

S

B

6

2

Alaska State Legislature

SENATOR BETTYE FAHRENKAMP
CHAIRMAN, RESOURCES COMMITTEE

4016 EVERGREEN
FAIRBANKS ALASKA 99701

907-479-3550



Senate

WHILE IN JUNEAU
POUCH V
JUNEAU ALASKA 99811
OFFICE 907-465-3763
RESOURCES COMMITTEE
907-465-3804
HOME 907-769-9182

January 25, 1983

Dear President Kerttula:

This letter is to notify you officially as President of the Senate that I have an indirect and personal conflict of interest with Senate Bill #62, "An Act relating to an appropriation for a feasibility study Copper River Basin natural gas for electric power generation." This measure has been referred for consideration to the Senate Resources Committee, the committee of first referral. It has a further referral to the Senate Finance Committee.

This conflict of interest arises from the fact that I have now and have had for five years a financial interest in an oil and gas lease in the Copper River Basin. This legislation would directly aid in the development of leases in this area by studying the use of Copper River Basin gas by local utilities in the generation of electricity.

I have been in contact with the Attorney General and his staff as to the proper and legally correct procedure to follow in this situation. He has advised me that if and when the Resources Committee considers SB 62, I should not chair that committee session. Accordingly, if and when the committee considers this legislation, Senator Ziegler, Vice-Chairman of the Resources Committee, will serve as chairman.

It is my utmost desire to avoid any semblance of impropriety that would reflect upon the integrity of this body or any of its members.

Sincerely,

Senator Bettye Fahrenkamp
Chairman
Senate Resources Committee

BF/jp

SENATE
JOURNAL SUPPLEMENT

1/27/83

No. 2

Alaska State Legislature

SB
62



Senate

January 25, 1983

Dear President Keattula:

This letter is to notify you officially as resident of the Senate that I have an indirect and personal conflict of interest with Senate Bill #62, "An Act relating to an appropriation for a feasibility study Copper River Basin natural gas for electric power generation." This measure has been referred for consideration to the Senate Resources Committee, the committee of first referral. It has a further referral to the Senate Finance Committee.

This conflict of interest arises from the fact that I have now and have had for five years a financial interest in an oil and gas lease in the Copper River Basin. This legislation would directly aid in the development of leases in this area by studying the use of Copper River Basin gas by local utilities in the generation of electricity.

I have been in contact with the Attorney General and his staff as to the proper and legally correct procedure to follow in this situation. He has advised me that if and when the Resources Committee considers SB 62, I should not chair that committee session. Accordingly, if and when the committee considers this legislation, Senator Ziegler, Vice-Chairman of the Resources Committee, will serve as chairman.

It is my utmost desire to avoid any semblance of impropriety that would reflect upon the integrity of this body or any of its members.

Sincerely,

A handwritten signature in cursive script that reads "Bettye Fahrenkamp".

Senator Bettye Fahrenkamp
Chairman
Senate Resources Committee

Alaska State Legislature

BETTYE FAHRENKAMP, Chairman
ROBERT H. ZIEGLER, SR., Vice Chairman
DICK ELIASON
PAUL FISCHER
VIC FISCHER
BOB MULCAHY
ARLISS STURGULEWSKI

POUCH V
STATE CAPITAL
JUNEAU, ALASKA 99811
(907) 465-3834
(907) 465-3835

Senate Committee on Resources

MEMORANDUM

TO: BETTYE

FROM: JIM

RE: WATER WELL DRILLED IN THE COPPER RIVER BASIN WHICH
ENCOUNTERED NATURAL GAS AT SHALLOW DEPTHS.

DATE: JUNE 14, 1983

Re: your request, Kay Brown has had her staff prepare a memorandum on the 1971 water well drilled in the Copper River Basin which encountered natural gas at shallow depths.

Kay's information indicated that the gas encountered in the Copper River Basin (Billy Buck Well) is shallow, biogenic gas and is not in sufficient quantities to sustain commercial production.

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

MINERALS AND ENERGY MANAGEMENT

Pouch 7-034
Anchorage, Alaska 99510

June 10, 1983

JUN 13 1983

The Honorable Bettye Fahrenkamp
Alaska State Senate
Pouch V
Juneau, AK 99811

Dear Senator Fahrenkamp:

The information you requested on the water well in the Copper River Basin is attached. Please let me know if I or my staff can be of further assistance.

Sincerely,


Kay Brown
Director

Attachment: as stated

cc: Esther C. Wunnicke, Commissioner

0794K

MEMORANDUM

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERALS AND ENERGY MANAGEMENT

State of Alaska

TO: Kay Brown
Director

DATE: June 8, 1983

FILE NO:

TELEPHONE NO: 276-2653

Cass
FROM: Cass Arey
Petroleum Geologist

SUBJECT: Billy Buck Well

At your request, I have investigated the results of a 1971 water well drilled in the Copper River Basin which encountered natural gas at shallow depths.

Well data:

Location: SW 1/4 SE 1/4 Sec. 22 T4N R2W CRM

Total depth: 160 feet

Gas-bearing zone: 158-160', two-foot zone of gravel, water, and gas

Gas analysis: Methane 67.20%
Nitrogen 31.89%
Carbon dioxide .51%
Oxygen .40%

Flow rates: (measured by John Miller, then an employee of the state of Alaska)

970 mcf/day on 3/19/71

680 mcf/day on 3/26/71

Comments:

The well, located approximately 1 mile west of Glenallen, encountered gas at very shallow depths. Although gas escaped from the well for approximately 11 days, sediments in the Glenallen area probably do not contain gas that can be produced at sustained rates.

There are two basic types of gas found below the earth's surface: biogenic (biologically produced) and thermogenic (thermally produced). Biogenic gas deposits sometimes known as "swamp" gas are usually shallow (less than 1000' deep) and are known from many parts of the world. These gas accumulations are the product of bacterial activity upon organic matter - the rotting process.

Shallow biogenic gas accumulations can be dangerous because of their unpredictable depths. In areas prone to biogenic gas, water well or oil well drillers may encounter high-pressure gas at any depth and experience a blowout. In the case of the Billy Buck Well, the driller was curious about whether the gas would ignite, so he threw a lighted match down the well bore. It ignited. Such shallow accumulations of gas are usually found in pockets, and gas is not produced in sustained volumes. The shallow flat-lying beds cannot trap gas in economically producible quantities. This is probably the case for the Billy Buck Well, where volumes decreased from 970 mcf/day to 680 mcf/day in one week.

Kay Brown
Page 2
June 8, 1983

Other data which indicate this to be a shallow biogenic gas accumulation are the gas analyses. Gas analyses showed only methane (dry gas) to be present. Thermogenic gas from a deeper, more extensive accumulation would be expected to contain heavier hydrocarbons such as ethane or propane. Tests indicated that the Billy Buck Well showed dry gas only.

If, as the evidence indicates, the gas encountered in the Billy Buck Well is shallow, biogenic gas it will not be located in quantities which could sustain production.

Since 1971, oil industry efforts to locate deeper producible petroleum reservoirs have all failed. The negative results of the deeper wells reinforce the interpretation that the Billy Buck Well encountered a relatively small volume of very shallow biogenic gas.

Other Information:

John Miller, the former state employee who measured the flow rates, is currently employed by BP Alaska Exploration, Inc. His telephone number is: 279-5422.

0910W CA:ctd

1111

REPORT ON "BILLY BUCK" GAS WELL
to
COPPER VALLEY ELECTRIC ASSOCIATION
by
E. N. Fisher
ROBERT W. RETHERFORD ASSOCIATES

ATTENTION: Mr. Keith Maxwell, Manager

Pursuant to a request made by Mr. Keith Maxwell, Manager, C.V.E.A. a study has been made to determine the present status of the gas deposit discovered near Glennallen, Alaska, on March 12, 1971.

On February 15, 1972 a meeting was held with Mr. O. K. Gilbreth, Chief Petroleum Engineer, Alaska Division of Oil and Gas in Anchorage. Mr. Gibleth was quite aware of the discovery and had on at least two occasions visited the site. During part of the meeting Mr. John Miller also of the Division of Oil and Gas was in attendance. Mr. Miller on two occasions measured the flow from the well and participated in plugging it.

A brief chronological history of the well is as follows:

27 days	3/12/71	Discovery date.
	3/14/71	Alaska Department of Oil and Gas contacted by Mr. Buck. Site visited.
	3/19/71	Site visited, flow measured (693 mcf/d from casing (6 inch) 277 mcf/d from around it, total 970 mcf/d).
	3/26/71	Site visited, flow measured (438 mcf/d from casing 242 mcf/d from around it, total 680 mcf/d).
	4/6/71	Well plugged (no flow measurement).

The time from discovery until plugging was 25 days. Reports on the amount of gas flow on the final day are conflicting and in as much as no instruments were available to measure the flow, the reports are based on how the well "sounded" and the flow "felt". There is agreement, however, that there was still substantial flow and no indication that the deposit has nearly exhausted itself.

The deposit was discovered at a depth of approx. 160' while drilling for water on the property of Mr. Wm. Buck. The State's report contained an estimate of 40 psig flowing pressure made by the driller and it was Mr. Miller's opinion that this figure was a maximum. This is further substantiated by the fact that the well cementing crew (Halliburton) was able to seal gas flow from the casing by filling it with water. $(160 \text{ feet} \times \frac{62.4 \text{ \#/ft}^2}{144 \text{ in}^2/\text{ft}^2} = 69 \text{ psig})$.

The geology of the area was not developed in detail however the driller reported breaking through a clay layer just prior to the discovery. Mr. Buck reported to the State that a vertical slip-page (fault) of approximately 3 feet occurred through the well site during the 1964 earthquake. Mr. Miller reported seeing traces of the fault during his visits to the site.

After the discovery the Division of Oil and Gas reviewed the well logs of the nearest exploratory well and found no indication of any shallow gas bearing sands. They were unable to determine from their investigations whether the gas discovered originated from swamp gas or leakage from a deeper gas field.

At the time of the discovery, it was reported, several major oil companies expressed interest in it but with no apparent subsequent development.

It is understood that Mr. Fred Schikora, Northern Gas and Oil Company, Fairbanks, was contacted by Mr. Buck, however, Mr. Schikora apparently developed no lasting interest.

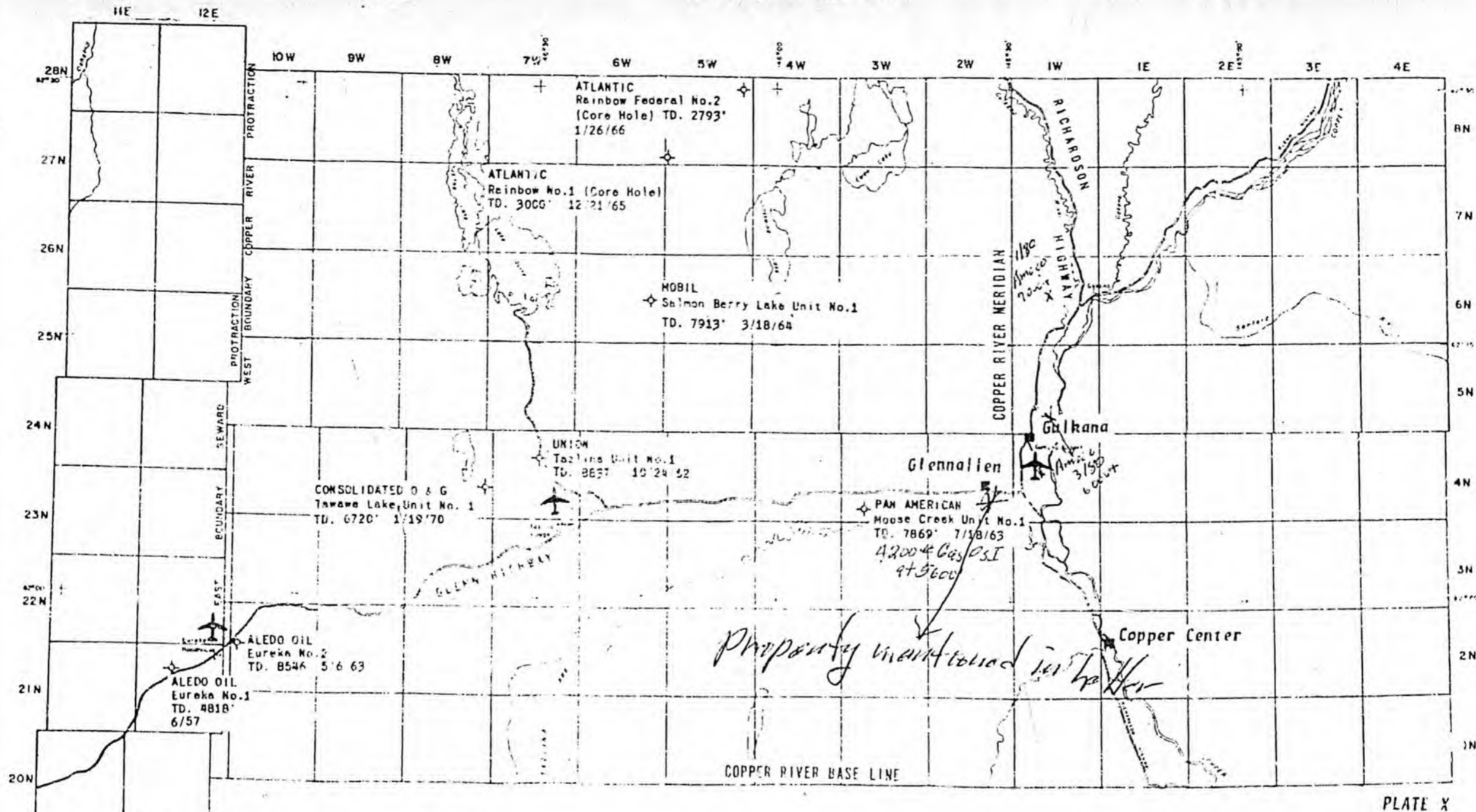
A gas sample taken by the State has the following analysis:

Constituent	
CH ₄ (methane)	67.20
N ₂ (nitrogen)	31.89
CO ₂ (carbon dioxide)	.51
O ₂ (oxygen)	.40
H ₂ O (hydrogen disulphide)	<u>trace</u>
Total	100.00

The absence of hydrocarbons heavier than CH₄ (methane) indicates that the gas is not oil associated gas.

Because funding was unavailable from other sources and because the venting gas posed some hazard to the public, the Governor's Office provided funding to the Department of Oil and Gas to seal the well. This was done on April 6th by setting a plug at approximately 90 feet down the casing and pumping grout through the plug into the casing until it appeared at the surface around the casing. Mr. Gilbreth estimated that it would cost in the range of \$3,000 -- \$5,000 to drill through the plug and develop the well. This figure does not include any gas treating or measuring equipment.

COPPER RIVER BASIN MAP



© COPYRIGHT BY ALASKA MAP SERVICE INC



Scale: 1"=8 miles

PLATE X

Alaska State Legislature

SENATOR BETTYE FAHRENKAMP
CHAIRMAN, RESOURCES COMMITTEE

4016 EVERGREEN
FAIRBANKS, ALASKA 99701

907-479-3550



Senate

WHILE IN JUNEAU
POUCH - V
JUNEAU, ALASKA 99811
OFFICE 907-465-3760
RESOURCES COMMITTEE
907-465-3804
HOME 907-752-9182

January 25, 1983

Dear President Kerttula:

This letter is to notify you officially as President of the Senate that I have an indirect and personal conflict of interest with Senate Bill #62, "An Act relating to an appropriation for a feasibility study Copper River Basin natural gas for electric power generation." This measure has been referred for consideration to the Senate Resources Committee, the committee of first referral. It has a further referral to the Senate Finance Committee.

This conflict of interest arises from the fact that I have now and have had for five years a financial interest in an oil and gas lease in the Copper River Basin. This legislation would directly aid in the development of leases in this area by studying the use of Copper River Basin gas by local utilities in the generation of electricity.

I have been in contact with the Attorney General and his staff as to the proper and legally correct procedure to follow in this situation. He has advised me that if and when the Resources Committee considers SB 62, I should not chair that committee session. Accordingly, if and when the committee considers this legislation, Senator Ziegler, Vice-Chairman of the Resources Committee, will serve as chairman.

It is my utmost desire to avoid any semblance of impropriety that would reflect upon the integrity of this body or any of its members.

Sincerely,

Senator Bettye Fahrenkamp
Chairman
Senate Resources Committee

BF/jp