

STATE OF ALASKA

Keith H. Miller - Governor

DEPARTMENT OF NATURAL RESOURCES

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DIVISION OF MINES AND GEOLOGY

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SUPPLEMENT TO GEOCHEMICAL REPORT NO. 17

A GEOCHEMICAL INVESTIGATION OF THE WOOD RIVER-TIKCHIK LAKES AREA

SOUTHWESTERN ALASKA

By

Gilbert R. Eakins

College, Alaska

March, 1969

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INTRODUCTION

The Alaska Division of Mines and Geology undertook geochemical sampling of stream sediments in the Wood River-Tikchik Lakes area near Dillingham, Alaska, in 1967 (Eakins, 1968). Additional sampling was done in 1968 near Marsh Mountain and Lake Aleknagik (fig 1) to check apparent anomalies. This report concerns the follow-up work.

EARLY ANOMALIES AND NEED FOR RESTUDY

The 372 samples collected in 1967 were analyzed for copper, lead, zinc, molybdenum, and mercury. Analyses for copper, lead, zinc, and molybdenum revealed a single anomaly on a small stream which enters Little Togiak Lake from the south. Analyses for mercury, however, showed anomalies of more than 250 parts per billion at several localities. The main mercury anomalies were in streams entering the southeastern part of Lake Aleknagik and in streams on Marsh Mountain near the Red Top mine.

Additional geochemical sampling was undertaken for two main reasons. First, mercury is geochemically very mobile, and the apparent anomalous concentrations of this metal did not necessarily indicate mineralization in the immediate vicinities. Second, the mercury vapor detector used in the sample analyses is subject to interference from carbonaceous material which was present in some of the samples analyzed.

ADDITIONAL DATA

In 1968, 26 samples were collected from streams entering the southeastern end of Lake Aleknagik (fig 2) and seven samples were collected from Marsh Mountain (fig 3). All were from an anomalous mercury area outlined by sampling in 1967. Twenty-six of these samples were analyzed for mercury. The normal or "background" values were determined from frequency distribution graphs constructed from the 372 earlier analyses. The results are as follows:

<u>Element</u>	<u>Mode</u>	<u>Anomalous Value</u>
Copper	50-60 ppm	100 and over ppm
Lead	20-30 ppm	50 and over ppm
Zinc	120-130 ppm	200 and over ppm
Molybdenum	1-2 ppm	5 and over ppm
Mercury	50-100 ppb	250 and over ppb

The check sampling did not yield anomalous values for copper, lead, zinc, or molybdenum, but showed definite concentrations of mercury. The mercury assays from the 1967 and 1968 sampling are shown on Figure 2.

CONCLUSIONS

Twenty-one of the 26 samples analyzed for mercury yielded anomalous assays (over 250 ppb). The number of samples is insufficient to appreciably change the previous sampling results, but the above-normal values do confirm the anomalies found on Marsh Mountain and around the lower end of Lake Aleknagik.

REFERENCE CITED

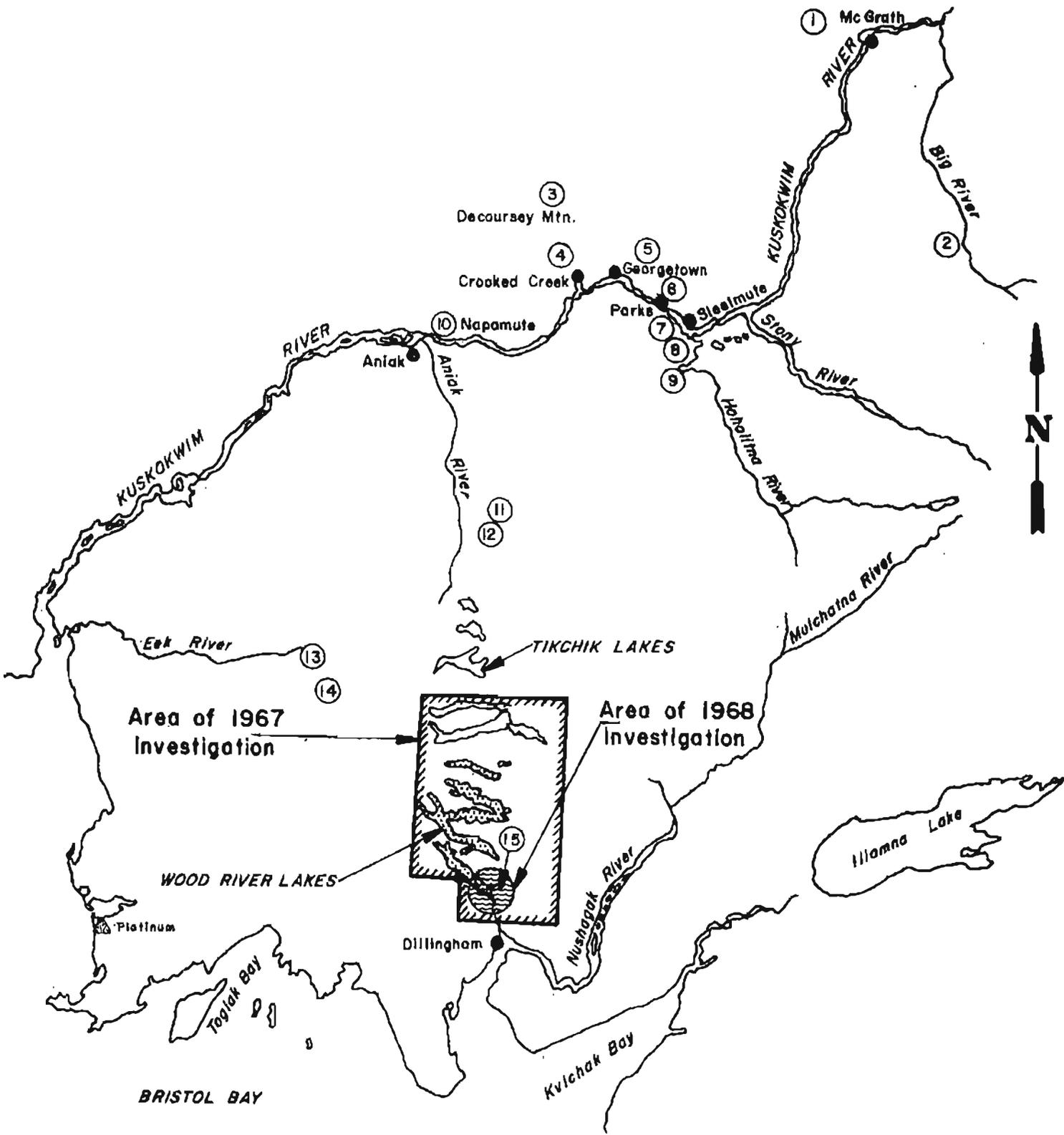
Eakins, G. E., 1968, A Geochemical Investigation of the Wood River-Tikchik Lakes Area, Southwestern Alaska; Alaska Division of Mines and Geology Geochemical Report No. 17, 31p.

GEOCHEMICAL SAMPLING AT MARSH MOUNTAIN
AND LAKE ALEKNAGIK, 1968

Sample Loc. No.	Sample Field No.	Type of Sample	Copper ppm	Zinc ppm	Lead ppm	Mercury ppb
1	8E-53	Soil	50	60	30	1000
2	8E-52	Stream	40	70	25	300
3	8E-56	Soil	65	60	L*	300
4	8E-66	Soil	50	70	25	1130
5	8E-57	Stream	25	70	L*	700
6	8E-58	Stream	40	80	L	IS**
7	8E-60	Stream	25	30	L	550
8	8E-67	Stream	35	60	L	400
9	8E-68	Stream	20	50	L	IS
10	8E-70	Stream	10	50	L	IS
11	8E-33	Stream	20	60	25	160
12	8E-34	Stream	40	50	L	300
13	8E-51	Stream	15	40	25	160
14	8E-50	Stream	10	L	L	900
15	8E-46	Stream	25	50	L	200
16	8E-77	Stream	25	50	L	IS
17	8E-76	Stream	35	30	L	550
18	8E-78	Stream	10	30	L	IS
19	8E-75	Stream	10	L	L	IS
20	8E-79	Stream	35	60	L	1000
21A	8E-73A	Stream	40	30	25	450
21B	8E-73B	Stream	40	80	L	600
22	8E-81	Stream	10	30	L	IS
23	8E-83	Stream	25	75	25	450
24	8E-82	Stream	25	70	L	260
25	8E-85	Stream	40	80	L	750
26	8E-94	Stream	50	100	30	650
27	8E-92	Stream	10	60	L	160
28	8E-93	Soil	40	80	L	300
29	8E-91	Stream	20	70	L	700
30	8E-90	Stream	10	55	L	160
31	8E-87	Stream	20	60	L	450
32	8E-89	Stream	10	50	L	450

* Detected but below 25 ppm

** Insufficient sample for determination

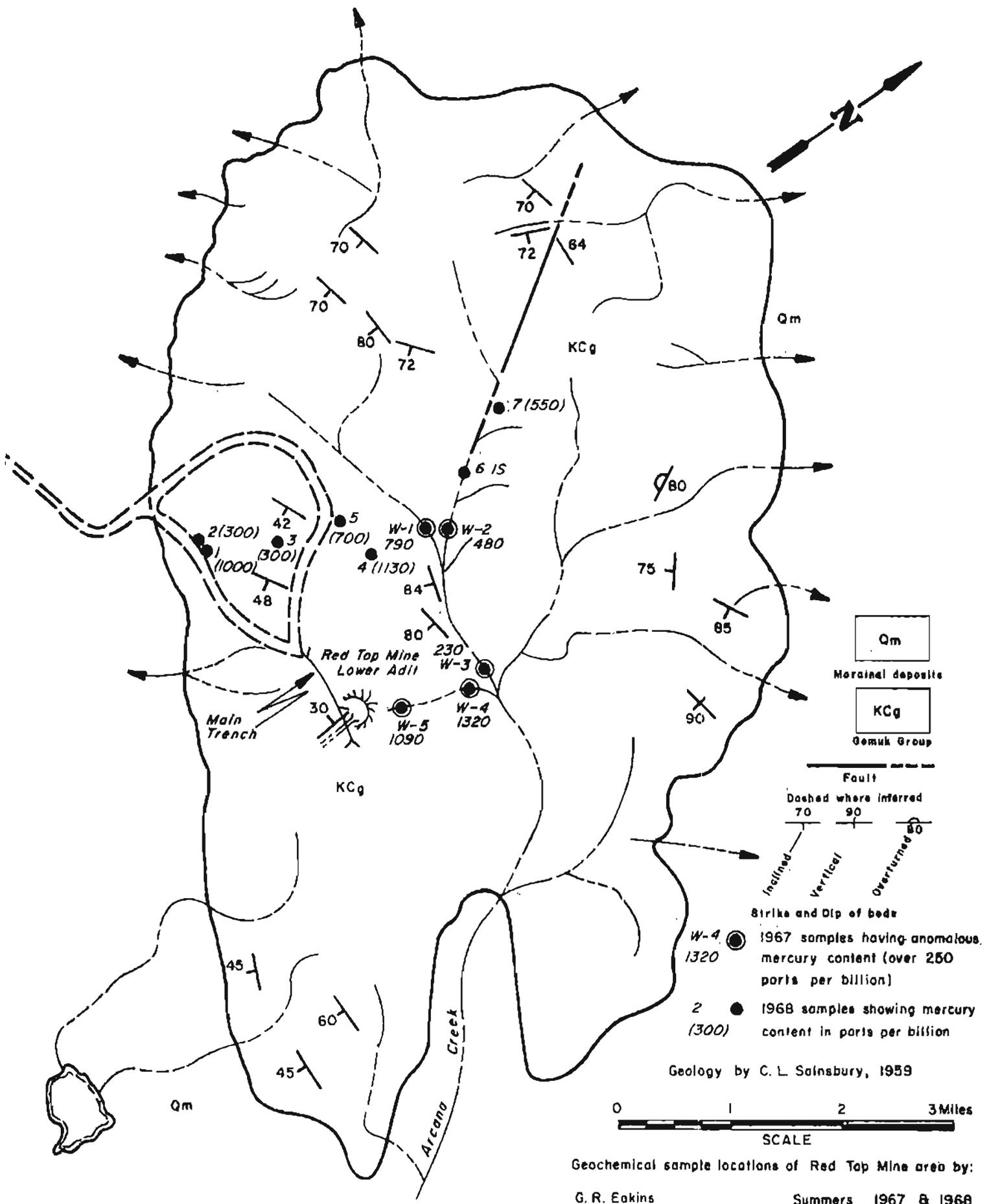


LOCATION MAP SHOWING MERCURY MINES AND PROSPECTS

Ref: U.S. Bureau of Mines Information Circular 8131, 1962 "FIGURE 1"

- | | | |
|-----------------------|----------------------------|----------------------------|
| ① Mount Joaquin | ⑥ Parks (Alice and Bessie) | ⑪ Lucky Day |
| ② White Mountain | ⑦ Red Devil | ⑫ Broken Shovel |
| ③ De Coursey Mountain | ⑧ Barameter | ⑬ Rainy Creek |
| ④ Rhyolite | ⑨ Fairview | ⑭ Kagoti Lake |
| ⑤ Wills and Fuller | ⑩ Kolmakof | ⑮ Marsh Mountain (Red Top) |

Figure 1



MARSH MOUNTAIN AREA

Figure 3