in 1898, but oil depo
provided more interest and thus the fields have been dormant for over 50

NOATAK-KOBUK RECORDING DISTRICT

The Noatak-Kobuk recording district is now part of the Fairbanks recordi
Fairbanks is the place of recording for the district and all files of th
district have been transferred from Kotzebue to the Fairbanks office. A
work and new claims for the Noatak-Kobuk district should be filed in the
from now on.

NORTH SLOPE GEOLOGY

The USGS, American Association of Petroleum Geologists-Pacific Section,
California Geology Society are sponsoring a seminar on Geology of the No
February 2-3 in Palo Alto, California. For information and reservations
Kelly, Division of Mines and Geology, Ferry Building, San Francisco, Cal

FIELD CONFERENCE ON WYOMING URANIUM DEPOSITS

The Society of Economic Geologists held a field conference on uranium in
September 11, 12, and 13. A Division of Mines and Geology geologist, Gi
attended the conference to learn what recent ideas or theories on the or
tary-type uranium ores might be applied to the search for uranium in Ala
amounts of uranium have been found in sediments of the lower 48, and it
Alaska has similar sedimentary areas.

The extent of the present activity in uranium exploration was indicated
people attending the conference and the enthusiasm shown. Approximately
for the presentation of papers. The field trips to the Gas Hills and Sh
mines were limited to 140, and many late registrants could not be accept
sedimentary basins in Wyoming are currently the hottest uranium areas fo
the U.S.

Much has been learned during the past few years about "solution fronts" which have con trated uranium in the sandstones of Wyoming and about mineral alteration which serves a guide to exploration. Solution fronts, sometimes called geochemical cells and urani rolls, are formed by the advance of meteoric waters through the uranium-bearing sandst The shape of a front has been compared to that of a crumpled paper bag, the paper itse representing the altered-unaltered boundary where the greatest mineral concentrations occur. Porosity of the sandstone is an important factor in determining the configurat of the fronts, which may be several thousand feet across. The reducing action created the presence of pyrite, carbonaceous material, and anerobic bacteria cause the precipi tation of uranium and other minerals from the charged solutions. Minerals containing molybdenum, copper, silver, lead, vanadium, manganese, and selenium are also associate with the fronts and show definite zoning.

The origin of the uranium is believed to be either ancient granites which have weathere and formed arkoses or volcanic tuffs which are widely distributed in the Tertiary basi

Ideas regarding the solution, transportation, and deposition of the areas are still hot debated, as the evidence differs somewhat at different mines. Most experts agree now t the uranium ores contained in sandstones are epigenetic, that is they were introduced after the sediments were deposited.

Mr. Dave Love, U. S. Geological Survey, predicted at the meeting that within 10 years t low-grade uranium deposits that are now scoffed at will be prime prospects. Love belie that the shortage of trained stratigraphers is already critical and that the study of hydrodynamics within the framework of geologic history is needed for advances in uraniu exploration.

SECRETARY HICKEL ADDRESSES AMC

Secretary of the Interior Walter J. Hickel was a featured speaker at the American Minin Congress in San Francisco recently. Along with the need for greater domestic mining production and solution of pollution and reclamation problems, Secretary Hickel express great interest and concern in how the "mining message" can be delivered to the public a how more skilled and professional people can be attracted to mining. On these latter subjects, Secretary Hickel said the following:

> I believe there is a tendency today for scientists and engineers to go into the mineral-consuming industries, instead of the mineral-producing industries.
>
> Instead of solving old needs, they are creating new demands for raw materials.
>
> So ... if you are going to compete for the people you need, you must promote the human needs and challenges that young people can meet in mining.
>
> Fulfilling needs -- and answering challenges -- excite and attract the young.
>
> And your industries have exciting prospects today.
>
> There is the prospect of harnessing the atom to unlock low-grade deposits of minerals and fuels.
>
> ... of converting coal to liquid fuel and gas for heat and power.
>
> ... of exploring for new resources by satellites.

... of tunneling through the earth at speeds now un

These are stimulating goals, that will attract brig

We must also take a message to the people.

In Colorado, the Mining Association is aiming its m
teachers and counselors.

It has set up a program for teachers in secondary s
six-week, tuition-free course in earth sciences.

Paying only for room and board, the teachers get gr
the Colorado School of Mines.

But most important, they learn how much the mineral
in rewarding, exciting careers.

The industry "teaches the teacher" --- a creative a

In its first year, the cost was modest and the resp
Not only will it be offered again, but the Arizona
begin a similar course.

The Colorado Mining Association is also dealing wit
manpower problem -- the growing need for highly tra
personnel.

The association, with a Federal grant, is conductin
for hard-core unemployables." They can become ski

The program begins with a four-week course that tur
miner's helper. He is paid during this time so he
his family.

With union and company cooperation he is then train
the mine. His pay is at least $2.25 per hour, and

This could be just one answer to your growing deman

The Department of the Interior is following all of

But let's not lose sight of one thing.

No single organization or group is big enough to ta
training program alone. Not the U. S. Government,
industry, not labor.

We have had neglect for too long, and it has been w

Our problems have grown to proportions that call fo
all concerned.

For that reason, the Department is preparing plans for a National Conferen on Mineral Resource Education.

The conference will be held as early as possible -- before the end of this year if possible.

But I don't want that conference to be a "paper-reading" forum!

I want solutions from those who are willing to work hard in a critical cau

Success will be measured in numbers of new resource students, not in numbe of publications.

With these goals in mind, we welcome the cooperation of the American Minin Congress.

We need it, and we thank you.

NEW PUBLICATIONS

The College of Earth Sciences and Mineral Industry, University of Alaska, has a the availability of the following publications, which may be purchased from CES Building, University of Alaska, College, Alaska 99701.

Handbook for the Alaskan Prospector, 2nd Edition, by Dr. Ernest Wolff, price $6.00

Determinative Mineralogy, by Wilkerson, revised by Leo Mark Anthony, price $1.50

Introduction to Prospecting and Mining, by Leo Mark Anthony, price $4.00

The USGS has announced publication of four new maps showing the world distribut known and potential subsea mineral resources.

The maps were prepared at the request of the National Council of Marine Resourc Engineering as part of the U. S. Government's effort to assemble basic informat to its own officials and to those of other countries concerned with subsea expl development.

Sheet 1 is a summary of the subsea distribution of minerals shown on sheets 2, Sheet 2 shows the geologic and physiographic provinces, subsea underground mine coastal placer deposits. Sheet 3 shows potential petroleum resources, while sh saline minerals, sulfur, phosphorite, manganese nodules, and metal-bearing mud. pamphlet accompanies the maps and describes subsea geologic features, and revie factors and the magnitude and potential usefulness of seabed resources.

The maps and pamphlet, "World Subsea Mineral Resources", are published as Miscellaneous Geologic Investigations Map I-632, and are available for $2.75 a set from the USGS Distribution Branch Offices in Arlington, Virgin Denver, Colorado, and Fairbanks, Alaska.

The USGS has also announced the publication of Professional Paper 630 by John E entitled "Economic Geology of the Platinum Metal". This paper may be purchased

Superintendent of Documents, Government Printing Office,
copy. One fact brought out in the paper is that although
in the world production of platinum metals, domestic sour
very limited and concentrated mostly in Alaska.

The following open file reports have been released by the
available for consultation in the Alaska USGS and State D
offices. Material from which copies of these open file r
expense is available only at the Alaska Geology Branch, U
Menlo Park, California 94025.

Geologic framework of the "North Slope" petroleum pr
Irvin L. Tailleur, and William P. Brosge. 15 p., 8

Geologic environmental factors related to TAPS [Tran
from Valdez to Fairbanks, Alaska, by E. Dobrovolny
Yehle. Map, tabular list (1 sheet).

Availability of palynological material from Naval Pe
XVIII: Umiat Test Wells Nos. 1 and 2, East Topagoru
Richard A. Scott. 2 p.

Analysis of selected limestone samples from Iliamna
quadrangle, Alaska, by Robert L. Detterman. 2 p., p
1 table.

E. AND M.J. METAL MARKET PRI

	Oct. 27
Copper, per lb.	51.9¢
Lead, per lb.	15.5¢
Zinc, per lb.	16.0¢
Tin, per lb.	167.2¢
Nickel, per lb.	$1.03
Platinum, per oz.	$120-125
Mercury, per flask	$485-490
Antimony ore, per unit	$11.25-11.47
Beryllium powder, 98%	$54-66
Chrome ore, long ton	$31-35
Molybdenum conc, per lb.	$1.72
Titanium ore, per ton	$20-21
Tungsten, per unit	$43.00
Silver, New York, per oz.	186.7¢
Gold, per oz.	$40.35
Barite (drilling mud grade from E/MJ October)	$12-16

The telephone number listed in the October bulletin for t
Office of the State Division of Mines and Geology was inc
279-2814.