#### Public-data File 86-38

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS MONTHLY REPORTS FOR JULY, AUGUST, AND SEPTEMBER 1976

Вy

Staff

Alaska Division of Geological and Geophysical Surveys

June 1986

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794 University Avenue, Basement Fairbanks, Alaska 99709

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: September 24, 1976

FILE NO:

TELEPHONE NO:

FROM: Steve Hackett Geophysicist SUBJECT: Monthly Report - September

### A. Consultations:

ι.	Sta	ite Agenc	:y	Date	Topic	Results
	١.	DGGS	(Schaff)	9/6/76	Brooks Range geophysics	Summary report of 1976 field work.
	2.	DGGS	(Eakins)	9/20/76	Brooks Range	Discussions of geophys. field work.
	3.	DGGS	(Lyle)	9/21/76	L. Cook Inlet	Rock samples for physical property determination.
	4.	DGGS	(Larson)	9/22/76	Publications	Final editing on paper in Geologic Report 50.
11,		deral USGS	(Tailleur)	8/13 - 8/31/76	Brooks Range geology	Orientation, discussions and observation of geologic terranes in Ambler River, Survey Pass, Baird Mtns., Havard Pass, and Mishequk quadrangles. Geophysical data acquition (see summary report to Schaff (9/6/76).
	2.	USGS	(Mull)	8/13 - 8/20/76	Brooks Range geology	Observations and discussion of tectonic style in west-central Brooks Range (see summary report to Schaff 9/6/76).
	3.	USGS	(Grybeck)	8/13 - 8/17/76	Brooks Range geology	Observations and discussions of mineral deposits in west-central Brooks Range.
	4.	usgs	(Grybeck)	9/21/76	Brooks Range geophys.	Outlining geophysical projects and synthesis deadlines.

III. Contracts

Agency
1. Geometrics

Date Topic Results
9/30/76

Brooks Range Releasing Ambler River
aeromagnetic A-1, A-2, A-3, B-1, B-2,
data

B-3, C-1, C-2, C-3, D-1,
D-2, D-3, and Shungnak
D-1, D-2, D-3 aeromagnetic
maps (1:63,360 scale).

#### B. Research

- 1. Field work west-central Brooks Range \*see memo to Schaff 9/6/76.
- 2. Brooks Range geophysical.
  - -Finished provisional aeromagnetic interpretation of Survey Pass quadrangle.
  - -Gravity data reduction (Ambler River, Survey Pass, Baird Mtns., Shungnak, and Selawik quadrangles) in progress.
  - -Acquired 1:250,000 scale LANDSTAT photos; beginning structural interpretations.
- 3. N. Flank geophysical.
  - ~Gravity data reduction (Healy quadrangle) in progress.
- 4. Kashwitna-Susitna geophysical.
  - -Gravity data reduction (Talkeetna A-1, B-1); Talkeetna Mtns. A-6, B-6; Tyonek D-1, Anchorage D-8) in progress.
- 5. Geophysical computer library.
  - -Still outlining requirements for setting up quantitative interpretations and inquiring about available programs.
- 6. FY-78.
  - ~Submitted short note to Schaff outlining recommendation for future geophysical programs.
- C. Status of reports and publications
  - 1. AOF-100 available and released to public in September.
  - 2. Ruby Ridge geologic report working on finalizing aeromagnetic profile.
  - 3. Geologic report 49 final draft is typed, final editing of figures and plates in progress.
  - 4. Speculative evolution of Shelikof Trough text is finalized, drafting of figures needs to be completed.

5. Provisional interpretations of geophysical data in Ambler River, Survey Pass quadrangles - integrating geologic information and structural interpretations of LANDSTAT photo mosaic.

#### D. Miscellaneous

- 1. USGS (Alaskan Branch & Theoretical Geophysical Branch) will provide help and facilities to expedite processing and reduction gravity data acquired during 1976 field season.
- 2. John Baxandall, DNR System Analyst, will assist in adapting geophysical modelling and data reduction programs. A meeting is scheduled in mid-October to discuss needs and requirements.

## State of Alaska

Ross G. Schaff TO: State Geologist

DATE: September 3, 1976

FILE NO:

TELEPHONE NO:

William M. Lyle FROM: Petroleum Geologist

wm. Lyle

Monthly Geological Report SUBJECT:

### Kodiak - Sitkanak, Sitkalidak & Chirikof Island Report

This report is on schedule and most of the data has been processed; porosity, permeability, parts per million hydrocarbon and basin maturity, etc. We have a target date of early Spring 1977. Interpretation of these results are in progress. Geochem samples are in Fairbanks for processing.

### Lower Cook Inlet

A report is currently being prepared and is nearly on schedule. Most of the ran data has been received and drafting is in progress.

#### lcy Bay

Five potential development sites were visited and examined. A report on each of these areas will be finalized this week.

#### Miscellaneous

Numerous calls have been handled regarding water well data, access maps, Open File 50, topographic maps, gravel studies, etc.

The state mineral collection was removed from the lands building and temporarily placed in storage.

TO:

# **MEMORANDUM**

Ross G. Schaff State Geologist State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

DATE:

FILE NO:

TELEPHONE NO:

FROM: W. M. Lyle

Petroleum Geologist

SUBJECT:

Monthly Report

#### Kodiak-Lower Cook Inlet Project

All samples have been sent out for processing. Work has been curtailed on this project until other projects with a higher priority are completed.

### Lower Cook Inlet Draft Environmental Impact Statement Review

Work is in progress to review this statement.

### Cape Chiniak

Two days were spent on this site and a report is being prepared. This should be ready in a week or ten days.

#### Oil Map

I assisted the other petroleum geologists in DGGS and DOG in preparing a lease evaluation map on 50,000 acre blocks throughout the State.

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: July 28, 1976

FILE NO:

TELEPHONE NO:

FL for FROM: Wyatt Gilbert Geologist

SUBJECT: Monthly report, July 1976

The following is a brief outline of my activities for May 25-July 25. A more complete summary of field results will be submitted at end of August.

### May 25-June 1

- 1. Finished revised draft of Ruby Ridge report (southwestern Brooks Range).
- 2. Organized field program.

#### June 2-13

1. Mapped bedrock geology of Healy D-6 quadrangle and collected 75 stream sediment samples.

#### June 16-22

1. Examined Eielson deposits and surrounding geology with Tom Bundtzen.

#### June 23-29

1. Mapped metamorphic sedimentary rocks in the Mt. Sheldon area and identified the trace of the Hine Creek fault.

#### June 30-July 6

1. For office, met with Ross Schaff July 6 in informal planning session.

#### July 7-12

1. Completed mapping of Healy D-6 quadrangle with Dick Reger and collected 50 additional stream sediment samples. Completed examination of townships identified by Division of Lands.

#### July 14-25

1. Completed bedrock mapping and stream sediment samples (199 samples) of Healy D-1 and Fairbanks A-1 quadrangles with Dick Reger. Completed examination of metallic mineral and coal resources. Showed State Geologist and Chief Mining Geologist field area on July 21.

Field program is on schedule and yielding important new information. Central Alaska Range field program should be complete by August 31.

02-001B (REV. 08-73)

# **MEMORANDUM**

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

Ross G. Schaff State Geologist DATE:

September 8, 1976

FILE NO:

TELEPHONE NO:

FROM: Wyatt G. Gilbert 'LT-Mining Geologist

SUBJECT:

Monthly Report - August

July 26 - In office.

July 27 - Aug. 5 - Completed mineral resource evaluation of North Flank of central Alaska Range, assisted by Tom Bundtzen.

Aug. 6 - 8 - In Fairbanks.

Aug. 9 - 25 - Completed geologic mapping along Hines Creek fault in Healy

The 1976 field season is now over and southe completion of essentially all geologic field work along the north flank of the central Alaska Range. The new geologic information gained about Alaska Range tectonics and North Flank mineralization is particularly informative and exciting. During the next weak or two ( will prepare a more detailed status report on the Division's central Alaska Range program.

FROM:

## MEMORANDUM

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: September 24, 1976

FILE NO:

TELEPHONE NO:

Wyatt Gilbert WC Mining Geologist

SUBJECT.

Monthly report -September 1976

### August 26 - September 12

- 1. Organized rock samples and field gear.
- 2. Completed moving to new office.
- 3. Prepared thin section chips.
- 4. Compiled bedrock geology of Healy D-6 quadrangle.
- 5. Worked on draft of Mt. Galen volcanic paper.
- 6. Assisted Ross G. Schaff with 1978 budget.
- 7. Discussed Calico Creek geology with C. Nye (University of Alaska).
- 8. Discussed 1976 field season and future cooperation with Chuck Hawley.
- 9. Commented on minerals section of Draft Tongass National Forest Guide.

### September 13 - 25

- 1. Began to analyse geochemical data from Healy 0-5 and D-6 quadrangles.
- Worked on Alaska Range resource evaluation requests from ADL Planning Section.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

RECEIVED

TO: Ross G. Schaff State Geologist DATE: July 30, 1976

FILE NO:

TELEPHONE NO:

Div. Of Centagical Survey Andhard de

FROM: Richard D. Reger PUR Geologist

SUBJECT:

Monthly Report, July

### A. Consultations

### I. State

	Agency	Date	Topic	Results
1	Div. of Parks (Doug Reger)	6/29	Results of Delta Junction field work	Found 1 site on state land
2	. Div. of Parks (Chuck Holmes)	7/28	Results of Alaska Range field work	Found several sites, will send map locations and surface artifacts
II. Other				
1	. Woodward-Clyde Consultants, Inc. (Duane Packer)	·	Publication of Big Delta A-4 geologic map	Agreed to provide data for publication of ADGGS map next year
2	. Arizona State University (Troy Pe <b>rv</b> e)	7/9	Publication of Big Delta A-4 geologic map	Agreed to provide data for publication of ADGGS map next year

### B. Conferences, symposia, etc. (attended)

1. Gave lecture presentation on permafrost and surficial geology of Alaska to visiting class (Geography of Alaska) from Illinois State University with Wyatt Gilbert and Tom Bundtzen on 7/2/76.

#### C. Research

- 1. 7/7 thru 7/11 did field work in Healy D-6 quadrangle. Evaulated 13 townships
- 2. 7/13 thru 7/26 did field work in Healy D-1 quadrangle. Complèted mapping of surficial deposits.

#### D. Status of reports and publications

1. Still waiting data input from Troy Petve', Duane Packer, and Bert Swan for Big Delta A-4 geologic map.

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: August 26, 1976

FILE NO:

TELEPHONE NO:

FROM: Richard D. Reger RAR

SUBJECT: Progress report, August 1976

Geologist

#### A. Consultations

#### I. State

II. Other

	1.	Agency Div. of Parks (Doug Reger)	<u>Date</u> 8/11	Topic Stratigraphy of site ANC-54	Results Will send strati- graphic section and description
	2.	Div. of Planning and Research (Dave Hanson)	8/17	ADGGS evaluation for ADL in southern Kenai Lowlands	Report due Dec. 2
•	,	Washington Chan	9.16	Character and S	7
	1.	Washington State University (Pete Bowers)	8/6	Stratigraphy of Carlo Creek site	Located volcanic ash layer

B. Conferences, symposia, etc. (attended) - none.

#### C. Research

- 1. 7/29 through 8/6 literature research and photo-interpretation of Talkeetna area (Little Willow Creek to Larsen Lake) and southern Kenai lowlands. Evaluation of surficial deposits and geologic hazards for ADL.
- 2. 8/6 through 8/22 did field work in Talkeetna area and southern Kenai lowlands. Completed field check.

#### D. Status of reports and publications

- 1. Waiting data input from Troy Pewe, Duane Packer, and Bert Swang for Big Delta A-4 geologic map.
- 2. More photo-interpretation required to complete evaluations of ADL projects north of McKinley Park, in Talkeetna area, and in southern Kenai lowlands.

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### MEMORANDUM DEPARTMENT OF NATURAL RESOURCES

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL SURVEYS

TO: Ross G. Schaff State Geologist

# State of Alaska

DATE: September 24, 1976

FILE NO:

TELEPHONE NO:

FROM: Richard D. Reger (CR)
Geologist

SUBJECT: Monthly Report - September 1976

- A. I was involved in the following consultations or meetings during the period August 24 through September 23, 1976:
  - 1. (9/1) Discussed hydrologist position with Mark Howland.
  - 2. (9/3) Discussed surficial geology of Delta Junction area with Ray Kreig of R and M Consultants, Inc.
  - 3. (9/7-9/8) FY-78 ADGGS project planning meeting in College.
  - 4. (9/8)Discussed proposal for report on geologic hazards of Fairbanks area with Troy Pèwè.
  - 5. (9/13) Meeting with city of Anchorage, Corps of Engineers, and USGS in Anchorage re landslide stability monitoring program.
  - 6. (9/14) Meeting in Anchorage with Alaska Branch (USGS) re FY-78 ADGGS and USGS projects.
  - 7. (9/15) Discussed geologic hazards along proposed NW gase pipeline with Bob Forbes (U. of Alaska).
  - 8. (9/17) Discussed surficial geology in vicinity of Indian Mountain AFB with Lt. Bob Blodgett.
  - 9. (9/21) Field trip with Bob Forbes (U. of Alaska) to check photogeologic lineaments between Fairbanks and Tok.
- B. I conducted research on the following projects during the period August 24 through September 23.
  - 1. Aerial photograph interpretation of geology for ADL Planning and Research section (Dave Hanson) resource evaluation in two areas (13 townships) north of Mt. McKinley National Park (parts of Kantishna River, Healy, and Fairbanks quadrangles).
  - 2. With Cheri Carver set up and started geologic hazards investigations for future reports on Alaska and specific communities. Cheri will begin literature review in about one month. I have just begin my compilation. Have almost completed detailed outline of subjects to be considered. Project will be coordinated with Don McGee.

### State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

DATE:

August 20, 1976

Ross Schaff State Geologist

Geologist

FILE NO:

TELEPHONE NO:

FROM:

Tom Bundtzen

SUBJECT

Activities from June 25-August 15

1) Continued investigations of the north flank minerals appraisal, Alaska Range from July 6-August 3, involving examinations of existing claim blocks and sulfide zones in the Totatlanika schist terrain Healy D-2 - D-4 quadrangles and Fairbanks A-1 through A-4 quadrangles. These investigations included mapping at one inch = 70 feet of four base metal prospects and 2 producing placer gold mines in the Bonnifield mining district.

In addition, several days were spent in the Kantishna River A-1 quadrangle examining state lands north of the D-2 withdrawal for Dave Hansen.

2) Continued working on the 40 mile resource area project, as outlined by D. Hansen. The references have now been gathered and examined and a claim commodity map has been completed.

Cheri Carver has handled the logistics while Gil and myself have outlined the project. Field work will commence August 22nd and end on September 1.

3) Field work in conjunction with the ADL's Delta study area centered on examination of the Richardson gold district from August 11-15. This included geologic mapping of a small area and examining 3 producing placer gold mines.

Contact with other agencies include: a) Consultations with M. Robinson (MIRL) about 40 mile resources; Mark has had previous industry experience in the area. b) Consultations with H. McKibben who owns patented ground in the 40 mile area. c) Gil Monroe who is extremely knowledgeable about past mining history in the area, and d) Jim Barker of the Bureau of Mines.

IREV. 08-731

# **MEMORANDUM**

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO:

Ross G. Schaff State Geologist DATE:

September 2, 1976

FILE NO:

TELEPHONE NO:

FROM:

Tom Bundtzen JKB Geologist

SUBJECT.

Biweekly Report - August 15-31

t - ... ...

Major work.

- 1. Conducted geologic field investigations in the Fortymile resource area for David Hansen's planning and research group during the later part of August. These investigations included evaluations of all the known "porphyry copper" prospects staked during 1970-72 in the Tanacross and Eagle quadrangles. We also supported (with our helicopter) Cleland Conwells inspection of a number of placer mines in the Chicken area and a producing antimony mine south of Tok.
- 2. Attended ADL's Delta planning study meetings on August 28 in Delta Junction. The citizens group there seemed to have interesting responses to goals and objectives established by the planning team.
- 3. Contacted Dale Wadleigh of BLM, the chief mining engineer of the Fortymile resource area, and had mineral deposits discussions concerning BLM management philosophy.
- 4. I finally washed the Ford Courier which is under my supervision. Division personnel can't recognize it. Routine maintenance was also performed.

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO:

Ross G. Schaff State Geologist DATE:

September 24, 1976

FILE NO:

TELEPHONE NO:

SUBJECT: Monthly report -

September 1976

I. Major work accomplishment:

Major emphasis has been on the Fortymile resource area selections for the Division of Policy and Planning. Slx overlays including geology, geochemistry, land status, transportation, mining claims, and mineral occurrences will be used in determining the rank of township selectability for the state. 675 geochemical analyses of samples collected during field work will be run by the lab and will add final verification to the mineral occurrences potential in the final report due February 1, 1977.

- 2. Discussions with Wyatt Gilbert on the final products of the north flank mineral appraisal continue. We'll be open filing much of the geochemical results as soon as they are made available to us.
- 3. Dale Wadleigh of BLM-Tok sent me an updated version of land status in the Fortymile resource area.
- Discussed with Dave Snarski. Division of Parks, the possibility of sites
  of historical importance in the Richardson mining district, Delta planning
  area.
- 5. Useful discussions with Jim Barker of the Bureau of Mines, formerly with the Fortymile resource inventory of BLM. Jim has given me access to information he received from private industry concerning prospects in the Fortymile area for exclusive use in the Fortymile selections.
- 6. Assisted Gene Waid in his inventory of the office property.
- 7. Researched the possibility of trading the Ford-Courier for a more reliable winter vehicle this fall.
- 8. Reviewed Cle's Western Miner paper and made corrections or suggestions to the manuscript.

State of Alaska

Department of Natural Resources
Division of Geological & Geophysical Surveys
DATE: September 9, 1976

FILE NO:

TELEPHONE NO:

FROM: James Riehle

State Geologist

TO: Ross G. Schaff

Engineering Geologist

SUBJECT: Report of Activities,

August 2 - August 25, 1976.

It was my pleasure to join the DGGS on August 2, 1976, and I look forward with considerable anticipation and optimism to my new position.

A. Consultations:

None.

B. Conferences and symposia attended:

First public presentation by U.S. Geological Survey of marine geology data collected by <u>Sea Sounder</u> during 6 - week cruise in Lower Cook Inlet and western Gulf of Alaska; held at BLM Building, Anchorage, on August 2, 1976.

#### C. Research

- Assisted William Lyle and Jeff Morehouse in researching available literature on Cape Chiniak, Kodiak Island, geologic constraints. Research completed.
- 2. Began compilation of literature on Gulf of Alaska marine and coastal geology; in particular, have assembled the most pertinent available literature on Seward and Resurrection Bay.
- 3. Completed field and literature research for First-stage evaluation of geologic constraints on potential on-shore development at lcy Bay, northeastern Gulf of Alaska. Field research consisted of brief on-site inspection of 5 specific areas in Icy Bay with William Lyle and Mitch Henning, August 15-19, 1976.
- 4. Compilation of literature on Gulf of Alaska marine and coastal geology includes the following meetings:
  - ARCO's present feelings about potential locations and magnitude of on-shore impact arising from OCS exploration/development. (Attending for DGGS: R. Schaff, J. Riehle).
  - b) Discussion with Lt. Burl Wescott, NOAA office (Anchorage) on August 5, 1976, regarding potential for cooperation between NOAA and State in data collecting in coastal areas. (Attending for DGGS: M. Henning, J. Riehle).
  - c) Brief meeting with Mr. Jerry Im, BLM, OCS office (Anchorage) regarding State agency access to, and use of, the considerable quantity of data on marine and coastal geology being filed at the Anchorage BLM-OCS office.

#### D. Status of Reports and Publications

- 1. Short report, "Geological Reconnaissance, Cape Chiniak", completed by William Lyle, J. Riehle, and J. Morehouse. The report was requested by the Department of Community and Regional Affairs; an oral presentation with visual aids was made to DPDP and other divisions of DNR.
- 2. Report on 5 sites at lcy Bay is nearing completion; the report is at the request of DCRA.
- 3. I helped in final tabulation of the Minerals Areas ranking, for one afternoon only.

TO:

### **MEMORANDUM**

State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

DATE: October 5, 1976

Ross Schaff State Geologist

FILE NO:

TELEPHONE NO:

FROM: James Riehle ARMS Geological Engineer

SUBJECT: Monthly Report

Report Period Aug. 26 to Sept. 25

#### A. Consultations:

1. Federal

Agency	Date	Topic	Results
USGS	9-24-76	Seward groundwater and site evaluations	Joint trip to Seward, with likelihood of further cooperation

B. Conferences, symposia, etc.:

None

#### C. Research:

- lcy Bay site evaluation completed; still awaiting formal response regarding format of the report from K. Waring.
- Seward site evaulation undertaken; most of the tables have been completed on 4 particular sites in upper Resurrection Bay. Except for hard-to-get or obscure reports (e.g. Corps of Engineers' data in Seattle), literature search is completed.

#### D. Status of Reports:

- 1. Preliminary Investigation of Geologic Factors Bearing on Development of Icy Bay (with W. Lyle); transmitted to D. Hanson on 9-17-76.
- Seward site evaluation; field observations required to get pictures and some limited data.

#### E. Miscellaneous:

Invited to join membership of Alaska Geological Society's Environmental Geology Committee.



# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross Schaff State Geologist DATE: July 28, 1976

FILE NO:

TELEPHONE NO:

Frank Larson H
Publications Specialist

SUBJECT: Monthly Report, July 1976

#### EDITORIAL:

- 1) Edited geologic report 51-A "Short Notes on Alaskan Geology."
- 2) Performed routine correspondence, etc. Two weeks vacation.

#### TYPING:

- 1) Distributed special report 12, "Alaska's Uranium Potential."
- 2) Distributed special report 9, "Zeolite Zonation and Mordenite Deposits in the Horn Mountains."
- 3) Received (but have yet to distribute) geologic report 52, "Clay mineralogy and Petrology of the Coal-Bearing Group near Healy," and special report 14, "Mineral Occurrences in the Upper Wood River, Edgar Creek, and West Fork Glacier Areas."
- 4) Filing of mining claims to be put on microfilm.
- 5) Made up and typed 2 forms for the lab.
- 6) Typed numerous correspondence.
- 7) Answered phone and did mail.
- 8) Missing one clerk, Roberta Mann, for most of month (sick leave).

#### CARTOGRAPHY:

1) Drafted figures for ERDA report (Eakins).

### State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE:

August 24, 1976

FILE NO:

TELEPHONE NO:

FROM:

Frank Larson / Publications Specialist

SUBJECT:

Progress report for August 1976

#### EDITORIAL:

- 1) Proofed geologic report 51, "Short Notes on Alaskan Geology."
- 2) Edited AOF-102, "Contributions to clay mineralogy and petrology, Cook Inlet Basin," by D. Triplehorn
- 3) Began Mines Bulletin.
- 4) Miscellaneous correspondence.
- 5) Six days annual leave.

#### TYPING:

- 1) Typed geologic report 51 on composer.
- 2) Typed Mines Bulletin on composer.
- 3) Typed AOF-102.
- 4) Updated and revised information circular 1, "Proper Claim Staking."
- 5) Typed several miscellaneous letters and memos, and monthly report. Typed a few rough drafts of reports and articles.
- 6) For lab, typed Tom Bundtzen's analysis of his field samples. Was over 1,000 of these.
- 7) Filled requests, filed, and answered phones.
- 8) R. Mann out 2 weeks on sick leave.

#### **CARTOGRAPHY:**

- 1) Drafted plates for ERDA report (Eakins).
- 2) Supervised G. Ferrell in drafting job for C. Conwell contribution to geologic report 51.

#### MISCELLANEOUS:

- 1) Received text portion of geologic report 47, "Teklanika Formation" (W. Gilbert) and special report 11, "Commercial-grade mordenite" (D. Hawkins); plates still at vendor. Will announce in September bulletin.
- 2) Received special report 13, "Mineral occurrences near Cantwell" by Hickman and Craddock. Will announce in bulletin.

### State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross Schaff State Geologist DATE: September 23, 1976

FILE NO:

TELEPHONE NO:

FROM: Frank Larson

Frank Larson 4 Publications Specialist SUBJECT. Progress report for September 1976

#### EDITORIAL:

- 1) Retrieved open-file report masters from Anchorage and started supplying other agencies on complimentary list with copies they lack.
- 2) Mines Bulletin effort.
- 3) Began paste-up of "Short Notes" geologic report.
- 4) Moved office of R. Mann and myself to Resources Building.
- 5) Pasted up new information circular 11, "List of DGGS Reports."

#### TYPING:

- 1) Typed "Short Notes" texts on composer.
- 2) Typed rough drafts for Conwell and Eakins.
- 3) Typed miscellaneous letters and memos.
- 4) Helped staple and get Mines and Geology Bulletin in the mail.
- 5) Miscellaneous xeroxing.
- 6) Rearranged all the publications in lower office since there is more room now.
- 7) A lot of filing of open-file reports and correspondence.
- 8) Answered quite a few requests for information.

#### CARTOGRAPHY:

- 1) Continued making plates for ERDA report.
- 2) Two weeks annual leave.

FROM:

### **MEMORANDUM**

## State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: September 1, 1976

FILE NO:

TELEPHONE NO:

Frank Larson A Publications Specialist SUBJECT: FY 76 Documentation Summary

During FY 76 (7/1/75 - 6/30/76) DGGS issued the following documents.

### Biennial Reports

"Report of the Division of Geological and Geophysical Surveys - 1974-75."

### Geologic Reports

'No. 44, "Uranium investigations in Southeastern Alaska," by G.R. Eakins (62 p.).

#### Geologic Reports Reissued

- No. 4, "Geology and mineral deposits of the Denali-Maclaren River area," by M.A. Kaufman (14 p., map).
- 'No. 5, "Geology of the Niblack Anchorage area, Southeastern Alaska," by G. Herreid (10 p., map).
- 'No. 10, "Geology of the Bluff area, Solomon quadrangle, Seward Peninsula, Alaska," by G. Herreid (21 p., map).
- No. 11, "Geology of the Omilak-Otter Creek area, Bendeleben quadrangle, Seward Peninsula, Alaska," by G. Herreid (12 p., map).

#### Geochemical Reports Reissued

'No. 2, "Geochemical investigation of the Slana district, south-central Alaska," by D.H. Richter (14 p., map).

#### Special Reports

'No. 12, "Investigation of Alaska's uranium potential," by G.R. Eakins (372 p., 5 maps).

#### Miscellaneous Papers

'No. 3, "Stratabound copper-gold occurrence, northern Talkeetna Mountains, Alaska," by T.E. Smith, T.K. Bundtzen, and T.C. Trible (7 p.).

#### Contributions to National Publications

- "Reclaiming Mined Lands in Alaska," by C.N. Conwell, in <u>Transactions of Society</u> of Mining Engineers, v. 260, March 1976.
- "Hard-Rock Mining in Alaska Some Operations Since 1938," by C.N. Conwell, in Western Miner, July 1976.

### Mines and Geology Bulletin

'Six issues (7/75, 9/75, 11/75, 1/76, 3/76, 5/76), 10 p. each.

#### Information Circulars (New and Revised)

- 'No. 6, "Alaska Prospecting Information," Rev. Jan. 30, 1976.
- No. 7, "Alaskan Companies and Prospectors," Rev. Dec. 1, 1975.
- 'No.11, "List of Reports Issued by the Division of Geological and Geophysical Surveys," Rev. Sept. 1, 1975.
- 'No.14, "Mining Laws Applicable in Alaska," Rev. Feb. 13, 1976.
- No. 20, "Aeromagnetic Maps of Alaska Quadrangles," Rev. Oct. 1, 1976.
- ·No.21, "Open-File Reports," May 25, 1976 (new).

### Aeromagnetic Maps

•Fifteen released (Baird Mountains 81, B2, C1, C2, D1, and D2; Ambler River B4-6, C4-6, and D4-6.

#### Open-File Reports

- Alaska (by Milton A. Wiltse, 1975), map, scale 1:12,000, 41 p. text.
- AOF-61 Geochemical Analysis of Stream-Sediment Samples from Part of the Survey Pass A-2 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, & T.C. Trible, 1975), map, scale 1:63,360, table, 4 p. text.
- AOF-62 Geochemical Analysis of Stream-Sediment Samples from Part of the Survey Pass B-3 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, & T.C. Trible, 1975), maps, scale 1:63,360, table, 4 p. text.
- -AOF-63 Geochemical Analysis of Rock and Stream-Sediment Samples from Part of the Survey Pass C-4 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, & T.C. Trible, 1975), map, scale 1:63,360, table, 4 p. text.
- AOF-64 Geochemical Analysis of Rock and Stream-Sediment Samples from Part of the Survey Pass C-5 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, & T.C. Trible, 1975), map, scale 1:63,360, table, 4 p. text.
- AOF-65 Geochemical Analysis of Stream-Sediment Samples from Part of the Survey Pass C-6 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, & T.C. Trible, 1975), map, scale 1:63,360, table, 4 p. text.

- 'AOF-66 Geochemical Analysis of Rock and Stream-Sediment Samples from the Survey Pass A-3 Quadrangle, Alaska (by R.E. Garland, G.R. Eakins, T.C. Trible, & W.W. McClintock, 1975), map, scale 1:63,360, table, 4 p. text.
- ·AOF-67 Geochemical Analysis of Rock and Stream-Sediment Samples from the Survey Pass A-4, A-5, A-6, B-4, B-5, and B-6 Quadrangles, Alaska (by R.E. Garland, G.R. Eakins, T.C. Trible, & W.W. McClintock, 1975), map, scale 1:63,360, 4 table sheets, 4 p. text.
- AOF-68 Summary of Analysis of Stream-Sediment Samples, Mt. Hayes A-4, A-5, B-4, and B-5 Quadrangles, Alaska (by James H. Stout, 1975), map, scale 1:63,360, 5 p. text, 2 p. table.
- AOF-69 Geochemical Sample Locations, Healy A-2 Quadrangle, South-Central Alaska (by T.E. Smith, G.L. Kline, J.T. Kline, & N.D. Coursey, 1975), map, scale 1:63,360, table.
- ·AOF-70 Analysis of Stream-Sediment Samples, Mt. Hayes B-6 Quadrangle, South-Central Alaska (by T.E. Smith, G.L. Kline, J.T. Kline, & N.D. Coursey, 1975), map, scale 1:63,360, table, 4 p. text.
- 'AOF-71 Geochemistry of Stream-Sediment Samples of the Southwestern Ambler River Quadrangle, Alaska (by G.H. Pessel, 1976), map, scale 1:200,000, 2 foldout tables, 3 p. text.
- ·AOF-80 Geologic Map and Structure Sections of Healy C-6 Quadrangle, Alaska (by Wyatt G. Gilbert & Earl C. Redman, 1975), map, scale 1:40,000, } p. text.
- 'AOF-81 Mineral Occurrences in the Upper Wood River, Edgar Creek, and West Fork Glacier Areas, Central Alaska Range (by K.W. Sherwood, C. Craddock, T.E. Smith, T.C. Trible, & T.K. Bundtzen, 1975), 17 p., including 7 figs., 2 tables.
- \*AOF-82 Radiometric Age Map of Alaska Southeastern Alaska (by D.L. Turner & F.H. Wilson, 1975), map, 11 p. text.
- AOF-83 Radiometric Age Map of Alaska Aleutian Islands (by D.L. Turner & F.H. Wilson, 1975), map, 10 p. text.
- ·AOF-84 Radiometric Age Map of Alaska Southwestern Alaska (by D.L. Turner & F.H. Wilson, 1975), map, 12 p. text.
- ·AOF-85 Radiometric Age Map of Alaska South-Central Alaska (by D.L. Turner & F.H. Wilson, 1975), map, 12 p. text.
- ·AOF-86 Radiometric Age Map of Alaska Northern Alaska (by D.L. Turner & F.H. Wilson, 1975), map, 11 p. text.
- Zeolite Deposits of Possible Economic Significance in the Northern Alaska Peninsula (by James A. Madonna, 1975), 27 p., including 5 figs., 2 tables.

- AOF-88 Geochemistry of Stream-Sediment Samples of the Southeastern Baird Mountains Quadrangles, Alaska (by G.H. Pessel, 1976), map, scale 1:200,000, 5 foldout tables, 3 p. text.
- AOF-89 Commercial-Grade Mordenite Deposits of the Horn Mountains, South-Central Alaska (by D.B. Hawkins, 1975), 35 p., 10 figs., 2 tables.
- AOF-90 Present and Historical Demand for Oil and Gas in Alaska (by Georgia Bewley, Kristina O'Connor, P.L. Dobey, Joanne Welch, R.M. Klein, & Charlotte Renaud, 1975), 16 p., 4 tables, 1 map.
- 'AOF-91 Alaskan Oil Demand 1975-2000 (by Georgia Bewley, Kristina O'Connor, P.L. Dobey, Joanne Welch, Robert Klein, William McConkey, & Clarissa Quinlan, 1975), 32 p., 19 graphs, 2 tables.
- 'AOF-93 Stratigraphic Study of the Gulf of Alaska Tertiary Province, Northern Gulf of Alaska Area (by W.M. Lyle & I.F. Palmer, 1976), Part I includes 30 p. text, 9 appendices (including 53 photos), addendums.

  Part II includes 23 blueline plates.
- 'AOF-95 Geologic Map of the Central Healy Quadrangle, Alaska (by Robert G. Hickman & Campbell Craddock, 1976), 3 blueline plates.
- ·AOF-96 Geologic Map of South Augustine Island, Lower Cook Inlet, Alaska (by R.T. Buffler, 1976), map, scale 1" equals 2000 feet, 3 p. text.
- AOF-97 Preliminary Geochemical Report of the Western Healy D-1 Quadrangle and Vicinity, Alaska (by W.G. Gilbert & J.T. Kline, 1976), map, scale 1:63,360, 1 p. text.
- AOF-99 Lode Claim Groups of the Southwestern Brooks Range Copper Belt, Ambler River and Survey Pass Quadrangles, Alaska (Filed Prior to January 1976) (by J.T. Kline, 1976), 2 maps, scale I inch equals 1000 feet, 1 p. text.
- AOF-100 Regional Gravity Survey of Beluga Basin and Adjacent Area, Cook Inlet Region, South-Central Alaska (by Steve W. Hackett, 1976), 40 p. text which includes illustrations.

In addition, DGGS distributed 814 biennial reports, 258 miscellaneous papers, 511 miscellaneous publications, 215 bibliographies, 1152 geologic and geochemical reports, 6404 information circulars, 356 laboratory notes and reports, 867 aeromagnetic maps, 126 special reports, and 18,099 Mines and Geology Bulletins. Impressions (xeroxing) made for the public totaled 8778. Also, there were 1386 visitors.

RESOURCE INVESTIGATIONS

### State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

RECEIVED DATE: July 28, 1976

TO: Ross Schaff State Geologist Anchorage

TELEPHONE NO:

FILE NO:

Div. Of Manipairal Survey Anchara Ja

CHIE FROM: Gil Eakins

SUBJECT: Monthly Report, July 1976

Chief Mining Geologist College

#### A. Consultations

#### I. Federal

Cayne Roberts CRDA	6/28	Discussed ERDA's plans for opening on office in Anchorage
 Lee Morris Los Almos Lab	6/29	Discussed U sample analyses by phone
delen Foster USGS	6/29	Discussed our Fortymile program

#### II. Miscellaneous

1.	Ron Sheradon	6/25
	Great Lands Exploration	

Wanted information on U project we did last summer. Sheradon reported he has a crew of 15 at Granite Mtn. exploring for U; has considerable geophysical equipment and large scintillometer for aerial surveys, staked the U anomaly at head of Peace River

#### B. Conferences

- 1. Fairbanks staff met 7/1 to discuss projects, priorities, and equipment needs.
- 2. Set up a tour for Jim Patterson, University of Illinois, and party of 12 with Wyatt Gilbert and Dick Reger.
- 3. Met with Ross Schaff, Gar Pessel, and Wyatt Gilbert, 7/6, to discuss programs and budgets.

#### C. Research

- 1. Met with Dan Hawkins, University of Alaska, to set up computer program for U, Th, and K<sub>2</sub>O data for ERDA project.
- 2. Mitch Henning assisted me for about two weeks by drafting a set of radiometric survey maps for the ERDA project.

- 3. Cle Conwell located and sampled the U occurrence at Purkey Pile prospect in the Alaska Range. It is very promising and I hope we can do some work in the area state land lies on the same intrusives to the southwest.
- 4. Reviewed "Revised Mining Laws" proposal with Conwell and submitted recommendations.
- 5. Discussed need to keep Mildred Brown on part time with Conwell. Mildred wants to work part time and can be a tremendous help both to the information office and to the resource section by typing and helping get the Bibliography of Alaskan Geology updated. I strongly recommend continuing to hire Mildred on a part time basis.

Also, Cle suggested Ginny Ferrell might be able to assist Ann Schell with drafting this fall to help catch up on the backlog of maps for reports.

### State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

Ross G. Schaff State Geologist DATE:

September 24, 1976

FILE NO:

TELEPHONE NO:

FROM Gil Eakins SNE

SUBJECT: Monthly Report - September

Chief Mining Geologist

#### A. Consultations - miscellaneous:

Person	Date	Topic
Jay Gaton, Everett Exploration, Salt Lake City, Utah	9/9/76	Discussed the possibilities for sedimentary uranium deposits in Alaska.
ARCO geologist, Denver	9/21/76	Checking on uranium exploration in Alaska.
Mark Ringstad, local miner	9/17/76	Wanted information on scintillo- meters and borrowed one to examine his property.

#### Conferences attended:

Attended half-day meeting on NPR-4, sponsored by BLM in Fairbanks. A summary was sent to you as a memorandum.

#### C. Research:

- 1. In the field Aug. 23 Sept. 3 examining the geology and mineral deposits in the Fortymile area. Now compiling data for Division of Lands to aid in state land selections. Visited most of the mines and prospects in the project area. The compilation of base data is nearly completed. Tom Bundtzen has done most of the map work. We are ready to "priortize."
- 2. Assisted Cle Conwell with a short report on the demand and availability of limestone and phosphate rock for agricultural use in Alaska; requested by the Commissioner.
- 3. Took a one-day field trip with Conwell and Stein to visit active mining operations in the Fairbanks district.
- 4. The ERDA report is still in the mill. Cheri Carver is in the final stage of compiling the computer run statistical study; and Ann Schell has the maps almost finished.

#### Miscellaneous:

- Budget and program meeting, September 7-8, with Ross Schaff and others.
- 2. Gene Waid spent the week of September 20-24 inventorying the Fairbanks office and lab.
- 3. Took one day sick leave.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

Geometrics (Fowler)

7/12

TO: Ross Schaff State Geologist

FROM:

DATE. July 28, 1976

FILE NO:

TELEPHONE NO:

RECEIVED

Div. Of Oak Jacob Survey

SUBJECT:

Monthly Report, July 1976

### A. Consultations

Steve Hackett Geophysicist

### I. State

	1. DGGS	Agency (Gilbert)	Date 6/28	Topic Ruby Ridge report	Results edited and looked over rough draft
	2. DGGS	(McGee)	6/29	Kashwitna-Susitna field program	discussed logistics and field plans
	3. DGGS	(Lyle)	6/29	Bruin Bay Fault- Lower Cook Inlet	discussed regional geology and outlined gravity profile lines
	4. DGGS	(Schaff)	7/13	Brooks Range data- acquisition	request to Div. of Lands outlining information needed during field season
	5. DGGS	(Schaff)	7/20	State of Alaska land status	request to Div. of Lands for an up-to- date land status plat (1:250,000 scale) of Brooks Range, S. Alaska Range, Kuskokwim and Yukon areas
II.	Federa1				
	1. USGS	(I. Tailleur)	7/13	Brooks Range field camp	logistic and camp problem at Noatak R postpone geophysical efforts until AugSept.
	2. USGS	(T. Overshine)	7/14	Brooks Range atlas	discussed Brooks Range geophysical projects; current and future data needs
III.	Contrac	ts			
			- 14 -		

Completion require-

aeromagnetic contract data and tapes

ments of 1975-76

holding final payment

until DGGS receives

2. Geometrics

7/26

Aeromagnetic contract

1975-76 contract has been completed, ok'd for final payment

#### B. Research

- 1. Field work Lower Cook Inlet Geophysical -acquired 36 new gravity stations, transecting Bruin Bay fault system and Lower Jurassic sedimentary sections -acquired 10 new gravity stations over Tertiary rocks exposed between
  - -acquired 10 new gravity stations over Tertiary rocks exposed between Red Glacier and Cook Inlet waters.
- 2. Brooks Range Geophysical
  - -finished provisional aeromagnetic interpretation of Ambler River quadrangle
  - -integrated recent gravity data with regional geology in Shungnak and Selawik quadrangles
- 3. N. Flank Geophysical
  - -transfered gravity and aeromagnetic data on field maps
  - -preparing for field work
- 4. Kashwitna Susitna Geophysical
  - -transfered gravity and aeromagnetic data of field maps
- 5. Computer Library
  - -inventoried programs, outlining current and future requirements
- 6, FY-78
  - -preparing recommendations for geophysical programs, equipment and personnel needs
- C. Status of Reports and Publications
  - 1. AOF 100 released
  - 2. Ruby Ridge Geological Report working of aeromagnetic profile
  - 3. Geologic Report 49 final draft is being typed
  - 4. Speculative evolution of Shelikof Trough drafting of illustrations needs to be completed
  - 5. Provisional interpretations of geophysical data in Ambler River, Survey Pass quadrangles working of preliminary interpretation

#### D. Miscellaneous

- 1. Preparing for N. Flank (Alaskan Range) and Kashwitna-Susitna River geophysical field projects, July 28-August 10.
- 2. Outlining computer programmer requirements to adapt geophysical modelling and data reduction programs.

Ross

Just a quick note to up-date you on our activities, accomplishments, and plans.

- 08/13 Flew to Kotzebue then into USGS camp on Noatak R. arrived 8:00 PM.
- 08/14 Flew to Anglaak Pass via helicopter, joined Grybeck and two economic geologists, looked over potential tin-bearing granites, occupied 12 new gravity stations, collected rock samples for physical property measurements
- 08/15 AM: windy, rainy; PM occupied 10 new gravity stations, flew back to USGS base camp
- 08/16 Flew to Siniktanneyak ultramafic complex, occupied 21 new gravity stations, collected rock samples, mapped contacts, structural relationships, and collected geochem and pan samples for Cr, Pt, Sn...
- 08/17 Flew to Siniktanneyak Mtn, occupied 38 new gravity stations, sampled and mapped complex (completed project)
- 08/18 Flew to Ambler C-1, C-2, B-1, B-2 quads, occupied 23 new gravity stations, mapped and sampled Shishakshinovik plutonic complex
- 08/19 Flew to Survey Pass C-5, C-6, B-5, B-6 quads, occupied 20 new gravity stations, helped Gil Mull map structure (nappes, windows, thrusts:

  Miss-Dev carbonates) "TEXT BOOK" EXAMPLE OF ALPS BUT EXTREMELY COMPLEX!
- 08/20 Office work-base camp, plot newly acquired gravity stations. Plan future geophysical work to get good coverage of Ambler River 1:250,000 quadrangle, reduce gravity data, box-up rock samples, and review regional geologic maps and notes, time sheets, diary, reports, etc...
- 08/21 9/7+ Gravity surveys N. half Ambler River quadrangle. Rock sampling, structural mapping and magnetic correlation

The USGS Camp is tentatively closing down around August 30th. My plans are to work from August 31 - September 7 on the U. Noatak conducting semi-detailed gravity profiles over the plutonic-sedimentary contacts, large aeromagnetic anomaly trending along 67° 40'W, and rock sampling (bulk and oriented samples) of the major rock types separating distinct tectonic styles. Maxson Aviation will fly out the majority of my gear (rocks, geophysical equipment) September 7th to Kotzebue. I plan to take 12 days of accumulated comp time and join friends to float down the Noatak River (September 7 - 21st + 2 days).

Irv Tailleur and Don Grybeck would like to have me participate in a USGS meeting in late September early October at Menlo Park (USGS expense). Also Irv and I think 2-4 weeks of concentrated work in Menlo Park in November would be extremely beneficial in integrating the regional geology and geophysics of the west-central Brooks Range. This time period would be devoted to working on a presentable and publishable package of existing data...It would be informal workshops with all Brooks Range geologists. Also I could oversee the rapid processing of the newly acquired gravity and rock properties data.

I hope the day-to-day activities are going good for you. Gil Eakins has my address's and contacts in-case-of-an-emergency, etc. I'll write you a summary report and send it out around September 7th to outline our accomplishments, conclusions (if any at that time), and any comments that come to mind. Best wishes DGGS endeavors!

Mit beaten Grussen and Bergheil,

Steve H.

\* attached is Helicopter Time Report --- we are putting in long days 10-12 hours! The weather has been unbelievably good to date.

#### Dear Ross

Just a note to up-date you on my activities, plans, and a brief summary report on the Brooks Range geophysical project:

- 1. Enclosed is helicopter time sheet, plus worksheet (please return for my records), for appropriate processing.
- 2. I've spent the past week (Aug. 31-Sept. 6) in the U. Noatak River Valley conducting semi-detailed gravity traverses, rock sampling, and mapping geologic contacts.

Preliminary results document structural relationships of Cretaceous intrusives and adjacent rocks giving insight on regional structural style in west-Central Brooks Range.

72 new gravity stations were occupied by foot, 38 strikes and dips, plus geologic contacts mapped, 12 rock samples collected for physical property determination and 42 cumulative miles covered by foot traverse.

- 3. Took annual leave from Sept 2 at 1:00 PM to Sept. 3 4:30 PM for a little R & R (Recreation-Recuperation). \*Please fill out appropriate forms and process. A rock sample for you from high places!
- 4. Planning to fly-out excess gear to Kotzebue and start Noatak River trip on Sept. 7th, weather, water levels, logistics, etc. permitting. We anticipate arriving in Noatak Village by Sept. 21st+ 3 days, then on to Fairbanks via Kotzebue (to pick-up gear) as soon as possible. I'll contact you when I get to the College office.
- 5. The stay and time working with USGS personnel from Aug. 12-31st was very beneficial. We spent alternate days collecting gravity data-rock samples and studying geology. I spent 3-days working with Don Grybeck and 2 economic geologists looking at mineralized zones along and within the Igikpak intrusive complex; 2+ ays with Gill Mull, Oil and Gas Div., observing, discussing, and mapping Dev. and Miss. sedimentary rocks and structural relationships. The remaining time was devoted to occupying gravity stationsrock sampling by myself and/or with Irv T. and Chuck Mayfield observing or mapping geology in the Ambler R., Survey Pass, Baird Mtns., Howard Pass or Mishequi Mtn. quadrangles. All and all I obtain a generalized orientationknowledge of some of the geologic problems in the west central Brooks and how they might be assisted by regional geophysics. Our joint endeavors should produce some insight on solving some geologic questions as they relate to mineral resources (hard rock and soft rock) land-use planning, regional tectonics. Our field work should produce quite a few new joint (USGS-ADGGS) publications of major significance and interest to the public as well as state-federal government agencies. So much for justification and potential usefullness to the State of Alaska.
- 6. Joint USGS-ADGGS accomplishments during Aug. 12-31st include the following:
  - 350 new regional gravity stations were occupied in the Ambler R., and Survey Pass quadrangles

- 11. 96 rock samples were collected for physical property determinations (rock density and magnetic susceptibility)
- 111. 18 oriented rock samples were collected for remanent and permanent magnetic susceptibility determination
- 1V. 4 major N-S regional gravity profiles were completed over the westcentral Brooks Range
- V. 7 detailed and semi-detailed gravity profiles were conducted over Cretaceous intrusives bodies, mafic and ultramafic complexes within the west-central Brooks Range.

Well so much for thoughts in a tent listening to blowing sleet and snow outside. I hope this up-dates you sufficiently!

Berghell,

Steve H.

### Monthly Work Report

Month of

	Fairbanks	Anchorage	Juneau	Ketchikan	Total
1. Visitors	267	714	140	265	1,386
2. Annual reports	662	67	50	35	814
3. Miscellaneous papers	35	176	17	30	258
4. Miscellaneous publications	343	95	33	40	511
5. Requests for information received by mail	894	270	386	32	1,582
6. Requests for information received by phone	439	246	98	147	930
7. Rock samples	63	0	0	. 5	68
8. Bibliographies	144	65	6	_ 0	215
9. Geologic & Geochem reports	851	163	71	67_	1,152
10. Information circulars	4,561	930	572	341	6,404
11. Laboratory notes & reports	318	37	1	0	356
12. Aeromag maps	794	58	15	. 0	867
13. Special reports	123	0	3	0	126
14. Open file listing	15	0	0	0	15
15. Letters	35	0	0	0	35
16. Monthly Mines Bulletin	18,024	26	0	49	18,099
17. Xeroxing (pages)	6,681.	0	2,062	35	8,778
Mineral Location Map  19.	5	0	.0	0	5
20.		<del>                                     </del>			

Totals for Anchorage, Juneau, and Ketchikan are for September 1, 1975 to June 30, 1976 as the College office didn't start keeping totals for these other offices until September 1975.

# Monthly Work Report

Month of July 1976

	Fairbanks	Anchorage	Juneau	Ketchikan	Total_
1. Visitors	30	105	38	47	220
2. Annual reports	6	13	12	1	32
3. Miscellaneous papers	1	1		4	6
4. Miscellaneous publications	68	8	7	4	87
5. Requests for information received by mail	31	14	53	2	100
6. Requests for information received by phone	7	21	13	. 19	46
7. Rock samples	1				1
8. Bibliographies	18		2		20
9. Geologic & Geochem reports	78	5	16	2	101
10. Information circulars	86	95	82	90	353
1. Laboratory notes & reports	6	18			24
12. Aeromag maps	3	14			17
_3. Special reports	103		,		103
14. Open file listing					
15. Letters					
16. Monthly Mines Bulletin				6	6
17. Xeroxing 18.			115		115
19.					
20.					

## Monthly Work Report

August 1976
Month of

	Fairbanks	Anchorage	Juneau	Ketchikan	Total
1. Visitors	22	64	34	31 ,	151
2. Annual reports	6	2	15	4	27
3. Miscellaneous papers	2				2
4. Miscellaneous publications	13	4	1	4	22
5. Requests for information received by mail	56	4	32	2	94
6. Requests for information received by phone	5		14	14	33
7. Rock samples	2				2
8. Bibliographies	8				8
9. Geologic & Geochem reports	27			3	30
10. Information circulars	127	33	53	35	248
11. Laboratory notes & reports	1				1
12. Aeromag maps	42				42
13. Special reports	33		2		35
14. Open file listing					
15. Letters	3				3
16. Monthly Mines Bulletin	3			5	8
Xeroxing 18.			240		240
19.					
20.					
				-	

## Monthly Work Report

Month of September 1976

	Fairbanks	Anchorage	Juneau	Ketchikan	Total
1. Visitors	121	43	12	26	202
2. Annual reports	14	3	0	7	24
3. Miscellaneous papers	2	2	0	5	9
4. Miscellaneous publications	12	4	6	3	25
5. Requests for information received by mail	45	3	14	0	62
6. Requests for information received by phone	9	29	8	14	60
7. Rock samples	8	0	0	0	8
8. Bibliographies	0	5	0	_ 0	5
9. Geologic & Geochem reports	12	22	0	٥	34
10. Information circulars	119	46	20	. 44	229
11. Laboratory notes & reports	0	3	0	0	3
12. Aeromag maps	2	12	0	0	14
13. Special reports	13	0	0	0	13
14. Open file listing	0	0	0	0	0
15. Letters	0	0	0	0	0
16. Monthly Mines Bulletin	3,148	. 0	0	2	3,150
17. Xeroxing	0	0	30	6	36
18. Alaska Open-File Reports (complimentary mailing list) 19.	76	0	0	0	. 76
20.					

MINERAL LABORATORY

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross Schaff State Geologist DATE: July 27, 1976

FILE NO:

TELEPHONE NO:

FROM:

Henry Potworowski
Minerals Lab Supervisor

SUBJECT: Monthly Report, July 1976

1. New samples are beginning to come in from the field. We are logging them in immediately, but this time no lab numbers are being assigned. The field number used by the geologists is being used throughout as the only sample identification. This should simplify matters and cut down on paper work. As of this date these are the statistics:

Bill Lyle 67 samples
Cle Conwell 3 samples
Tom Bundtzen 42 samples
Gil Eakins 4 samples
Wyatt Gilbert 313 samples
Total input as of June 26 429 samples

- 2. The Varian IM-6D Module is back again in repair where it is averaging 75% of our holding time. Apparently this time it cannot be zero'd properly. This is the ninth time that this unit has been sent to the factory for repairs. We are paying freight and the equivalent of many thousands of dollars of lost man hours trying to fix it, take it down, ship it, etc.
- 3. Nicki Coursey continutes on sick LWOP. Have had a telephone conversation with Mildred Zenger as I am becoming increasingly concerned on her ability to continue in her position as geochemical analyst. In my opinion it is not in the best interest of the state to have someone merely occupy a position without actually working, that is to carry her administratively only while all this time we could have someone else hold the job, who could and would work and contribute his share to the community.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: August 25, 1976

FILE NO:

TELEPHONE NO:

FROM: Henry S. Potworowski Lab Supervisor

SUBJECT: Progress report for August 1976

- 1. The total input of Division samples stands at 749 as of this date. All of these will require thorium, uranium, and potassium determinations in addition to the usual seven element geochemical analysis.
- The Varian IM-6D Module (Digital Readout) of our AA unit continues to reside at the factory in Palo Alto, California where it has been sent for repairs early in July.
- 3. Nicki Coursey has returned to work as of August 13, 1976 and appears to be taking the daily routine of a full days work quite well so far.

Mark Wescott, our temporary geological assistant I, who has been helping us with the Minerals Library is leaving August 31, 1976 as he is going back to school at the University of Alaska.

4. Most laboratory duties of a professional nature have been apportioned as follows:

Nam Veach : X-ray diffraction and mineral identification.
Don Stein : Elemental analysis by AA and all public samples

Nicki Coursey: Determination of thorium.

Greg Douglas : Determination of granium and sample input supervision.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

RECEIVED

TO: Ross G. Schaff State Geologist DATE: September 24, 1976

SFP 2 7 1976

FILE NO:

Div. Of Gedlögital Survey

Amthotoge

TELEPHONE NO:

FROM: Henry Potworowski
Minerals Lab Supervisor

SUBJECT: Progress report for September 1976

- 1. Total input of Division samples stands now at 861.
- 2. The Varian IM-6D module of the AA unit has arrived from the factory where it was being repaired for the last 8 weeks. It seems to be operational at last.
- 3. Tom Trible, former minerals lab supervisor who is now with the Dept. of Environmental Conservation in Juneau, has visited this office briefly in the early part of this month. He was interested in our capability for doing some particulate analysis by X-ray diffraction.
- 4. Gene Wade, Department Supply Officer from Juneau, arrived here September 20 and for most of the week did the Division's inventory with the help of Don Stein. Sixty one items have been excessed and are now ready for auction or dumping depending on what action will be taken by the state people who will look it over during the last week of September. These items are now stored at the ACS warehouse.
- 5. The August budget report from Kate Gray balances with my own bookkeeping record and is in good shape.

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JUL 22 1376

WEEKLY LABORATORY WORK SUMMARY

Div. Of Genlayical Survey

for the week of  $\frac{7-1}{}$  to  $\frac{7-16}{}$ 

	Public Samples	Geochem. Samples	Division* Samples
	205		
	0		
	0	0 :	0
	70	3,423 (12,901)**	103 (434)**
ļ	205		

Remarks:

January 1

Backlog from last week

Submitted during week

Completed during week

Backlog at end of week

Cumulative completed since

SIgned MANOR RELIGION

Date July 16, 1976

## Individual determinations, including optical emission spectrography, x-rzy diffraction and emission, microscopic work, etc.

<sup>\*</sup> Division and other samples or special investigations not formally reported.

Div. Of Chological Survey

Juchornac

WEEKLY LABORATORY WORK SUMMARY

for the week of \_\_7-19\_\_ to \_\_7-30\_\_

Public Samples	Geochem. Samples	Division* Samples
205		
147		
0 .	0 (0)**	0
70	3,423 (12,901)	103 (434)
352		

Remarks:

January 1

Backlog from last week

Submitted during week

Completed during week

Backlog at end of week

Cumulative completed since

Date \_\_.August 2, 1976

<sup>■</sup> Division and other samples or special investigations not formally reported.

<sup>##</sup> Individual determinations, including optical emission spectrography, x-rzy diffraction and emission, microscopic work, etc.

### WEEKLY LABORATORY WORK SUMMARY

for the week of 8-2 to 8-16

Public Samples	Geochem. Samples	Division* Samples
352		
. 0		
1	595 (3,535)**	3 (115)**
71	4,018 (16,436)**	106 (549)** :-
351		

Backlog from last week

Submitted during weak

Completed during week

Cumulative completed since January 1

Backlog at end of week

Remarks:

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Div. Of Goolsman Survay

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i:5. 5.

August 17, 1976

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

<sup>\*</sup> Division and other samples or special investigations not formally reported.

## WEEKLY LABORATORY WORK SUMMARY

for the week of 8-17 to 8-31

· · · · · · · · · · · · · · · · · · ·	•			
	Public Samples	Geochem. Samples	Division* Samples	
Backlog from last week	351			
Submitted during week	32			
Completed during week	175	238 (300)**	4 (6)**	
Cumulative completed since January 1	246	4,256 (16,736)**	110 (555)**	
Backlog at end of week	208	• • • • • • • • • • • • • • • • • • • •		

Remarks:

Signed Mima Polymon (3. : August 31, 1976

Division and other samples or special investigations not formally reported.

<sup>\*\*</sup> Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

# RECEIVED

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

SEP 22 1976

WEEKLY LABORATORY WORK SUMMARY

Div. Of Geological Survey

for the week of 9-1 to 9-15

	Public Samples	Geochem. Samples	Division* Samples
	· · · · ·		•
Backlog from last week	208		•
Submitted during week	.0		
Completed during week	105	275 (275)**	0 (0)**
Cumulative completed since January 1	351	4531 (17,011)**	110 (555)**
Backlog at end of week	103		

Remarks:

Signeo Minic Actionación (... September 17, 1976

<sup>\*</sup> Division and other samples or special investigations not formally reported.

<sup>\*\*</sup> Individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.

### WEEKLY LABORATORY WORK SUMMARY

for the week of 9-16 to 9-30

OCT

Jiv. Of GLOROGICUI SULVEY -4nchorage

	Public Samples	Geochem. Sampies	Division* Samples		
			- <del>-</del>		
Becklog from last week	103				
Submitted during week	172				
Completed during week	5	268 (280)**	16 (96)**		
Cumulative completed since January 1	356	4,799 (17,291)**	126 (651)** ::		
Backing at end of week	270				
		•			

Remarks:

October 4, 1976 Signed

Division and other samples or special investigations not formally reported.

<sup>##</sup> individual determinations, including optical emission spectrography, x-ray diffraction and emission, microscopic work, etc.



# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross Schaff State Geologist DATE: July 27, 1976

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell
Mining Engineer

SUBJECT: Monthly Report, July 1976

#### 1. Problem Areas

- a. Production statistics from mining operations is a continuing problem. The letter from Al Service outlines the method of collecting information. I have reviewed the computer run sheets on gold production for 1975 and noted that there are several producers whose names are not on the list. We still need better cooperation with the U.S. Bureau of Mines.
- b. Although we have been handicapped for secretarial support with Roberta on sick leave, the delays have not been serious. Gil has suggested we investigate occasionally using Mildred Brown.
- c. Frank and Ann have inquired about having Ginny assist with cartographic work under Ann's supervision.

#### 2. Consultations

#### II, Federal

	Agency	Date	Topic	Results
1.	U.S.B.M. John Mulligan	6/25	Placer Mining	Proposal to evaluate effects of placer mining
2.	M.E.S.A. Vern Danielson	7/9	Safety	Better cooperation
III. Miscella	neous			
1.	Placer Miners Bill Murray	6/29	E.P.A.	Bill Murray, an attorney, will represent Placer Miners in a suite against E.P.A.
2.	Fairbanks Chamber of Commerce	6/29	Oil and Coal	Chamber of Commerce will disseminate information on energy resources
3.	U. of Washington Don Anderson	7/1	Coal, transportation	The U. of Washington has a U.S.B.M. grant to evaluate transporting AK coal to the Pacific NW.

Agency	Date	Topic	Results
4. Stan Weston	7/6 & 7/7	Reclamation	Reviewed progress at Usibelli Mine
5. Kaiser Engineers George E. Aiken	7/16	Coal, transportation	Kaiser has a U.S.B.M. contract to evaluate North Slope coals
6. Stewart H. Folk	7/21	Coal, Susitna Basin	Examined coal samples and advised on exploration methods

#### 3. Mine Inspections

- a. Usibelli Coal Mine
- b. Premier Coal Mine
- c. Evan Jones Lease

#### 4. Research

- a. Prepared polished sections of Point Hope coals.
- b. Examined outcrops of the Yanert Formation and sampled Yanert Formation coal.
- c. Sampled coal seam in Healy D-1 quadrangle.
- d. Reviewed coal lands in Alaska.
- e. Sampled an uranium prospect.

#### 5. Miscellaneous

- a. Reviewed requests for CPP extensions, and work affidavits for Division of Lands.
- b. Reviewed a proposed change in the mining laws and prepared a memo with Gil.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: September 1, 1976

FILE NO:

TELEPHONE NO:

troops .

uranium exploration.

FROM: Cleland N. Conwell Mining Engineer

4. Ne

SUBJECT: Monthly report - August, 1976

#### A. Consultations

### 1. Federal

	Agency	Date	<u>Topic</u>	Results
	U.S. Geological Survey (Jim Callahan)	8/12	Arctic coals	Discussed the proposed program of the Kalser Engineers contract to evaluate North Slope coals.
11.	State			
	Highways (Sturgis)	8/2	Right-of-way on Steese High- way	Agreed to assist the Highway Department and the Department of Law if necessary in negotiating purchase of right-of-way for the new Steese Highway.
ш.	Miscellaneous			
	Engelhard Minerals (Shimon Katz)	7/28	Ore buying	introduced Mr. Katz to to several potential ore producers in the Fairbanks area.
	Washington Public Power Supply Co. (R.E. Matson)	8/9	Coal and uranium in Alaska	Reviewed coal fields and possible sources of uranium in Alaska.
	Portland General Electric Co.	8/17	Coal and uranium potentials	Discussed the coal potential with Ken Weisenburger and obtained information on their current drilling program. Introduced Ken Weisenburger to Gil Eakins in regard to

## B. Mine Inspection

- 1. Usibelli Coal Mine
- Howard Bayless and Bob Dittman, placer mine; Vern Weaver, placer mine; Ferrell Bruce, lode silver mine; George Robertson, Jack Wade Creek, placer mine; Russell Hammond, placer mine; Paul White, placer mine; Steve Olson, placer mine; Alvin Kyles, placer mine; Strikler, placer mine; Kirk Stanley, stibnite mine.

#### C. Research

- 1. From Tuesday, August 3, 1976 through Friday August 6, 1976 canoed down the Yukon River to sample coal and looked for uranium prospects.
- 2. Investigated the coal resource in the Broad Pass coal field.
- 3. Reviewed mining activities in the Fortymile area.
- D. Reviewed requests for coal prospects and permit extensions for the Division of Lands.

Prepared a short paper on the Point Hope coals for the series of short papers to be published by the Alaska Division of Geological and Geophysical Surveys.

# State of Alaska

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

TO: Ross G. Schaff State Geologist DATE: September 24, 1976

FILE NO:

TELEPHONE NO:

FROM: Cleland N. Conwell
Mining Engineer

SUBJECT: Monthly Report -

August 25 - September 25

Problem areas:

None.

Consultations:

F	ederal	Agency	Date	Topic
J	im Barker	USBM	9/22/76	Four Bear Mining Company - inspected mine.
\$	<u>tate</u>	•		
J	îm Drew	U. of A.	9/15/76	Need for lime and phos- phates in Alaska agriculture.
0	ther			
K	aren Cedzo	KTVF	8/30/76	She requested info on move of ADGGS to Anchorage. Referred her to you and provide your telephone number.
S	tanley Weston	Westco Agri. Co.	9/8/76	Reviewed progress at Usibelli on mined land reclamation.

#### Conferences:

9/10/76 - Met with you and Brown, U. of Al., on improving office space (repairs) at Maintenance Building.

9/13/76 - With Paul Dicksen, Jim Price, and Dan Egan on appraisal of Alaska Gold property near Fox for new highway.

### Research:

- a. Appraisal of mineral potential of Fortymile area.
- b. Paper on Alaska Mining for Western Miner submitted on 9/15/76.
- c. Short report on limestone and phosphates for Alaskan agriculture.
- d. Metallurgical balance for mill at Fox.
- e. Coal.

#### Mine Inspections:

- 1. Kirk Stanley near Tok.
- 2. Usibelli.
- 3. Two Wolves Mining Company.
- 4. Dalton and Tonues Mine.
- 5. Joe Taylor mine.
- 6. Four Bear Mine.

#### Other:

Reviewed several OPP's and CPP's for Division of Lands.

Reviewed two CPP's conversion to coal leases for Division of Lands.

#### DIVISION OF GEOLOGICAL SURVEY

### MONTHLY CENTRAL RECORDING WORK SUMMARY

For Period Ending July 25, 1976

	Clai Loc. No	)	Affidavits Of Labor		Deeds	Misc.	Tot	al
	Doc.	Clms.	Doc. Clms.		Doc.	Doc.	Doc.	Clms.
Backlog	2,187	2,187	146	2,368	121	75	2,529	4,555
R :eived	1,229	1,229	26	97	24	10 '	1,289	1,326
Processed	2,337	2,337	0	o	0	71	. 2,408	2,337
Backlog	1,079	1,079	172	2,465	145	14	1,410	3,544
C ulative received since Jan. 1	3,413	3,413	163	2,394	149	81	3,806	5,807
Conulative processed since Jan. 1	3,666	3,666	245	4,917	100	117	4,128	8,583

#### REMARKS:

Pat Dieterich Carole Stevenson

The Mining Information section has completed the computer run of the Kardex System. All information has been forwarded to John Baxandall. Hired Mildred Brown to help plot and process the mining claims that have come in from the first of the year. She has processed 2,408 claims and gives us a backlog of 1,410.

Total visitors for the month 174. Visitors for Publications  $\frac{30}{204}$ 

## ACTIVITY REPORT

Mining Informat	ion Section			
•	•			
Requests answered	: 			
	<u>Mail</u>	Teleph	one	
			<del>2</del> 1.	
Distribution:				· · · · · · · · · · · · · · · · · · ·
	Information Circulars	Report	<u>s</u> -	•
	200	· .	_ Geologic	
			_ Geochemical	
•			_ Miscellaneous	
Xeroxing 1,0	60pages	2408 H	accuracy -4	/ <del>/ -</del> -
Number of visitor	1. 1			·
		•		
		• .	•	

### DIVISION OF GEOLOGICAL SURVEY

### MONTHLY CENTRAL RECORDING WORK SUMMARY

For Period Ending August 25, 1976

	Claim Loc. Notices		Affidavits Of Labor		Deeds	Misc.	Tot	:a1
	Doc.	Clms.	Doc.	Clms.	Doc.	Doc.	Doc.	Clms.
B :klog	1,079	1,079	172	2,465	145	14	1,410	3,544
Received	895	895	55	197	28	690	1,668	1,092
P cessed	1,732	1,732	116	1,262	91	696	2,635	2,994
Backlog	242 -	242	111	1,400	82	. 8	443	1,642
Cumulative received since Jan. 1	4,308	4,308	218	2,591	177	771	5,474	6,899
C ulative processed since Jan. 1	5,398	5,398	361	6,179	191	813	6,763	11,577

#### MARKS:

Pat Dieterich Carole Stevenson

Have processed all documents from the Recorder thru July of 76. Processed 1,668 documents this month.

Total visitors for Mining Information 118.

Cam Cidaria

#### DIVISION OF GEOLOGICAL SURVEY

#### MONTHLY CENTRAL RECORDING WORK SUMMARY

For Period Ending September 25, 1976

	Claim Loc. Notices		Affidavits Of Labor		Deeds	Misc.	Tot	:al
	Doc.	Clms.	Doc.	Cims.	Doc.	Doc.	Doc.	Clms.
B: iklog	242	242	111	1,400	82	8	443	1,642
Received	1,950	1,950	183	1,475	23	563	2,719	3,425
Ph icessed	2,139	2,139	264	2,549	72	551	3,026	4,688
Racklog	53	53	30	326	33	20	136	379
Community received since Jan. 1	6,258	6,258	401	4,066	200	1,334	8,193	10,324
C: mlative processed since Jan. 1	7,537	7,537	625	8,728	263	1,364	9,789	16,265

#### 1 MARKS:

Pat Dieterich Carole Stevenson

Processed 2,139 documents for the month. Made corrections to the Kardex File off the IBM Computer run. The new Microfiche system is now being checked off the computer sheets. Found the new system to be very useful. Mr. Baxandall came up from Anchorage to discuss the Phase II- III of the new system. The second Michrofiche Reader was damaged in shipment.

Visitors - 107

Xeroxing - 395 pages

## ACTIVITY REPORT

Mining | Information Section

Requests answered:	
<u> Mail</u>	<u>Telephone</u>
<u>8</u>	38
Distribution:	
Information Circulars	Reports
130	Geologic
	Geochemical Miscellaneous
	•
Xeroxing 395 pages	
Markon of substance /6.7	
Number of visitors	-