

Public-data File 86-39

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS
MONTHLY REPORTS FOR OCTOBER, NOVEMBER, AND DECEMBER 1976

By

Staff

Alaska Division of
Geological and Geophysical Surveys

June 1986

THIS REPORT HAS NOT BEEN REVIEWED FOR
TECHNICAL CONTENT (EXCEPT AS NOTED IN
TEXT) OR FOR CONFORMITY TO THE
EDITORIAL STANDARDS OF DGGS.

794 University Avenue, Basement
Fairbanks, Alaska 99709

RESOURCE INVESTIGATIONS

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Gilbert R. Eakins 
Chief Mining Geologist

SUBJECT: Monthly report
9/25 thru 10/25/76

A. Consultations:

Phone conversations with Tom Miller, USGS, and Jules Anderson, Bendix, on uranium investigations.

Request received for info on limestone deposits from E.O. Bracken, Dept. of Economic Development.

B. Meetings:

10/5/76 - Ross Schaff - - to compile response to Commissioner Martins request for justifications for the state selection of mineral lands.

10/12/76 - Attended meeting in Anchorage with the Alaska Geological Society's legislative action committee.

C. Research:

ERDA project: continued work on text and maps.

Fortymile land selection study for Division of Lands Planning Section. Several days with Tom Bundtzen prioritizing tracts, compiling maps and writing report - completed.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

FROM: *FL* Gil Eakins
Chief Mining Geologist

SUBJECT: Progress Report for November 1976

A. Consultations

1. Had two calls from the Alaska Energy office. They are trying to make up a forecast for when and where uranium will be produced in Alaska. Talked with Gene Rutledge.
2. Had a call from Brad Tuck, Land Use Planning Commission, who is also studying the state's uranium potential.

B. Meetings

1. Attended Division planning meeting in Anchorage, November 28.
2. Attended Alaska Minors annual meeting in Anchorage, November 29-30.
3. Attended preliminary meeting on the Yukon-Porcupine study area at Resources Building in College, November 2.

C. Research

1. ERDA project; continued writing text.
2. Began writing paper to give at the Northwest Mining Association annual meeting in Spokane next month.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: *FLK* ✓ Gilbert R. Eakins
Chief Mining Geologist

SUBJECT: Monthly Report
11/25 thru 12/23/76

A. Consultations

1. Had a phone conversation with Barry Smee with the Canadian Geological Survey. He proposed that they visit Alaska to become familiar with the geology and uranium potential and invited members of DGGGS to visit in Canada for the same purpose. It seems like a good idea. Bundtzen is sending them some of our reports.

B. Meetings

1. Attended the Northwest Mining Association annual meeting in Spokane December 3-4. Gave a paper on "Issues and Developments in Alaska, 1976."

C. Research

1. Revising ERDA report and maps. Ready for Frank to edit and start final typing.

D. Miscellaneous

1. Shipped scintillometers off for repairs.
2. Discussed our desire to retain the scintillometers and lab equipment on loan from ERDA with ERDA people.
3. Took 7 days annual leave.

MEMORANDUM

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: January 5, 1977

FILE NO:

TELEPHONE NO:

FROM: James R. Riehle
Geological Engineer

SUBJECT: Monthly Report: Report Period
9/25/76 to 10/25/76

- | A. | Consultations | Date | Topic | Results |
|------|-----------------------------|---|---|---|
| I. | State Agencies | | | |
| | Division of Lands | 10/7/76 | Seward water permits | Status of permits incorporated in Seward site evaluations. |
| | DFG | 10/18/76 | Seward wild-life resources | Comments incorporated in site evaluations. |
| II. | Federal | | | |
| | USGS (WRD) | 10/7/76 | Seward ground-water | USGS aided in compilation of groundwater data for site evaluations. |
| | Corps of Engineers | 10/7/76 | Seward engineering reports | Copy of Shannon & Wilson report on Seward land stability acquired. |
| | Corps of Engineers | 9/28/76 | Anchorage area geologic maps | Available maps described by phone. |
| III. | Other | | | |
| | Polaris Steel Ltd. B.C. | 10/5/76 | Literature on SE Alaska iron deposits | Letter compiling such available literature sent. |
| | Seward City Engineer | 10/13/76 | Data on Seward environment | Comments incorporated in Seward site evaluations. |
| | Seward sand/gravel operator | | | |
| B. | Conferences | | | |
| | 10/5-8/76 | Cherry Hill, N.J. | Assoc. Engineering Geologists, "OCS Developments" | Talk on OCS-related problems in Alaska given. |
| | 10/22-23/76 | Anchorage | Alaska Miners Assoc. Convention | |
| C. | Research | | | |
| | I. | Field trip to Seward and Vicinity, Oct. 11-14 (with Mark Howland), to inspect on foot 4 specific sites for geologic constraints report. Report completed and submitted for typing by October 25th. | | |
| | II. | Continuing literature search for other coastal sites in Gulf of Alaska - Lower Cook Inlet - Kodiak Island (including telephone conversations with Corps of Engineers regarding specific site engineering reports) | | |
| D. | Status of Reports | | | |
| | I. | Geologic Factors bearing on Development at Five Sites in Upper Resurrection Bay: literature search, site inspections, and writing all completed; submitted for typing. | | |

MEMORANDUM

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: January 5, 1977

FILE NO:

TELEPHONE NO:

FROM: James R. Riehle
Geological Engineer

SUBJECT: Monthly Report: Report Period
10/25/76 to 11/25/76

- | A. | Consultations | Date | Topic | Results |
|------|--|----------|---------------------------------------|--|
| I. | State Agencies | | | |
| | DNR, Planning Section | 11/7/76 | Site Evaluations | Discussed purpose of Reger-Riehle field project, English Bay to Kenai. |
| II. | Federal | | | |
| | Corps of Engineers | 11/7/76 | Shoreline changes, Gulf of Alaska | Nature of available data (nautical charts) defined. |
| III. | Other | | | |
| | Pat Wennekens, AEIDC | 11/7/76 | Coastal Engineering studies in Alaska | Possibility of forming an informal discussion group considered. |
| | Rick Wright, OCSEAP Project Officer, Juneau | 11/23/76 | Marine Hazards publication | Wright would be interested in helping us to write such a paper. |
| B. | Conferences | | | |
| | None | | | |
| C. | Research | | | |
| | I. Continuing compilation of literature for: | | | |
| | (a) seismic hazards publication (Reger, project head) | | | |
| | (b) shoreline emergence/submergence publication (Reger, project head) | | | |
| | (c) geologic hazards legislation in California and Colorado | | | |
| | II. Aerial photographs examined for site inspections at Yakutat. | | | |
| D. | Status of Reports | | | |
| | I. Geological Factors...Upper Resurrection Bay; typing completed, release date announced as December 17, 1976. | | | |

MEMORANDUM

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: January 5, 1977

FILE NO:

TELEPHONE NO:

FROM: James R. Riehle -
Geological Engineer

SUBJECT: Monthly Report: Report Period
11/25/76 to 12/25/76

- | A. Consultations | Date | Topic | Results |
|---|-----------|--|--|
| I. <u>State Agencies</u> | | | |
| DFG | 12/20/76 | Wildlife resources, Copy of wildlife resource Yakutat (and other inventory for Gulf of Alaska coastal sites) | acquired. |
| II. <u>Federal</u> | | | |
| Public Health | 12/15/76 | Well logs, Yakutat area | Copies of logs for 2 city wells (Yakutat) obtained. |
| USGS (WRD) | 12/6/76 | Inland Waters Hazards publication | Possibility of USGS cooperation or authorship discussed. |
| Corps of Engineers | 12/16/76 | Yakutat engineering reports | Copies of reports obtained for site evaluations. |
| III. <u>Other</u> | | | |
| Mayor of Yakutat, Pres. of Yakutat Village Corp., & Yakutat sand/gravel operator | 12/1-2/76 | | Comments to be incorporated in Yakutat site evaluations report. |
| Alaska Consultants | 12/21/76 | | Maps showing status of land ownership at Yakutat obtained. |
| Municipal, Building Safety Division | 12/29/76 | Local building codes and seismic hazards | Status of local codes and copy of UBC obtained (for seismic hazards legislation) |
| B. Conferences | | | |
| None | | | |
| C. Research | | | |
| I. Letters sent to various USGS/University researchers who are working on field projects, Gulf of Alaska - Cook Inlet - Kodiak Island Coastal Zones. Objective is to try to generate some cooperation (including data!) between DGG's 'Coastal Studies' (site evaluations) and these federally funded projects. | | | |
| II. Summary of available information on Geologic Hazards legislation in California and Colorado undertaken. Objective is to introduce the summary at the next meeting of AGS Environmental Committee, for use as a starting point for discussions of similar potential legislation in Alaska. | | | |
| III. Field trip to Yakutat and vicinity, for inspection of sites (Geological Constraints report): Nov. 29 - Dec. 3, 1976. | | | |

C. Research (cont.)

- IV. Aerial photo interpretation of coastal strip from Homer south to English Bay completed. Purpose: homework in anticipation of Reger-Riehle field trip, Kenai to English Bay, in May '77.

D. Status of Reports

- I. Yakutat sites evaluations report temporarily suspended, awaiting data from NOAA. Field work completed.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Richard D. Reger *RRR*
Geologist

SUBJECT: Monthly report
October 1976

- A. I was involved in the following consultations or meetings during the period September 24 through October 24, 1976:
1. (10/12) Discussed Goose Island gravel mining plan with Meg Hayes and Bill Copeland of ADL, Fairbanks.
 2. (10/14) Discussed proposal for report on geologic hazards of Fairbanks area with T.L. Pewé.
 3. (10/20) Discussed acquisition of aerial photographs of Augustine volcano.
 4. (10/21) Attended planning session for future ADGGS projects.
- B. I conducted research on the following projects during the period September 24 through October 24, 1976.
1. Evaluation of impact of three proposed natural gas pipelines on gravel resources (9/24).
 2. Aerial photograph interpretation of geology in 22 townships north of Mt. McKinley Park for ADL Planning and Research Section (Dave Hanson) (9/24 through 10/11).
 3. Literature research and map evaluation for ADL Planning and Research Section request on 600,000-acre military reserve NE of Eielson AFB (Big Delta and Circle quadrangles - 10/14).
 4. Planning and coordinating geologic hazards studies for overview report, volcanic hazards studies, and community reports. (10/12 through 10/19, 10/21 and 10/22.)
- C. Status of reports and publications.
1. Paper entitled "Preconstruction terrain evaluation for the Trans-Alaska Pipeline Project" by R.A. Kreig and R.D. Reger was published during late September in Geomorphology and Engineering, D.R. Coates, Ed., Dowden, Hutchinson, and Ross, Inc., p. 55-76.
 2. With Wyatt Gilbert and Jeff Kline completed geologic resources evaluation report entitled "Geologic resource evaluation of two areas in the central Alaska Range," for ADL Planning and Research Section.

3. Completed short evaluation of impact on gravel resources by three natural gas pipelines.
4. Waiting data input from T.L. Pówé for Big Delta A-4 open-file map. Plan 1-2 weeks of final field checking next summer.
5. Working on photo interpretation of Talkeetna-Little Willow Creek area for ADL Planning and Research Section.
6. Still need to complete photo interpretation of south Kenai lowlands for ADL Planning and Research Section.
7. Received draft proposal from T.L. Pówé to prepare geologic hazards report for Fairbanks area.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

FROM: *FL*
Richard Reger
Geologist

SUBJECT: Monthly Report for November 1976

A. I was involved in the following consultations or meetings during the period of October 25 through November 23, 1976:

1. (10/26) Attended glacier-volcanoe seminar by Roman Motyka (UAF) at UAF.
2. (11/2) Discussed volcanic hazards proposal for Mt. Wrangell with Carl Benson (UAF).
3. (11/9) Discussed Goose Island gravel mining plan with Meg Hayes of ADL, Fairbanks.
4. (11/9) Attended surging glacier seminar by Larry Mayo (USGS) at UAF.
5. (11/17) Discussed surficial mapping requirements with Mitch Henning and Division of Parks Planning Staff (Sandy Rabinowitch and Alan Merners).

B. I conducted research on the following projects during the period October 25 through November 23, 1976:

1. Aerial photograph interpretation of geology in 10 townships south of Talkeetna for ADL Planning and Research Section (Dave Hanson) (10/25 through 11/23).
2. Critique of ADL Delta Land Management report (11/1 through 11/5).
3. Planning and coordinating geologic hazards reports for Fairbanks, Mt. Augustine, Mt. Wrangell, Alaska volcanoes, and Alaska glaciers (10/29 through 11/23).
4. Planning surficial mapping program in Chugach State Park (10/23 through 11/23).

C. Status of Reports and Publications:

1. Completed photo interpretation of Talkeetna-Little Willow Creek area. Plotting of data nearly completed. Jeff Kline has completed his slope map of the area. Still need to make derivative maps and write short report evaluating the geologic resources. Anticipate meeting deadline of December 1.
2. Still need to complete photo interpretation of southern Kenai lowlands for ADL Planning and Research Section. Jeff Kline is about half way done with his slope map of the area.
3. Received proposals for volcanic hazards reports from Jurgen Kionlo (Mt. Augustine) and Carl Benson (Mt. Wrangell).
4. Waiting data input from T.L. Pewe for Big Delta A-4 open-file map.
5. Waiting for letter of authorization from Bert Schultz of the Nebraska Academy of Sciences and three updated figures from T.L. Pewe before reprinting INQUA guide book.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Richard D. Reger
Geologist

SUBJECT: Monthly report
11/26 thru 12/24/76

A. I was involved in the following consultations or meetings during the period of November 26 through December 16, 1976:

1. Attended Delta Agricultural Environmental Impact Meetings (12/1 and 12/7).
2. Attended seminar by Roman Motyka (UAF) on interactions of Mt. Katmai eruption and nearby glaciers with Cheri Carver (12/7).
3. Met with Roman Motyka, Ginny Ferrell and Cheri Carver re surficial geology of Katmai area (12/14).

B. I conducted the following research during the period November 26 through December 16, 1976:

1. Geologic resource and hazard evaluation of 10 townships south of Talkeetna for DNR Planning and Research Section (Dave Hanson) (11/26 through 12/16).
2. Coordinating geologic hazards reports preparation for Fairbanks area and glacial and volcanic hazards of Alaska.
3. Planning surficial mapping program for Chugach State Park (11/26 through 12/16).

C. Status of reports and publications:

1. The text of the Talkeetna-Kashwitna report is in the final stages of completion. Only the Geologic Materials Map remains to be drafted and a legend has to be added to the Geologic Map. I plan to open-file all of the maps plus a slope stability map as part of our mapping and geologic hazards appraisal of the upper Cook Inlet Basin.
2. Still need to complete photointerpretation of southern Kenai lowlands for DNR Planning and Research Section. I will begin this effort in mid-January. Jeff Kline has nearly completed his mapping of the slopes in the area.
3. Waiting data input from T.L. Pewé for Big Delta A-4 open-file map.
4. Waiting letter of authorization from Burt Schultz of Nebraska Academy of Sciences and three updated figures from T.L. Pewé before reprinting INQUA guidebook.
5. Waiting final drafting and permission from Alyeska Pipeline Service Company and then will proceed with editing and publication of the air-

Ross G. Schaff

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December 23, 1976

photo atlas of landforms in Alaska.

D. I am beginning my annual leave December 17, 1976.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Tom Bundtzen *TJB*
Mining Geologist

SUBJECT: Monthly report -
9/25 thru 10/25/76

Accomplishments:

- 1) Completed with Wyatt Gilbert Open-file Report 101 "Geology of the Northern Healy D-6 Quadrangle, Alaska." The resource information collected from this study will aid state and federal governments concerning future land decisions.
- 2) Completed inventory of rock samples collected during 1976 field season. Approximately 200 rock samples from the Richardson district, the Fortymile, and the Alaska Range have been sent to the lab for analyses. Thin section plugs were sent and one sample for age dating was selected.
- 3) Researched and prepared for talk at Alaska Miners Convention entitled "Geology and Mineral Deposits of Kantishna Hills."
- 4) Interviewed E. Mauer and Gil Monroe concerning mining history of Alaska Range.
- 5) Discussed Seward Peninsula economic geology with C. Hummel, USGS.
- 6) Talked with Alaska Division of Lands timber resources people about proposed Delta agriculture development.
- 7) Completed preliminary Fortymile report for Division of Policy & Planning.
- 8) Aided Eakins and Gilbert with township selectability of Eielson military reservation.
- 9) Discussed regional metamorphic stratigraphy with Florence Weber, Helen Foster, and Wyatt Gilbert.
- 10) Information discussions with D. Reger about preparation of Richardson district report.
- 11) Edited Craig A-2 quad report of G. Herreids.
- 12) Prepared short history of mining of Southeastern Alaska for R. Foley, Ketchikan Daily News.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

rl fw
FROM: Tom Bundtzen
Geologist

SUBJECT: Progress Report for November 1976

1. Gave a presentation at the Alaska Miners Convention on the Kantishna area. I believe it was well received. Also attended most of the sessions of the convention and found them informative.
2. Reger and myself completed modifications for the final Delta study draft. In addition to the resource and geologic section, I added a short summary of the Richardson District for their historical section. Previous resource summary had to be modified because of new mining developments in the central Alaska Range.
3. Consulted with D. Wadleigh of BLM on 40-mile study. Six hundred new claims have been staked in Robertson-Tok River areas. We may modify township selectivity map when all claim information is received on December 31st. Some of this may dovetail with the Delta study area.
4. Wrote up a modification list for ADGGS programs for Ross Schaff. Included in the recommendation "task force" were Jim Riehle, H. Potworowski, and Karen Emmel.
5. Reviewed Ford Courier performance and decided that the courier should be replaced either this winter or at the end of the first leasing period.
6. Have spent some time making final corrections to Herreid's manuscript. It should go to publications on January 1.
7. Sent 20 rocks to H. Potworowski for whole rock major oxide analyses.
8. Examined a sample of fine sand and silt from a brown bear hide for Fish and Wildlife Protection Office in an attempt to determine provenance of material. I have turned into a criminalologist.
9. Sent additional central Alaska Range data (already open filed) to C.C. Hawley for his mineral appraisal. I've also had useful correspondence with Ed McKavett and Bruce Reed on Alaska Range mineral deposit discussions. Interesting correlations on a regional scale may be possible. This may help us on next years field investigations for Division of Policy and Planning.
10. Sent Geological Assistant application form to promising field oriented New Zealand applicant.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Thomas K. Bundtzen
TKB Mining Geologist

SUBJECT: Monthly report -
11/26 thru 12/23/76

1. Attended Geoscience Conference in Whitehorse, Yukon Territory, perhaps the most useful and practical synopsis that I've gone to concerning "North Country" geology and mineral deposits.

I wrote a short summary for Ross Schaff and clipped a program summary to it.

2. I have sent about 20 copies of the Alaska Miner's Convention talk to interested people, several in the private sector as well as in industry.
3. Dr. Gilbert, Eakins, and myself assisted Dave Hansen, Division of Planning and Research within the ADL on land selections concerning non-selected Native Regional Deficiency Land Division input (Eakins, Gilbert, and Bundtzen) was an analysis of hard mineral potential within each proposed block. We will be closely monitoring these selections in the future.
4. Corresponded with Jim Fuksa, Joe Taylor, and E. Mauer (all mine operators) about mineral deposits.
5. Prepared a short summary of potential mineral activity and suggested statistics of future large scale mineral development area for Brad Tuck, Joint Federal State Land Use Planning Commission (Eakins, and Conwell assisting).
6. Will be cooperating informally with USGS on "whole oxide" analyses of Alaska Range samples.
7. The "Southeastern Log," a Ketchikan based monthly resource paper sent us copies of the November and December issues which used large portions of data and photos sent to them by Eakins and myself on southeastern mineral deposits. They were complimentary toward our Survey.
8. Worked on central Alaska Range data with Gilbert in preparation for April's talk.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

State of Alaska

DATE: December 16, 1976

FILE NO:

TELEPHONE NO:

SUBJECT: Geoscience Symposium in Whitehorse,
Y.T. (December 5 and 6, 1976)

RECEIVED

DEC 20 1976

Div. Of Geological Survey
Anchorage

78E
FROM: Thomas K. Bundtzen
Mining Geologist

This symposium was one of the better meetings an Alaskan geologist could attend. I have attached a copy of the technical sessions that were available during the 2 days that it was going on.

W.D. Sinclair and T.A. Morin summarized current Yukon Territory mining activity as consisting of three underground and two open pit mines producing \$228.5 million of gold, silver, lead, zinc, copper, asbestos, and coal. The Anvil lead-zinc accounted for \$150 million of this total followed by Clinton Creek (asbestos, \$32 million), Whitehorse copper (copper, silver, gold, \$16 million) and United Keno Hill (silver, lead, zinc, \$15 million). The Tantalus Butte Mine produced coal for heating and drying of concentrates at Anvil.

These hard-rock mines in the Yukon provide stable employment for about 1,400 men year round and comprise the major economic base of the Yukon Territory (followed by tourism).

Mineral exploration spent about \$16.5 million in 1975 and about 8,500 claims were staked differing from \$11.5 million and 13,000 claims respectively in 1974. Sinclair suggested that mining activity has reached a plateau and will undergo a natural slow growth as new deposits are found and old ones are exhausted.

Exploration highlights include the announcement of 28 million tons of lead-zinc ore developed at the "Grum" deposit in the Anvil district, of 16 million tons of drilled reserves of lead-zinc ore at Howards Pass, discovery of early Paleozoic Kimberlitic rocks in the McKenzie fold belt, the discovery of a large iron-phosphate deposit in the McKenzie district, and the discovery of five cobalt-uranium occurrences associated with breccia pipes intruding early Paleozoic rocks. (These deposits trend toward Alaska.)

D.K. Norris of the Canadian Geological Survey outlined the G.S.C.'s programs for the Yukon in 1977. Thirty-one projects were budgeted at \$1.1 million. Fifteen of these were active field projects including three in stratigraphy, four metallogenic or economic studies, two quaternary, two coal, one in geochemistry (uranium reconnaissance similar to what Gil Eakins has been doing) and two in paleontology. They appear to be a remarkable group of professionals who get a lot done with a minimum of tax dollars.

They appear to have the support of both government and industry although, as any agency, go through periodic budget cuts. Their prime products are the geologic map, and resource evaluations.

The last six talks comprised an excellent uranium symposium and reviewed the various modes of occurrences and mineralogy known about this energy-important commodity.

Ross G. Schaff

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December 16, 1976

Jim Barker and myself, plus three MRL people were the only people from Alaska that represented any type of a government agency. About 30 geologists from the Alaskan mineral industry attended.

Next year the symposium may attempt to solicit papers from Alaskan based geologists and may be titled "Alaska-Yukon Geoscience Symposium." Lets be ready for this one.

Enclosure

GEOSCIENCE FORUM
Whitehorse, Yukon
December 6-7, 1976

Registration: Lobby of Travelodge Dec. 5: 6:00-7:00 PM
Dec. 6: 9:30-10:30 AM

SUNDAY - Dec. 5

6:00-7:00 PM RECEPTION: Bonanza Room
Host - DIAND-EMR

MONDAY - Dec. 6

9:00-12:00 TECHNICAL SESSION I - Bonanza Room

9:00 AM: B.J. Trevor (Regional Director of Resources, DIAND, Whitehorse):
Welcoming Speech.

9:05 AM: H.D. Sinclair & J.A. Morin (DIAND, Whitehorse): Mineral
exploration highlights, Yukon, 1976.

9:30 AM: D.J. Tempelman-Kluit (GSC, Whitehorse): The Pelly-Cassiar
Platform and its adjacent tectonic elements -
Selwyn Basin and Yukon Crystalline Platform.

10:05 AM: *** COFFEE ***

10:20 AM: G. Morrison (Univ. of Western Ontario): Carbonate reef complexes
in the Lewes River Group of the Whitehorse area.

10:45 AM: E. Jensen (Archer, Cathro & Associates): Exploration leading to
the discovery of the Cash copper-molybdenum prospect,
Dawson Range.

11:10 AM: M. Htoon (Univ. of British Columbia): Geological aspects of
Clinton Creek asbestos, Yukon.

11:35 AM: P. Laznicka (Univ. of Manitoba): Mineralization in the Dolores
Creek area.

12:00-1:30 PM: *** LUNCH ***

1:30-4:30 PM: TECHNICAL SESSION II - Bonanza Room

1:30 PM: C.D. Lord (DIAND, Yellowknife): Exploration models in the Mackenzie
Mountains.

1:55 PM: F. Krause (Univ. of Calgary): Shelf to slope transition in the
Sekwi Formation.

2:40 PM: C.I. Godwin (Univ. of British Columbia): Kimberlitic diatremes and
dykes in the Mackenzie Fold Belt, Yukon and adjacent
Northwest Territories.

3:05 PM: *** COFFEE ***

- 3:20 PM: G.H. Leary (Amex): Lead-zinc in the Selwyn Basin.
- 3:45 PM: R.C. Carne (Univ. of British Columbia): Geology of the TOM deposit, MacMillan Pass area, Yukon.
- 4:10 PM: D.K. Norris (GSC, Calgary): GSC programs for the Yukon, 1977.
- 4:25 PM: W.D. Sinclair (DIAND, Whitehorse): DIAND programs for the Yukon, 1977.

6:30-7:30 PM: RECEPTION: Bonanza Room
Host: Trans North Turbo Air

8:00 PM: BANQUET: Bonanza Room
No-host

TUESDAY - Dec. 7

9:00-12:00 TECHNICAL SESSION III - Bonanza Room

- 9:00 AM: D.K. Norris (GSC, Calgary): Tectonic synthesis of the Cordillera north of the Tintina Fault.
- 9:35 AM: G. Delaney (Univ. of Western Ontario): Lower Proterozoic rocks in the Margaret-Fairchild Lakes area and their relationship to uranium-bearing breccias.
- 10:00 AM: *** COFFEE ***
- 10:15 AM: J.A. Morin (DIAND, Whitehorse): Uranium occurrences in breccia bodies in the Ogilvie-Mackenzie Mountains.
- 10:40 AM: I.R. Jonasson (GSC, Ottawa): Geochemistry of uranium - a review.
- 11:05 AM: I.R. Jonasson and M.D. Goodfellow (GSC, Ottawa): Guide to exploration for uranium in central Yukon using stream waters.
- 11:30 AM: B.W. Smee (GSC, Ottawa): Examination of some Cordilleran Tertiary uranium deposits.
- 11:45 AM: D.J. Tempelman-Kluit (GSC, Whitehorse): The possible significance of rare earth occurrences to exploration for uranium.
- 11:55 AM: R.R. McLeod (DIAND, Whitehorse): Closing remarks.
- 12:00-1:30 PM: *** LUNCH ***

Immediately following lunch there will be a taped talk and slide presentation of uranium minerals prepared by H.R. Steacy of The Geological Survey of Canada (Ottawa). The remainder of Tuesday afternoon the Bonanza Room will be available for informal discussion sessions for any interested delegates.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

RECEIVED

TO: Ross G. Schaff
State Geologist

DATE: October 28, 1976

NOV 5 1976

FILE NO:

Div. Of Geological Survey
Anchorage

TELEPHONE NO:

FROM: Wyatt G. Gilbert *WGG*
Geologist

SUBJECT: Monthly report -
9/25 through 10/24

The following is a summary of my activities during the period September 25 - October 24, 1976.

1. I gave a talk at a University Sierra Club meeting on October 5 on "Geology and Mineral Potential of the Haul Road Area North of the Yukon River."
2. 9/25 - 10/10 - I drafted and compiled information for AOF-101, "General Geology and Geochemistry of Healy D-5 and D-6 Quadrangles, Alaska." This report was completed October 10.
3. 9/25 - 10/11 - I assisted in compiling information for a geologic resource evaluation of two areas in the Central Alaska Range which was requested by the ADL Planning and Research Section. The report was completed October 11.
4. 10/13 - 10/14 - I assisted in a mineral resource evaluation of the military reservation northeast of Eielson Air Force Base at the request of the ADL Planning and Research Section.
5. Evaluated and submitted four samples for radiometric dating.
6. I attended an ADGGS Planning Meeting on October 22.
7. 10/12 - 10/24 - I spent most of my time preparing the geologic map which will accompany the AOF on the Healy D-1 and Fairbanks A-1 quadrangles.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Wyatt Gilbert
Mining Geologist

SUBJECT: Monthly report -
11/25 thru 12/26/76

Nov. 25 thru Nov. 31 - Drafted geologic map which will accompany the AOF on Healy D-1 and Fairbanks A-1 quadrangle.

Nov. 4 thru Nov. 28 - Attended the G.S.A. annual meeting where I met with University of Wisconsin personnel who will be cooperating with compilation of Healy quadrangle. I substituted for Ross at meeting of U.S. State Geologists. Also spent time in Menlo Park where I discussed our prospects and plans with USGS personnel. Specifically, I outlined our plans on the southern Alaska Range and Alaska Peninsula. I also met with several geologists who are working in the central Alaska Range. I also took several days annual leave.

Nov. 29 thru Dec. 1 - Completed geologic map on Healy D-1 and Fairbanks A-1 quadrangle.

Dec. 2 thru Dec. 7 - Assisted Environmental Impact Analysis group of the Governors Ad hoc Agricultural Committee for the Delta area.

Dec. 9 - Traveled to Anchorage to discuss possible state selected mineralized land with ADL.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: November 9, 1976

FILE NO:

TELEPHONE NO:

FROM: William M. Lyle
Petroleum Geologist

SUBJECT: Monthly Report, October

W.M. Lyle

Reports

The Kodiak-Sitkalidak-Sitkonak-Chirkof Report about 70% complete and measured sections and location maps are in final drafting. The project is scheduled for completion in late February.

The Lower Cook Inlet project is nearing completion with a completion and release date of January 1977.

An internal report was prepared on Dutch Harbor, the COST stratigraphic test and the Ocean Ranger.

Recommendations for land selection were forwarded on potential transportation corridors on the Alaska Peninsula.

Meetings

A progress and planning session was held in Anchorage with the Fairbanks geologists.

Tenneco Oil had a briefing with geologists of the State on oil and coal related papers.

Watts, Griffiths and McQuat -- briefing on uranium and coal related papers.

Mr. Fenster Moraker, Champion Oil Co., on Gulf of Alaska report.

Attended First Annual Mining Convention.

Other Projects

Regional correlation chart from the Gulf of Alaska to Alaska Peninsula.

MEMORANDUM

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: January 5, 1977

FILE NO:

TELEPHONE NO:

FROM: William M. Lyle
Petroleum Geologist

SUBJECT: Monthly Report: Report Period
12/1/76 to 12/31/76

William M. Lyle

| A. Consultations | Date | Topic | Results |
|-------------------|----------|------------------------------------|--|
| I. State Agencies | | | |
| N.R.P.R. Sec. (4) | December | Land Selection | Recommended Lands' & Corridors for selection |
| II. Federal | | | |
| U.S.G.S. | December | Lower Cook Inlet & Kodiak Projects | Complete report |
| III. Other | | | |
| None | | | |

B. Conferences, symposia, etc.
None

C. Research
Lower Cook Inlet Project

Data collected by Palmer, Wills, Egbert, Magoon and Bolm of the USGS and by Lyle and Morehouse has been processed and included in a report now being reviewed for a January 10 release.

The following objectives were accomplished: potential source rock samples were collected and analyzed: porosity and permeability of all samples analyzed are generally low owing to original tight packing and crushing of grains plus zeolitization. The average of 58 samples was 2.43 percent porosity and .032 permeability.

A dramatic and unexpected change would be necessary for good reservoirs to be present in the three mile limit on the westside of the Lower Cook Inlet. (Major faulting - oil saturated structure, etc.)

A visual kerogen assessment indicates a submature degree of basin maturity that is capable of oil and gas generation.

Moderately high extractable hydrocarbon (64 to 1,569 pp. ml.) was extracted from 69 samples (average 242 ppm.)

Based on these data the onshore area has very low potential and the three mile limit is low unless radically improved porosity can be found in the Jurassic age rocks or an unanticipated thickening of the Tertiary age rocks is encountered. Offshore stratigraphic information will be needed if these questions are to be answered.

C. Research (cont.)

Kodiak - Sitkanak - Sitkalidak - Chirkof Project

All data except geochemical stream samples has been processed and the report will be out in April.

Kodiak appears to have no onshore oil potential and very low potential in the three mile limit. Most of the rocks onshore have been metamorphosed.

The Miocene Narrow Cape Formation and the Oligocene Sitkanak Formation are considered possible potential reservoirs in the OCS area.

Areas adjacent to Chirkof and Tugidak Islands are considered to have moderate oil and gas potential.

D. Status of Reports & Publications

| Report Title | Transmitted to: | Date | Comments |
|--|-------------------------------------|------------------|-----------------------------------|
| 1. Physical Parameters of Potential Petroleum Reservoir and Source Rocks in the Kamishak-Inskin-Tuxedni Region, Lower Cook Inlet Alaska (open file report 104) | USGS, F. Larrison, State Geologists | 1/2/77 1/1/77 | Proof approved Release 1/10/77 |
| 2. Physical Parameters of Potential Tertiary Reservoirs & Source Rock in the Eastern Kodiak Island Region | U.S.G.S. | 12/2/76 | Will be completed 4/10/77 |

E. Miscellaneous

- I. Seven drilling rigs will reportedly be operating in the Gulf of Alaska by summer - Shell, Atlantic Richfield (drilling now), Exxon, Texaco, Gulf and the sun - Mobil Group.
- II. Excess gas from the MaCKENZIE area may be competitive with Alaska gas - 1980 if it goes to U.S.
- III. World Reserves: Oil 598.9 billion bbls. Gas 2,304 trillion cu. ft.
World Production: 57.2 M b/d
World Refining Capacity: 74,756,244 bbls. cured/day

MEMORANDUM

State of Alaska

TO: R.G. Schaff
State Geologist

DATE: Dec. 29, 1976

FILE NO:

TELEPHONE NO:

FROM: G.H. Pessel
Petroleum Geologist

SUBJECT: monthly report-Nov. & Dec. 1976

Consultations

I. State

| Agency | Date | Topic |
|----------------------|---------|---|
| 1. Division of Parks | Oct 29 | requirements for report on Chugach State Park |
| 2. Commissioner | Dec. 16 | effect of federal exploration in NPR-4 on state interests |

II. Federal

| | | |
|--------------------------------------|---------|------------------------------------|
| 1. USGS (Tailleur and Mull) | Nov 8 | exploration problems on NPR-4 |
| 2. Dept. of Commerce (Robert Downey) | Nov. 17 | oil and gas resources on D-2 lands |

III. Other

| | | |
|---------------------------------|--------|--|
| 1. Tenneco (Edwards and Murphy) | Nov. 3 | furnished literature and other information on North Slope geology. |
|---------------------------------|--------|--|

Conferences

1. Nov. 5, 6 attended Alaska Miner's Assoc. conference in Anchorage
2. Nov. 28-Dec. 3 worked in Menlo Park, Calif. with the USGS on NPR-4 exploration problems and on geology of Ambler and Survey Pass quadrangles.

Research and Publications

1. started work on a compilation of literature on the Sheanjek-Coleen Rivers area for a report on the mineral resources to Div. of Lands.
2. finished preparation of Ambler River and Survey Pass quadrangles geology maps for release as open file reports of the USGS; co-authored with Bill Brosge. Scheduled release: Jan 1.
3. finished final editing of North Slope subsurface geology publication with Tailleur of the USGS. Final release date still uncertain.

Miscellaneous

1. edited publication for Steve Hackett
2. participated in four meetings of the North Slope Stratigraphic Committee of the Alaska Geological Society for preparation of subsurface cross-section. These meetings will continue for several months.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: October 26, 1976

FILE NO:

TELEPHONE NO:

SUBJECT: Monthly report - October

RECEIVED

OCT 29 1976

Div. of Geological Survey
Anchorage

FROM: Steve W. Hackett
Geophysicist

A. Consultations:

I. State

| <u>Agency</u> | <u>Date</u> | <u>Topic</u> | <u>Results</u> |
|---------------------|-------------|--|--|
| 1. DGGGS (Schaff) | 10/5/76 | USGS meetings Menlo Park | Summarized AMRAP and RAMRAP project plans for Brooks Range. |
| 2. DGGGS (Lyle) | 10/12/76 | L. Cook Inlet Bristol Bay | Discussed 1976 field season accomplishments and 1977 field season proposals. |
| 3. DGGGS (McGee) | 10/13/76 | Talkeetna- Kashwitna | Discussed 1976 field season accomplishments - worked on interpretive maps. |
| 4. DOG (Baxandall) | 10/14/76 | Computer programs | Assistance in reducing geo- physical data and modelling programs. |
| II. <u>Federal</u> | | | |
| 1. USGS (Barnes) | 9/29/76 | Gravity data reduction | Problems defined. |
| 2. USGS (Tailleur) | 9/30/76 | AMRAP (Ambler River) | Summary of 1976 field season; tentative schedule for synthesis of data and finalized reports. |
| 3. USGS (Mull) | 10/1/76 | Brooks Range | Discussions of regional geology and tectonic style Brooks Range. |
| 4. USGS (Overshine) | 10/1/76 | USGS-DGGGS col- laboration cooperation (Brooks Range) | Summary of past, present and future projects. |
| 5. USGS (Grybeck) | 10/12/76 | Brooks Range geophysical | Schedule for compiling regional geophysical data. |

III. Contracts

| | | | |
|--------------------------------|---------|----------------|--|
| 1. Aeromagnetic contractors | 10/7/76 | Future surveys | Writing up regional survey needs, contract specifications and needs. |
|--------------------------------|---------|----------------|--|

B. Research:

1. Brooks Range geophysical
 - continue reducing gravity data acquired during 1976 field season.
 - spliced together LANDSTAT photos; beginning lineament study.
2. Talkeetna-Kashwitna-Susitna geophysical
 - continue reducing and processing gravity data acquired during 1976 field season.
 - preliminary aeromagnetic interpretation of study area.
3. N. Flank geophysical
 - continue setting up gravity data reduction system.
4. L. Cook Inlet-Tuxedni Bay geophysical
 - setting up gravity data reduction system.
 - integrating 1976 geologic data.
5. Geophysical computer library
 - working with John Baxandall to get data reduction and quantitative modelling programs operational.

C. Status of reports and publications:

1. Geologic Report 49 - drafting of figures and plates done; finalized text in F. Larsons hands for processing.
2. Ruby Ridge report - geophysical illustrations and text finished; presently helping W. Gilbert integrate geological and geophysical data.
3. Speculative Evolution of Shelikof Trough (Geologic Report 51) - finalized text and figures in F. Larsons hands for processing.
4. Provisional interpretation of geophysical data in Ambler River Survey Pass quadrangles - continue integrating geologic and geophysical data as they become available.

D. Miscellaneous:

1. Reviewing FY-76, -77, and -78 budgets for Resource Investigations planning session in Anchorage on October 23, 1976.
2. Assistance is needed to help reduce 1976 geophysical data in order to meet the proposed deadlines for DGGIS projects (see monthly report 6/9-6/24).

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Steve Hackett
Geophysicist

SUBJECT: Monthly report -
November and December

A. Consultations

| <u>1. State</u> | <u>Date</u> | <u>Topic</u> | <u>Results</u> |
|---------------------|----------------|--------------------------------------|--|
| 1. DGGG (Lyle) | 11/2 | Lower Cook Inlet Alaska Peninsula | Summarized 1976 field work Outlined tentative geophysical support for 1977 field season |
| 2. DGGG (McGee) | 11/2 | Upper Cook Inlet | Discussed Talkeetna-Kashwitna project, report and plate formats |
| 3. DGGG (Larson) | 11/4 | Annual report | Submitted material (geophys. info.) for annual report |
| 4. DGGG (Reger) | 11/11 | Talkeetna-Kashwitna | Discussed needs for project report and illustrations |
| 5. DGGG (Schaff) | 11/16 | Geological assistant | Approval to hire help (37.5 hrs/wk) in processing geophysical data |
| 6. DGGG (Baxandall) | 11/23 12/10 | Gravity data Request tapes | Assistance in reducing geophysical data on State computer. |

11. Federal

| | | | |
|-------------------------|-------|--------------------------------------|---|
| 1. USGS (Barnes) | 11/4 | Reducing DGGG gravity data | Outlined past history, problems and solutions of USGS-DGGG collaborative-cooperative geophysical programs |
| 2. USGS (Tailleur) | 11/28 | Base maps for W. Brooks Range | Received 1:63,360 base maps of Baird Mtns., Survey Pass, Ambler River, and Howard Pass quadrangles |
| 3. USGS (Grybeck) | 11/30 | Brooks Range Geophysical | Discussed geophysical compilation (magnetics) |
| 4. USGS (Isidore Zietz) | 12/10 | Magnetic compilation Brooks Range | Started discussions on compiling all magnetic data over Brooks Range 1:1,000,000 scale |

| <u>III. Contracts</u> | <u>Date</u> | <u>Topic</u> | <u>Results</u> |
|-----------------------------|-------------|----------------|--|
| 1. Aeromagnetic contractors | 12/23 | Future surveys | Writing up contract specif. needs and proposal to obtain magnetic coverage over 1:250,000 Wiseman quadrangle |

B. Research

1. Brooks Range geophysical.
 - submitted tabulated and plotted gravity data (1976 season) to D. Barnes, USGS, for processing. Ambler River map and data computer sheets delivered to Menlo Park on Dec. 3, 1976 via Irv Tailleux.
 - continue reducing gravity data acquired in other portions of Brooks Range during 1976 field season.
2. Talkeetna-Kashwitna-Susitna geophysical.
 - finished reducing and processing gravity data acquired during 1976 field season.
 - finished a provisional interpretation of aeromagnetic and gravity data over study area.
 - submitted finalized plates and short write-up for report to Reger on Dec. 1, 1976.
3. N. Flank geophysical.
 - need to reduce 1976 field data.
4. L. Cook Inlet-Tuxedni Bay geophysical.
 - need to reduce 1976 field data.
5. Alaska Peninsula geophysical.
 - waiting on obtaining data and agreements-decisions between Lyle (DGGS) and Barnes (USGS).
6. Geophysical computer library.
 - Henry Cole, half-time geological assistant, is currently trying to get quantitative geophysical modelling programs operational.
 - working with John Baxandall on gravity data reduction on State computer.

C. Status of reports and publications.

1. Geologic Report 49 - geologic plate needs a few minor additions (graphics for clarity) before all plates are finalized; final edited text in F. Larsons hands for processing.
2. Ruby Ridge report - geophysical illustrations and text finished and submitted to W. Gilbert for incorporation in final report.

3. Speculative Evolution of Shelikof Trough - (Geologic Report 51) -
waiting to be published and released.
4. Provisional Interpretation of geophysical data in Ambler River-Survey
Pass quadrangles - continue integrating geologic and geophysical data
as new data is processed.
5. Talkeetna-Kashwitna geophysical interpretation - would like to open-file
plates and short text during the first part of 1977.

D. Miscellaneous.

1. Attended the fall annual meeting of the American Geophysical Union held
December 6-10, in San Francisco. Many informative papers given on
exploration geophysics, geodesy and gravity, physical properties of rocks,
tectonophysics, and volcanology. A copy of the program and abstracts (in-
dicating what sessions I attended) is currently being circulated to DGGs
staff. Comments and questions about any of the sessions that I attended
~~is~~^{are} solicited.
2. Two new part-time geologic assistants were recently hired to assist in
reducing 1976 geophysical field data. Henry Cole will be working on adapting
quantitative geophysical modelling programs to the U of A and State computer
systems. Greg Laird is currently helping to reduce and process gravity data
in the Brooks Range as well as assisting in other DGGs geophysical projects.
3. Seven days of annual leave were taken during the month of December (13th-21st).

PUBLICATIONS

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Frank Larson
Publications Specialist

SUBJECT: Monthly report
9/25 thru 10/25/76

Progress for the month includes the following.

EDITORIAL

- 1) Continued edit of Eakins' ERDA report.
- 2) Completed paste-up of Geologic Report 51, "Short Notes."
- 3) Completed updated information circular 11, "List of DGGS Reports" in new format.
- 4) Completed new information circular (No. 22), "Progress and Prospects of Marine Mining in Alaska," by Conwell.
- 5) Continued getting open-file report system up to date.
- 6) Edited Geologic Report 49, "Gravity Survey of Beluga Basin," by Hackett.
- 7) Attended Tenth Annual AESA (Association of Earth Science Editors) Conference in Albuquerque, New Mexico.

TYPING

- 1) Completed composing text for Geologic Report 51.
- 2) Completed composing text for Geologic Report 49.
- 3) Began composing text for next Mines & Geology Bulletin.
- 4) Typed and folded maps for AOF-101, "Healy D-5 and D-6 quadrangles," by Gilbert and Bundtzen.
- 5) Folded numerous maps for other AOFs.
- 6) Miscellaneous xeroxing and collating.
- 7) Typed miscellaneous memos, letters.

CARTOGRAPHY

- 1) Completed ERDA report maps.
- 2) Completed art for Geologic Report 51.
- 3) Began art for Geologic Report 50, "Metamorphic rocks of Toklat-Teklanika River area," by Gilbert.
- 4) Continuing assorted quadrangle maps for Reger

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

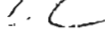
State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

FROM: Frank Larson 
Publications Specialist

SUBJECT: Progress Report for November 1976

Progress for the publications section for the month of November includes the following:

Editorial:

1. Mines and Geology Bulletin effort---compiling, writing, editing, proofing, paste-up.
2. Started annual report effort.
3. Made initial steps in obtaining bulk rate postal permit for the Mines and Geology Bulletin.
4. Communicated with several vendors and with Juneau Supply Division on three future reports: reprints of the "Coal" open-file report, the "Inqua" report of Arizona state University, and the printing of the satellite-photo map of Alaska.
5. Wrote numerous memos and letters.

Typing:

1. Generated updated information circular No. 21, "Open-File Reports."
2. Typed monthly reports.
3. Typed report for Bundtzen.
4. Typed memos and letters (myriad thereof).
5. Typeset captions for cartographers.
6. Typeset Mines and Geology Bulletin (plus more for next issue).
7. Typing for much miscellaneous data--rough drafts for speeches, reports, etc.

Cartography:

1. Started plate for geologic report 50, "Toklat-Teklanika River," by Gilbert.
2. Completed art for DGGs part of DNR annual report.
3. Completed two base maps for future Gilbert documentation.
4. Made additions to ERDA report maps.
5. Ran errands, etc.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Frank Larson *FL*
Publications Specialist

SUBJECT: Monthly report
11/26 thru 12/23/76

The following was accomplished during December 1976.

EDITORIAL:

- Pasted up Mines and Geology Bulletin.
- Edited AOF-103, "Lower Cook Inlet Oil Potential," by Lyle.
- Edited Special Report 8, "Salinity Study of Lower Cook Inlet," by McGee.
- Edited about half of input for DNR 1976 annual (at Division of Lands).
- Edited ERDA report of Eakins.

TYPING:

- Typed miscellaneous rough drafts.
- Typed Eakins speech for Northwest Mining Association Mining Convention.
- Completed M & G Bulletin on composer.
- Xeroxing.
- Mailed M & G Bulletin.
- Typed report for Conwell.
- Typed numerous letters and memos.
- Typed miscellaneous memos and tables for USBM.

CARTOGRAPHY:

- Colored map for Geologic Report 50 map (Gilbert).
- Worked on overlays for same.
- Went to Anchorage for processing of ERDA plates (Eakins).
- Gave talk to second-graders from local elementary school (Hunter).
- Consulted with geologists on future maps.
- Did log interpretations.

Ross G. Schaff

- 2 -

December 23, 1976

- Did drafting for Herendeen Bay report (Conwell).
- Copied numerous USGS open-file reports for files.

MINERAL LABORATORY

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Henry Potworowski *HSP*
Minerals Lab Supervisor

SUBJECT: Progress Report for October 1976

1. The Varian IM-6D module which had just arrived from the factory where it was in repair for 8 weeks, is being returned to its point of origin as it broke down again.
2. Mr. Donald R. Conrad, state surplus property officer from Anchorage, has examined all the DGG's excessed property and will send the necessary papers authorizing some items to be auctioned off and the balance destroyed.
3. The swirlaway scrubber has gone on bid as the request for bid waiver was denied. This is another delay.
4. Nicki Coursey has been assigned to AA work and is being briefed by Don Stein. She will be doing all Division samples, thus allowing Don to catch up and keep current with public samples.

MEMORANDUM

State of Alaska

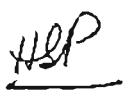
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

FROM: Henry Potworowski 
Minerals Lab Supervisor

SUBJECT: Progress report for November 1976

1. The Varian IM-6D module has arrived back to the lab from repairs at the factory. It continues to be only marginally operational as both the curve correct and zero base line cannot be adjusted as desired.
2. Excessed property has been divided into scrap and auctionable items. All items designated as saleable have been transferred from our warehouse to the Department of Highways on Peger Road where they may be inspected between November 29 and December 3. They will be auctioned off December 8. The scrapped items will be destroyed.
3. As all bids on the Swirlaway Scrubber (fume separator) have been higher than the original quotation, more paper work and delay in transferring funds is anticipated.
4. Since Nicki Coursey has begun to relieve Don Stein in atomic absorption work, 106 public samples representing 940 determinations have been done on public samples, reducing the backlog to 236 samples as of 11/10/76.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS


State of Alaska

TO: Ross Schaff
State Geologist
Anchorage

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Henry Potworowski 
Minerals Lab Supervisor
College

SUBJECT: Progress report for December 1976

1. The Varian IM-6D module has been shipped to Sunnyvale, California for repairs once again.
2. Excessed property was auctioned off early in December and the scrap destroyed as per request by Gene Waid, State Property Officer.
3. "Swirlaway Scrubber" for fume hood will be delivered by January 30, 1977 and authorization has been granted to have it installed by the University of Alaska maintenance crew.
4. Still awaiting building materials for Nam's new office at the Resources Building; when this is built all is ready for Nam to move to her new location.
5. Personnel problems seem to have relented slightly and will stay that way, hopefully.

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

WEEKLY LABORATORY WORK SUMMARY

for the week of 10-18 to 10-29

RECEIVED

NOV. 5 1976

Div. of Geological Survey
Anchorage

Public
Samples

Geochem.
Samples

Division*
Samples

Backlog from last week

236

Submitted during week

0

Completed during week

8

277
(277)**

0
(0)**

Cumulative completed since
January 1

398

5,456
(17,955)**

126
(651)**

Backlog at end of week

228

Remarks:

Signed

M. H. Johnson

November 1, 1976

* Division and other samples or special investigations not formally reported.

** Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

RECEIVED

NOV 18 1976

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

Div. Of Geological Survey
Anchorage

WEEKLY LABORATORY WORK SUMMARY

for the week of 11-1 to 11-15

| | Public Samples | Geochem. Samples | Division* Samples |
|---|-------------------|---------------------|----------------------|
| Backlog from last week | 228 | | |
| Submitted during week | 66 | | |
| Completed during week | 71 | 297 (300)** | 0 (0)** |
| Cumulative completed since January 1 | 461 | 5,753 (18,255)** | 126 (651)** |
| Backlog at end of week | 223 | | |

Remarks:

Signed Mona Robinson

November 16, 1976

- * Division and other samples on special investigations not formally reported.
- ** Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

WEEKLY LABORATORY WORK SUMMARY

for the week of 11-16 to 11-30

RECEIVED

DEC 6 1976

Div. Of Geological Survey
Anchorage

| | Public Samples | Geochem. Samples | Division* Samples |
|---|-------------------|---------------------|----------------------|
| Backlog from last week | 223 | | |
| Submitted during week | 0 | | |
| Completed during week | 20 | 559 (5,490)** | 0 (0)** |
| Cumulative completed since January 1 | 481 | 6,312 (23,745)** | 126 (651)** |
| Backlog at end of week | 203 | | |

Remarks:

Signed Mona Gulinson Date November 30, 1976

*Division and other samples or special investigations not formally reported.
**Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

WEEKLY LABORATORY WORK SUMMARY

for the week of 12-1 to 12-15

| | Public Samples | Geochem. Samples | Division* Samples |
|---|-------------------|---------------------|----------------------|
| Backlog from last week | 203 | | |
| Submitted during week | 16 | | |
| Completed during week | 1 | 860 (5,773)** | 4 (13)** |
| Cumulative completed since January 1 | 482 | 7,172 (29,518)** | 130 (664)** |
| Backlog at end of week | 218 | | |

Remarks:

Signed Wm. B. Johnson Date December 15, 1976

*Division and other samples or special investigations not formally reported.
 **Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

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WEEKLY LABORATORY WORK SUMMARY

JAN 6 1977

for the week of 12-16 to 12-31

Div. Of Geological Survey
Anchorage

| | Public Samples | Geochem. Samples | Division* Samples |
|---|-------------------|---------------------|----------------------|
| Backlog from last week | 218 | | |
| Submitted during week | 56 | | |
| Completed during week | 8 | 92 (1,104)** | 0 (0)** |
| Cumulative completed since January 1 | 490 | 7,264 (30,622)** | 130 (664)** |
| Backlog at end of week | 266 | | |

Remarks:

Signed Mona Robinson Date January 3, 1977

*Division and other samples or special investigations not formally reported.
**Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

REGULATION & INFORMATION

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: October 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell
Mining Engineer *on*

SUBJECT: Monthly report
9/25 to 10/25/76

1. Attended the American Mining Congress convention in Denver, Colorado September 26 through 29 inclusive. The two best nontechnical addresses were by: J.P. Grahek, physician-general practice, mayor of Ely, Minnesota, and Thomas Rees, U.S. Representative from California. Dr. Grahek explained how first E.P.A. shut the mining down, and then the conservation society prevailed to close the tourist industry, thereby depriving a town that had a stable economy of its economic base and this was done with tax dollars. Congressman Rees explained that the U.S. did not have an energy policy and the prospects for a policy were not good. I felt one of the best technical papers was given by Dr. W.D. Carter, U.S. Geol. Survey on remote sensing. All of the papers on mineral exploration by satellite data were very good.

2. Took one week vacation.

3. Talked with Paul Dirken, appraiser, Lou Sturgis of Highways, Juneau, and Dan Egan of Alaska Gold on the new highway location at Fox, Alaska. I will probably be more involved in this project next month.

4. Reviewed several documents for Division of Lands.

5. Research

- (a) Sampled the heads, concentrates and tailings on the Fox mill. The mill is concentrating antimony ores. The recovery is about 60 percent.
- (b) Completed an experiment on trying to isolate the uranium mineral at the Little Mountain uranium prospect. Converted the limonite and goethite to magnetic. The uranium was contained in the magnetic fraction.
- (c) Reviewed Ginnies coal maps of the Anchorage quadrangle.
- (d) Joined U.S.B.M. and MRL in examining the Broad Pass coal field.

6. Mine inspections - Usibelli Coal Mine.

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

State of Alaska

TO: Ross G. Schaff
State Geologist

DATE: November 26, 1976

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell *CNC*
Mining Engineer

SUBJECT: Progress report for November 1976

A. Problems areas

1. One problem area appears to be Ona McBride. At this stage the problem maybe more anticipated than real.
 - (a) Ona's office space has been relocated and the office moved. Because of the relocation, it appears that Ona will be primarily working for the Division of Lands. The work for DGGs will suffer, particularly work that has been planned by John Baxandall using the microfiche system.
 - (b) A question of pay grades for the information specialists.
2. Another problem relates to Joe Usibelli's request to reinstate the requirement for certified personnel - 11 AAC 44.014 - with changes to conform to Federal requirements, title 30, chapter 1, subpart B, #75.100, #77.100, certified persons. I believe this change should be made.

B. Consultations

1. Several with people requesting information.
2. Mike Rob, Alaska Energy Commission, on coals in Alaska.
3. Paul Dirksen, appraiser for state, on Fox Highway.
4. Dan Eagen of Alaska Gold on Fox Highway relocation.
5. Jan Rupert and others on the state coal potential.

C. Research

1. Recovery determination on concentration at Fox. Recovery was only about 60 percent of antimony (stibnite).
2. Spent some time trying to determine the uranium mineral in the McKinley prospect, no luck. Received an unexpected telephone call from John Dooley, USGS, offering assistance. Sent him samples.

D. Status of reports and publications

1. Reviewed and requested Don McGee to review Ginny Ferrell's work on coal in the Anchorage quadrangle.
2. Report for Western Miner on mining in Alaska was published in October issue.

Ross G. Schaff

- 2 -

November 26, 1976

3. Discussed with Don Triplehorn the Chignik-Herenden report. Will probably have a rough draft typed next month.

4. Prepared a rough draft of the annual report for the I and R section.

E. Miscellaneous

1. Pat Dieterich resigned effective November 26, 1976.

MEMORANDUM

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff
State Geologist

DATE: December 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell
Mining Engineer

SUBJECT: Monthly report-
11/26 thru 12/23/76

Problem areas:

BLM is promulgating new rules under the BLM Organic Act in regard to the filing of mining claims. It will be necessary to study the new rules and the affect on our mine claiming filing system.

We are still having trouble obtaining assays from the lab.

A. Consultations:

1. State

12-7-76 - discussed the evaluation of the potential gold placer on the Dawson bench with Gary Vancil of the Attorney General office and reviewed the submittal by Alaska Gold.

2. Other

12-7-76 - telephone conversation with Paul Dirksen on the submittal by Alaska Gold. It will be necessary to obtain more information from Alaska Gold.

B. Conferences:

Attended the Northwest Miners Conference in Spokane on December 3 and 4. There were several excellent papers on mineral economics.

C. Research:

1. Dr. Dooley, of the USGS in Denver, called by telephone to inform me that he had successfully made radioautographs of the uranium in the McKinley uranium deposit samples.
2. Completed screen analyses and heavy liquid separations on a low grade antimony concentrate, and I am now waiting on chemical analyses from our lab. The next steps will be a regrind, followed by froth flotation.
3. Literature research on the Susitna basin and coals.

D. Status of reports and publications:

1. Chignik-Herenden Bay coal report figures are being drafted.
2. Ginny is working on Anchorage quadrangle coal report.

E. Miscellaneous:

1. Completed monthly coal mine inspection of Usibelli Coal Mine.
2. Reviewed several coal prospecting permits for Division of Lands.
3. Approved several applications for acceptance of assessment work on state lands.

DIVISION OF GEOLOGICAL SURVEY
MONTHLY CENTRAL RECORDING WORK SUMMARY
For Period Ending October 25, 1976

| | Claim Loc. Notices | | Affidavits Of Labor | | Deeds | Misc. | Total | |
|--------------------------------------|-----------------------|--------|------------------------|--------|-------|-------|--------|--------|
| | Doc. | Clms. | Doc. | Clms. | Doc. | Doc. | Doc. | Clms. |
| Backlog | 53 | 53 | 30 | 326 | 33 | 20 | 136 | 379 |
| Received | 3,784 | 3,784 | 289 | 3,370 | 21 | 97 | 4,191 | 7,154 |
| Processed | 3,409 | 3,409 | 298 | 3,605 | 15 | 104 | 3,826 | 7,014 |
| backlog | 428 | 428 | 21 | 91 | 39 | 13 | 501 | 519 |
| Cumulative received since Jan. 1 | 10,042 | 10,042 | 690 | 7,436 | 221 | 1,431 | 12,384 | 17,478 |
| Cumulative processed since Jan. 1 | 10,946 | 10,946 | 923 | 12,333 | 278 | 1,468 | 13,615 | 23,279 |

REMARKS: Pat Dieterich
Carole Stevenson
Mildred Brown

Processed a total of 3,826 documents for the month. Up-dated Microfische system. We are using the microfische on a regular basis now and find the system to be well worth-while. Mr. Christian Teutch from BLM has been in doing research for most of the month. M.I.R.L. has a person in copying the Open-File reports. U.S.G.S. in Menlo Park has expressed an interest in obtaining our complete Microfische system.

Visitors - 70

Aeroxing - 425

Signed

Patricia Dieterich

ACTIVITY REPORT

Mining Information Section

Requests answered:

Mail

10

Telephone

33

Distribution:

Information
Circulars

15

Reports

Geologic

Geochemical

Miscellaneous

Xeroxing 425 pages

Number of visitors 0

DIVISION OF GEOLOGICAL SURVEY
MONTHLY CENTRAL RECORDING WORK SUMMARY
For Period Ending November 26, 1976

| | Claim Loc. Notices | | Affidavits Of Labor | | Deeds | Misc. | Total | |
|--------------------------------------|-----------------------|--------|------------------------|--------|-------|-------|--------|--------|
| | Doc. | Clms. | Doc. | Clms. | Doc. | Doc. | Doc. | Clms. |
| Backlog | 428 | 428 | 21 | 91 | 39 | 13 | 501 | 519 |
| Received | 2,397 | 2,397 | 366 | 4,933 | 41 | 314 | 3,118 | 7,330 |
| Processed | 445 | 445 | 109 | 1,654 | 41 | 6 | 601 | 2,099 |
| Backlog | 2,380 | 2,380 | 278 | 3,370 | 39 | 321 | 3,018 | 5,750 |
| Cumulative received since Jan. 1 | 12,439 | 12,439 | 1,056 | 12,369 | 262 | 1,745 | 15,502 | 24,808 |
| Cumulative processed since Jan. 1 | 11,391 | 11,391 | 1,032 | 13,987 | 319 | 1,474 | 14,216 | 25,378 |

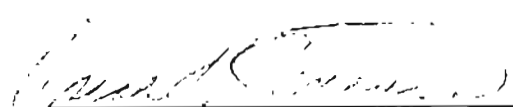
REMARKS: Carole Stevenson
Mildred Brown
Pat Dieterich

Processed 601 claims for the month. Have received 3,118 documents for the month. We are trying to convert our document files over to kardex order so that we may start microfilming in Feb. or March. We have a large backlog of documents to process due to spending so much time on the files.

Pat Dieterich has accepted another State job and will be leaving today. Mildred Brown is coming back to the Survey to take her position.

Visitors - 74

Xeroxing - 1,098 copies

Signed 

ACTIVITY REPORT

Mining Information Section

Requests answered:

Mail

5

Telephone

30

Distribution:

Information
Circulars

100

Reports

Geologic

Geochemical

Miscellaneous

Xeroxing 1,098 pages

Number of visitors 74

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DIVISION OF GEOLOGICAL SURVEY

Div. Of Geological Survey
Anchorage

MONTHLY CENTRAL RECORDING WORK SUMMARY

For Period Ending 12-23-76

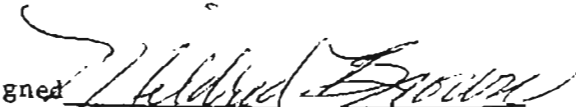
| | Claim Loc. Notices | | Affidavits of Labor | | Deeds | Misc. | Total | |
|--------------------------------------|-----------------------|--------|------------------------|--------|-------|-------|--------|--------|
| | Doc. | Clms | Doc. | Clms | Doc. | Doc. | Doc. | Clms |
| Backlog | 2,380 | 2,380 | 278 | 3,370 | 39 | 321 | 3,018 | 5,750 |
| Received | 836 | 836 | 611 | 16,786 | 22 | 19 | 1,488 | 17,622 |
| Processed | 3,116 | 3,116 | 757 | 18,013 | 24 | 318 | 4,215 | 21,129 |
| Backlog | 100 | 100 | 132 | 2,143 | 37 | 22 | 291 | 2,243 |
| Cumulative Received Since Jan. 1 | 13,275 | 13,275 | 1,667 | 29,155 | 284 | 1,764 | 16,990 | 42,430 |
| Cumulative Processed Since Jan. 1 | 14,507 | 14,507 | 1,789 | 32,000 | 343 | 1,792 | 18,431 | 46,507 |

REMARKS:

Processed a total of 4,215 documents for the month which included 3,116 new mining claims and 757 Affidavits of Annual Labor, plus 342 Deeds and miscellaneous documents. Assisted 75 visitors with research of mining areas, geological literature and some unpublished openfile reports.

Prepared 79 pages of computer coding forms for Data Processing for inclusion in our Minfile System; filing of documents and as time permitted resorted more of our files into Kardex order to prepare for microfilming. Assisted Roberta and Mona with Mines Bulletin one day. Carole left for vacation on December 17 and will be gone until January 17.

Signed


 Mining Information Specialist

ACTIVITY REPORT

Mining Information Section

Requests answered:

Mail

Telephone

24

Distribution:

Information
Circulars

26

Reports

1 Geologic

1 Geochemical

 Miscellaneous

Xeroxing 864 pages

Number of visitors 75

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DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

Div. of Geological Survey
Anchorage

Monthly Work Report

Month of October 1976

| | Fairbanks | Anchorage | Juneau | Ketchikan | Total |
|--|-----------|-----------|--------|-----------|-------|
| 1. Visitors | 79 | 79 | 10 | 7 | 175 |
| 2. Annual reports | 17 | 10 | 1 | | 28 |
| 3. Miscellaneous papers | 5 | 4 | 1 | | 10 |
| 4. Miscellaneous publications | 43 | 7 | 2 | | 52 |
| 5. Requests for information received by mail | 92 | 8 | 17 | | 117 |
| 6. Requests for information received by phone | 6 | 36 | 8 | 3 | 53 |
| 7. Rock samples | 28 | | | | 28 |
| 8. Bibliographies | 11 | 16 | | | 27 |
| 9. Geologic & Geochem reports | 77 | 40 | 2 | 2 | 121 |
| 10. Information circulars | 134 | 50 | 26 | 3 | 213 |
| 11. Laboratory notes & reports | 1 | 12 | | | 13 |
| 12. Aeromag maps | 180 | 42 | | | 222 |
| 13. Special reports | 53 | | 4 | | 57 |
| 14. Open file listing | | | | | |
| 15. Letters | 4 | | | | 4 |
| 16. Monthly Mines Bulletin | 12 | | | | 12 |
| 17. AOF's | 94 | | | | 94 |
| 18. Xeroxing | 28 | | 200 | | 228 |
| 19. | | | | | |
| 20. | | | | | |

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NOV 29 1976

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS *Div. Of Geological Survey*
Anchorage

Monthly Work ReportMonth of November 1976

| | Fairbanks | Anchorage | Juneau | Ketchikan | Total |
|--|-----------|-----------|--------|-----------|-------|
| 1. Visitors | 84 | 51 | 10 | 24 | 169 |
| 2. Annual reports | 4 | 1 | 0 | 3 | 8 |
| 3. Miscellaneous papers | 4 | 6 | 7 | 4 | 21 |
| 4. Miscellaneous publications | 15 | 2 | 0 | 4 | 21 |
| 5. Requests for information received by mail | 49 | 9 | 20 | 2 | 80 |
| 6. Requests for information received by phone | 5 | 10 | 7 | 9 | 31 |
| 7. Rock samples | 6 | 0 | 0 | 0 | 6 |
| 8. Bibliographies | 0 | 0 | 0 | 0 | 0 |
| 9. Geologic & Geochem reports | 24 | 30 | 2 | 2 | 58 |
| 10. Information circulars | 90 | 117 | 31 | 38 | 276 |
| 11. Laboratory notes & reports | 0 | 0 | 0 | 0 | 0 |
| 12. Aeromag maps | 30 | 0 | 0 | 15 | 45 |
| 13. Special reports | 24 | 0 | 0 | 0 | 24 |
| 14. Open file listing | 0 | 0 | 0 | 0 | 0 |
| 15. Letters | 0 | 0 | 0 | 0 | 0 |
| 16. Monthly Mines Bulletin | 13 | 0 | 0 | 10 | 23 |
| 17. Xeroxing | 0 | 0 | 33 | 0 | 33 |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

Monthly Work Report

Month of December 1976

| | Fairbanks | Anchorage | Juneau | Ketchikan | Total |
|--|-----------|-----------|--------|-----------|-------|
| 1. Visitors | 8 | 66 | 11 | 30 | 115 |
| 2. Annual reports | 24 | 2 | 12 | 0 | 38 |
| 3. Miscellaneous papers | 1 | 6 | 11 | 0 | 18 |
| 4. Miscellaneous publications | 18 | 21 | 22 | 4 | 65 |
| 5. Requests for information received by mail | 27 | 13 | 61 | 4 | 105 |
| 6. Requests for information received by phone | 5 | 16 | 12 | 15 | 48 |
| 7. Rock samples | 4 | 0 | 0 | 0 | 4 |
| 8. Bibliographies | 0 | 5 | 3 | 0 | 8 |
| 9. Geologic & Geochem reports | 53 | 14 | 12 | 0 | 79 |
| 10. Information circulars | 90 | 146 | 111 | 7 | 354 |
| 11. Laboratory notes & reports | 36 | 0 | 3 | 0 | 39 |
| 12. Aeromag maps | 4 | 26 | 15 | 0 | 45 |
| 13. Special reports | 21 | 5 | 0 | 0 | 26 |
| 14. Open file listing | 0 | 0 | 0 | 0 | 0 |
| 15. Letters | 3 | 0 | 0 | 0 | 3 |
| 16. Monthly Mines Bulletin | 2,719 | 0 | 0 | 2 | 2,721 |
| 17. Xeroxing | 15 | 0 | 215 | 0 | 230 |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |