FIELD REPORT - WILLIAM HENRY BAY URANIUM PROSPECT
JULY 1985

On July 26, 1985 the William Henry Bay (Lucky Six) uranium prospect was shown to Dean Warner by Dale Henkins, one of the property's co-owners. The prospect consists of 9 contiguous federal claims and is located approximately 3.5 miles north-northwest of the head of William Henry Bay and approximately 1.25 miles south-southwest of the mouth of the Endicott River in sections 8 and 9, T36S, R61E of the Juneau (D-4) Quadrangle. The prospect area is located on a southeast-trending knoll between the 1800- and 2000-ft elevations and is characterized by gently sloping grassy hills with numerous closed drainages suggestive of pseudokarst topography.

Radiation in the William Henry Bay area was initially discovered by an airborne survey conducted by the Southeastern Mining & Exploration Company, Inc. in the 1950's. Other mining companies, including Noranda Exploration, Inc. and Nippon Mining, have subsequently investigated the property for deposits of precious metals or rare-earth elements.

The prospect was drilled under DMEA contract in the 1950's. Drill holes were oriented to intersect linear zones thought to represent faults along which secondary uranium minerals may be concentrated. Faults were intersected and core recovery was very poor, however a 100 ft representative section was found to contain .022 pct U.

Trace amounts of columbium minerals have been reported from the prospect area. This investigation's major goal was to evaluate potential columbium mineralization; most samples were high-graded in order to determine in what type of material, or if, columbium is present. Results of sample analyses indicate that trace to minor

amounts of Cb, U, Th, La, Y, Sc, Au, Ag, and Mo as well as Pb, Zn, Ba, Sr, and Ti are present at the prospect, but not in sufficient quantities to merit further exploration.

GENERAL DESCRIPTION

The Lucky Six prospect is underlain by an approximately 0.25-mi^2 syenite intrusion that has been cut by several stages of trachyte dikes and carbonatite veins. Carbonatite is best exposed and may be most abundant in the southeastern portion of the intrusion. The pseudokarst topography, however, is compelling evidence for a more widespread occurrence of carbonatite. The carbonatite comprises generally north-northwest-trending hairline to 1-ft-wide veins composed mostly of pure white calcite (soviite) with some feldspar phenocrysts and possible traces of siderite or ankerite and variable amounts of ubiquitous pyrite as well as galena, molybdenite, barite, rutile, coarse green mica, and biotite. The veins are surrounded by carbonate-altered (fenetized?) syenite that consists of feldspar $\pm$ biotite phenocrysts in a matrix of biotite, feldspar, and calcite. Although the syenite has a markedly higher radiation background than the surrounding rocks, the highest values of only 1000 cps are confined to relatively narrow pyritic carbonatite veins or iron-stained shears.

SAMPLING

Eight rock samples were collected from the Lucky Six prospect; results of analyses and descriptions of samples are presented in tables 1 and 2. Results indicate that samples of carbonatite (62, 64, 65, and 66) contain trace to minor amounts of Cb, U, La, Y, Sc, Au, Ag, Mo, Pb,

Zn, Ba, Sr, and Ti. Samples of wall rocks (63 and 61) to carbonatite also are enriched in U and Sc(?) and a sample of a trachyte dike that cuts hornfels adjacent to the pluton's southwest margin contains 180 ppm Th. None of the values is considered significant. The correlation of relatively high columbium, uranium, and titanium concentrations suggests that the columbium is present within a U-Cb-Ti phase that may be euxenite.

DISCUSSION

Eakins considered the intrusion at William Henry Bay to be Tertiary in age. Relative alignment and possible correlation of the William Henry Bay carbonatite complex with possible carbonatite at Salmon Bay on northern Prince of Wales Island, after removal of 200 km of right-lateral offset along the Chatham Strait fault, however, suggests the carbonatite could be middle Paleozoic in age. If so, the William Henry Bay prospect may be part of a middle Paleozoic easterly-trending alkaline to peralkaline intrusive and carbonatite province that includes prospects at Bokan Mountain and Salmon Bay(?) on Prince of Wales Island, and Kook Lake on Chichagof Island.

BIBLIOGRAPHY

Eakins, G. R. Uranium Investigations in Southeastern Alaska. AK Div. Geol. and Geophys. Surv. G.R. 44, 62 pp.

Lathram, E. H., R. A. Loney, W. H. Condon, H. C. Berg. Progress Map of the Geology of the Juneau Quadrangle, Alaska. U.S. Geol. Surv. Misc. Geol. Inv. Map I-303, 1959.

MacKevett, E. M., Jr. Reconnaissance for Uranium in Alaska, in Geologic Investigations of Radioactive Deposits. U.S. Geol. Surv. Tech. Inf. Service Extension Pub. TEI-700, 1957, 287 pp.

TABLE 1. - Results[1] of analyses of rock samples from the William Henry Bay (Lucky Six) prospect, in ppm unless otherwise indicated.

22.1 ppm
4.1
2.5
3.0
3.4
1.2
1.1
2.7
neutron act. by B-C 4-87

Sample	Type	Width(ft)	U	Th	Au	Ag	Cb	La[2]	Y[2]	Sc	Mo
059	H	0.5	3.8	180	0.048	0.670[3]	LD	LD	20	LD	LD
060	Ch	R	1.5	<50	.025	LD	LD	40	40	~~800~~ .8 pct	LD
061	Ch	R	35.0	<50	.056	LD	LD	LD	100	>3.0 pct[4]	LD
062	Ch	R	4.7	<50	.044	8.115	LD	90	100	0.2 pct[4]	LD
063	Ch	R	17.0	<50	.030	.440[3]	LD	40	40	.2 pct[4]	LD
064	H	NA	15.0	<50	.032	LD	60	LD	100	>3.0 pct[4]	LD
06~~0~~5	H	NA	0.62	<50	.045	10.56	LD	LD	20	400	120
066	H	NA	105.0	<50	.024	LD	160	LD	20	200	120

H - High-graded sample; NA - Not applicable; Ch - Chip sample; R - Random sample

[1]Cb, Ta, Sn analyses by XRF; Mo by A.A.; REE and Sc by Wadsworth spectrographic technique; Au and Ag by Fire Assay-ICP; U and Th by radiometric techniques.

[2]All other REE below detection limits.

[3]Result is near detection limit and must be interpreted accordingly.

[4]Ken Broadhead is suspicious of these high values.

Sample	Field Descriptions
059	Trachyte(?) dike with disseminated and veinlet pyrite and manganese and hematite staining. Cuts hornfels on SW margin of pluton. Runs 1000 cps. Dale Henkins said vein should be rich in Th and REE.
060	Unweathered, fine-grained (chilled?) border phase of syenite. Consists of up to 1 cm feldspar laths in fine siliceous-looking matrix. Lots of grey-black metallics(?). Abundant secondary greenish micas and tan carbonate.
061	Syenite. 1- to 1.5-cm-wide feldspar laths in a matrix of green (secondary?) micas. Up to 1 pct disseminated or fracture-controlled pyrite and abundant disseminated grey-blue metallic.
062	Carbonate (soviite) vein material from dump. Veins vary from 0.5- to 4-in-wide. Mostly calcite with some feldspar phenocrysts and possible traces of siderite or ankerite with variable amounts of ubiquitous pyrite, abundant galena, local molybdenite, trace rutile, coarse green mica, and large biotite crystals.
063	Fenetized(?) wall rocks to soviite veins. Coarse 1- to 2-cm-wide tan-colored calcite crystals in a moderately coarse matrix of biotite, feldspar, and calcite. Pyrite up to 2 pct disseminated.
064	Tan- to white-colored calcite with up to 0.5 pct disseminated pyrite and possible rutile(?) in a biotite-carbonate-feldspar matrix. Sample high-graded for its rutile(?)-elongated bluish-grey metallic mineral.
065	Galena $\pm$ molybdenite-bearing carbonate with disseminated pyrite and patches of green mica. Cobbles and boulders in rubble. Float suggests thickness of up to 1 ft and length of 30 to 50 ft.
066	Buff-colored 1-cm-wide carbonate vein with hematite-stained pyritic center in foliated syenite with matrix of green mica. 600 cps.

Table 2.

RENO RESEARCH CENTER
SPECTROGRAPHIC LABORATORY REPORT

SUBMITTED BY-ALASKA
DATE SUBMITTED-10/1/85

DATE COMPLETED-12/17/85
OPERATOR-PAC
RUN NO.-470-#044

SAMPLE NUMBERS

ELEMENTS	AF5-059	AF5-060	AF5-061	AF5-062	AF5-063	AF5-064	AF5-~~065~~ 066	AF5-~~066~~ 065
	CONCENTRATION, PERCENT							
AG	<.003	<.0005	<.0005	<.002	<.003	<.0005	<.002	<.0005
AL	>4.	>5.	>5.	>4.	>4.	>4.	.9	>5.
AS	<.009	<.009	<.03	<.01	<.03	<.009	<.009	<.01
AU	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002
B	<.006	<.006	<.005	<.004	<.003	<.006	<.003	<.007
BA	.4	.08	2.	1.	2.	>6.	.7	>6.
BE	.001	.0004	.0003	<.0001	.0005	<.0001	<.0001	<.0001
BI	<.02	<.01	<.01	<.01	<.01	<.02	<.01	<.03
CA	<.05	2.	9.	>10.	>10.	10.	>10.	3.
CD	<.0005	<.0005	<.0005	<.0005	<.0005	<.0005	<.0005	<.0005
CO	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
CR	<.0008	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003	<.0003
CU	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006
FE	6.	4.	5.	4.	6.	2.	2.	2.
GA	<.0003	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0005
K	>10.	>10.	>10.	<2.	>10.	>10.	<.6	>10.
LA	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
LI	<.002	<.002	<.002	<.002	<.002	<.002	<.002	<.002
MG	.04	.9	1.	.3	2.	.5	.2	.5
MN	.04	.5	>2.	>8.	>4.	>2.	>9.	.7
MO	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
NA	10.	6.	<.3	<.3	4.	2.	<.3	<.3
NB	<.007	<.007	<.007	<.007	<.007	<.02	<.007	<.007
NI	.001	<.0003	<.0003	<.001	<.002	<.0002	<.0006	<.0005
P	<.7	<.7	<.7	<.7	<1.	<.7	<.7	<.7
PB	<.002	<.002	<.002	.2	<.003	<.003	.3	<.003
PD	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
PT	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006	<.0006
SB	<.06	<.06	<.08	<.06	<.1	<.06	<.06	<.06
SC	<.0004	<.0004	<.0004	<.0004	<.0004	<.0004	<.0004	<.0004
SI	>10.	>10.	>10.	>10.	>10.	>10.	2.	>10.
SN	<.002	<.0006	<.002	<.002	<.003	<.0006	<.0006	<.0006
SR	.001	.03	.3	.5	.5	.4	.6	.1
TA	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02
TE	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
TI	.1	.1	.2	<.03	.2	.1	<.03	.1
V	.03	<.005	<.005	<.005	.02	<.005	<.005	<.005
Y	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
ZN	.0008	.006	.02	.06	.02	.02	.1	.005
ZR	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003

REMARKS

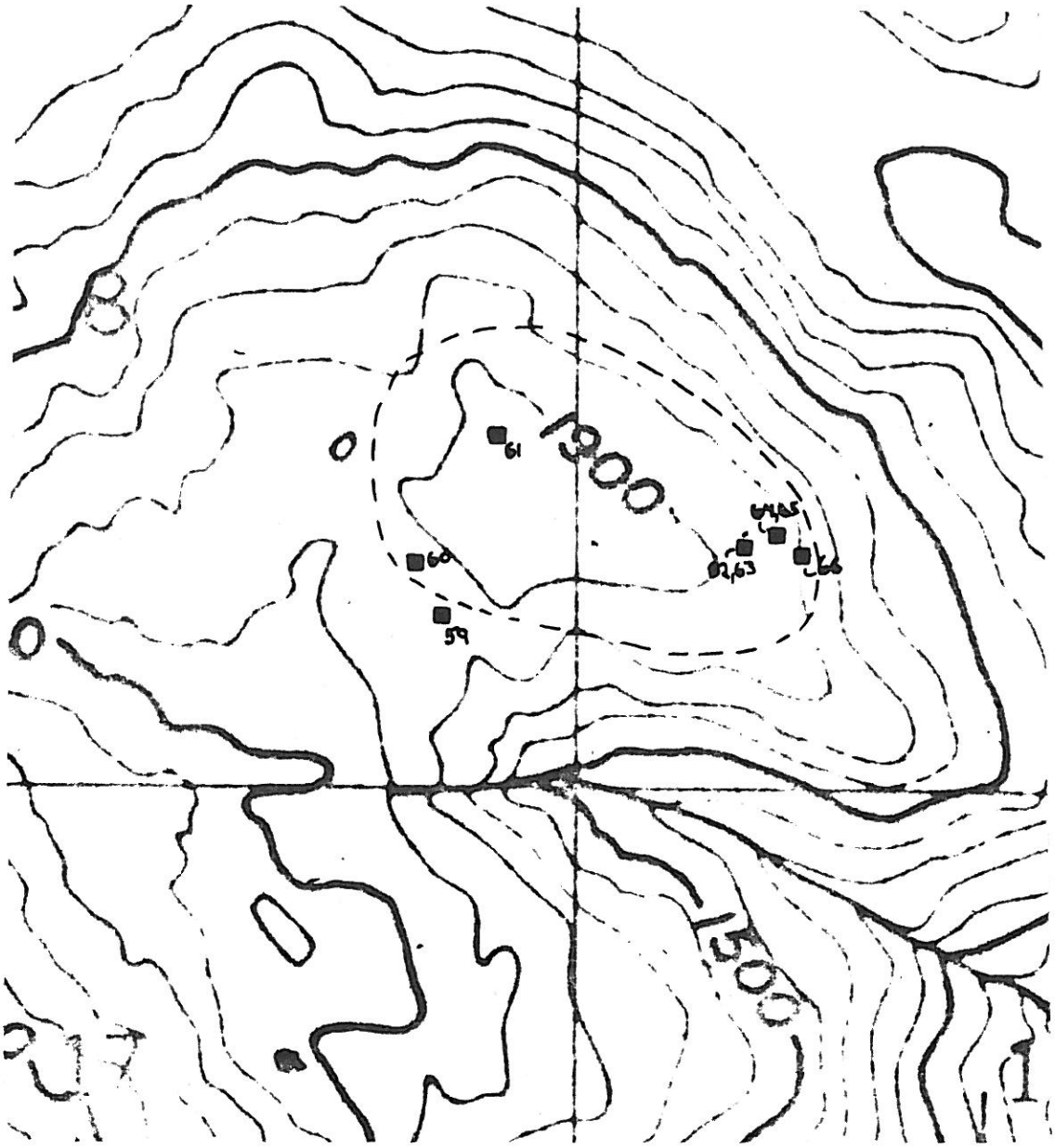

Figure 1.- Generalized outline of syenite intrusion and sample locations at the William Henry Bay (Lucky Six) prospect. Scale is 1 inch to 1000 feet.