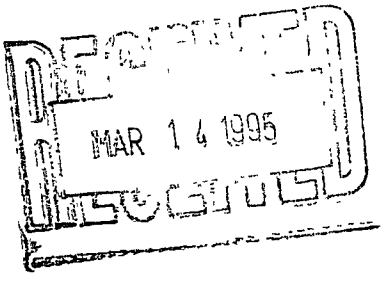
A Report on the 1994 Grassroots Prospecting Season



By: Eugene Curley

94-082

A Report on the 1994 Grassroots Prospecting Season

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Summary:

A total of 33 days were spent prospecting in the Dawson area between August 14 and September 30, 1994. The area prospected is located on the NTS Map Sheets 115.0.15, 115.0.16, and 115.P.13. The area is bounded by Hunker Creek an Dominion Creek on the west and runs along the Dawson Highway to Gravel Lake as outlined on the accompanying maps. A very limited amount of work was done on Eldorado Creek 115.0.14.

This area was chosen to prospect because of the possibility of finding diamond bearing kimberlites, lamproites, or diamond bearing gravels. Gem quality diamonds have been recovered from gravels in this area. Other mineral occurrences in this area include gold and silver.

The geology of the area between Flat Creek and the Dawson Highway southeast to Gravel Lake consists of a thick layer of gravel of undetermined depth. The gravel is mostly unsorted but in places shows evidence of stream sorting.

The geology south of Flat Creek from Black Creek to the junction of Hunker Creek and the Dawson Highway consists mostly of mica shists, quartzites, and some Gneiss, white granitic boulders of local origin were observed near the headwaters of Black Creek as indicated on

the accompanying map. A belt of ultra mafic rocks occur between Flat Creek and its conjunction with the Dawson Highway and extend northwest to Hunker Creek and across the Klondike River.

Pan sampling was done for heavy minerals, diamonds, indicators, and gold along the Flat River and its tributaries, locations are indicated on the accompanying maps. Pan samples were also taken from gravel pits along the highway from Gravel Lake to Flat River. Several pans were taken at each location and consolidated for further examination. Examination and analysis of these samples will be completed in 1995. copies of any positive results will be submitted to this file.

Numerous highly mineralized quartz float boulders occur in the 115.0.16 area, southeast of Flat River. A sample from one boulder LS941 was assayed for gold plus 30 elements. the sample was not anomalous in gold. Sample DS942 was a green brecciated rock taken from the ultra mafic rock at that location which at first was thought to be kimberlite but was proven otherwise. Samples 943 and 944 were also brecciated ultra mafics and did not contain gold. Sample DS 945 was taken from a reddish stained quartz vein cutting shist. The vein was 17 inches wide and is located between Hunker Creek and Mt. Liatta as indicated on the map. This vein was not anomalous in gold.

Mineralized quartz float was observed near the headwaters of Allgold Creek and also Jensen Creek. These areas are marked by asterisks on the map and require further examination in the future.

A yellow clay gravel deposit containing fine gold is located on the right limit of the Flat River approximately four miles from its confluence with the Klondike River. This deposit contains layers of sorted gravels separated by bands of clay silt. This outcrop is a sheer cliff face which forms a ridge that continues from Flat Creek to the Dawson Highway, a distance of approximately five miles. This ridge was prospected along its length but the yellow gravels were not exposed anywhere along its length, due to moss and deep gravel overburden. Proper sampling of this deposit, due to its sheer cliff face where it outcrops on Flat Creek, is very difficult.

Limited pan sampling was done on Eldorado Creek for diamond indicator minerals. Results were not encouraging and the samples were discarded.

Limited examination of exposed quartz veins was carried out along the Eldorado Creek area. Research has revealed the location of extremely high grade quartz float containing visible gold that was uncovered during the gold rush. The area is currently under claim.

Access to the area prospected was by helicopter, 4 x 4, ATV, and on foot. Trails in the area were used where possible.

Conclusion:

The Dawson area has definite potential for high grade gold vein deposits, low grade high tonnage gold deposits, and also diamond bearing gravels and hardrock diamond deposits of economic value.

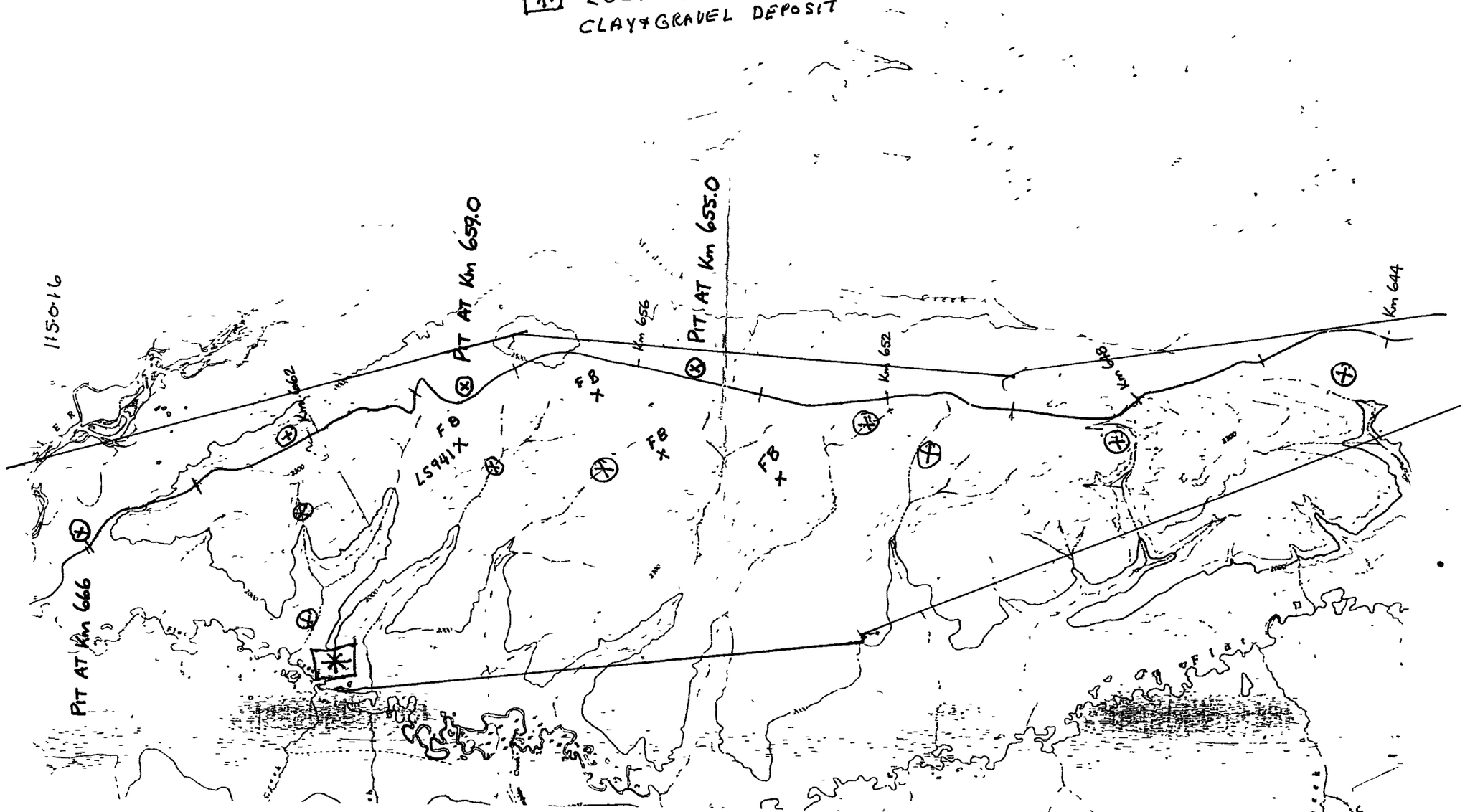
Eugene Curley

FB X FLOAT BOULDERS

⊗ PAN SAMPLE LOCATIONS

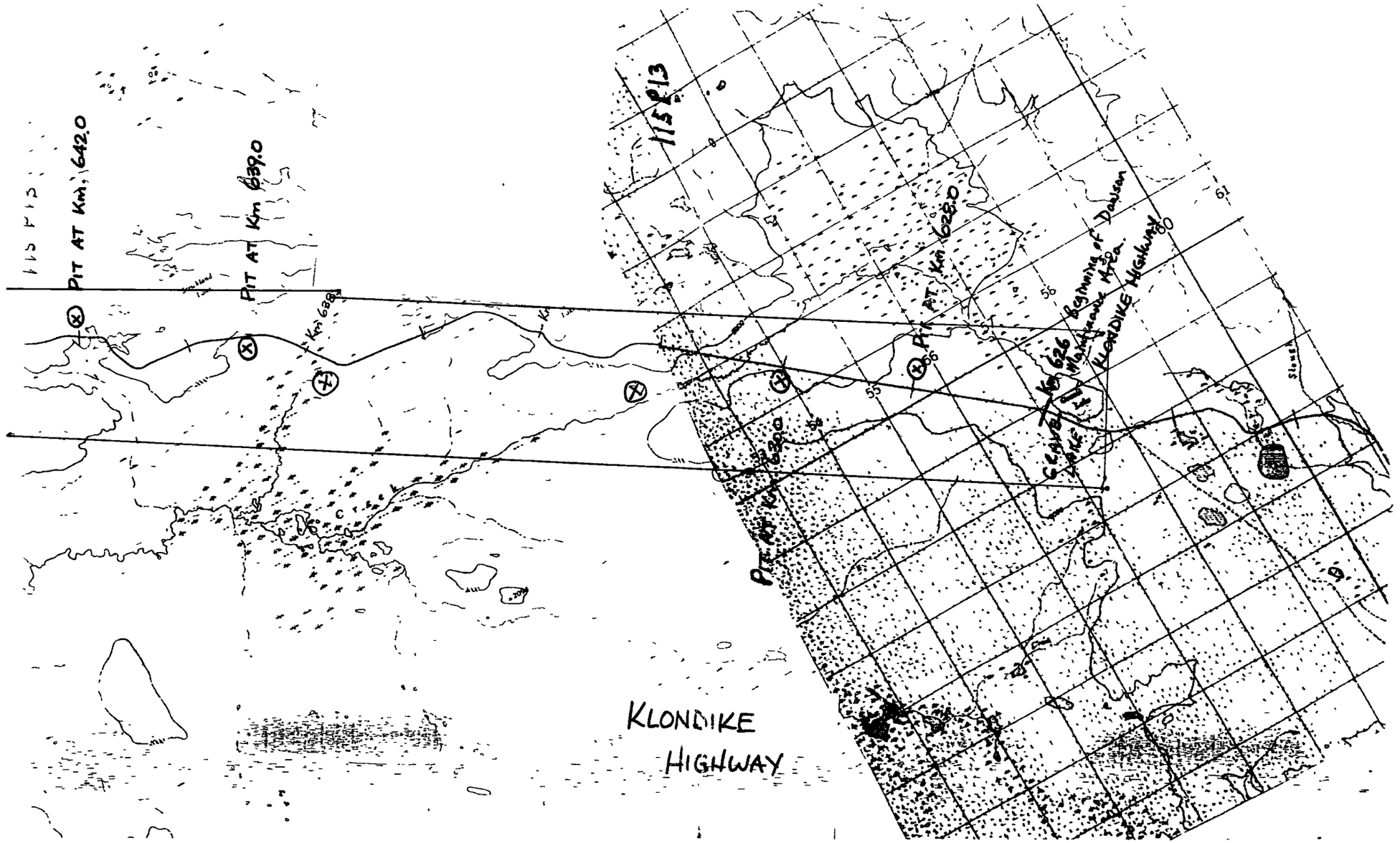
LS941 BOULDER ASSAY LOCATION

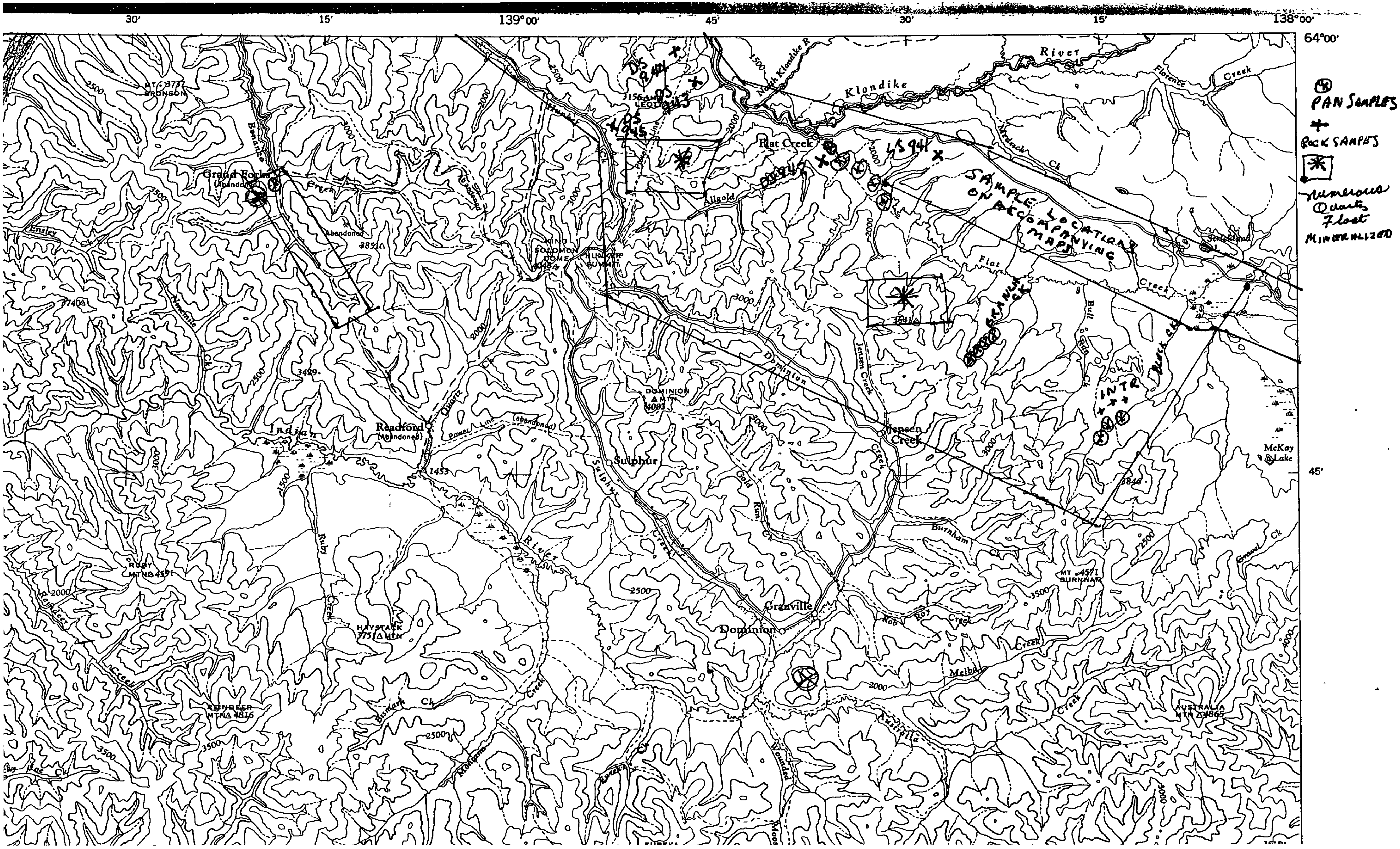
[*] LOCATION OF YELLOW CLAY & GRAVEL DEPOSIT



⊗ PAN SAMPLE LOCATIONS

PROSPECT AREA OUTLINED IN BLUE

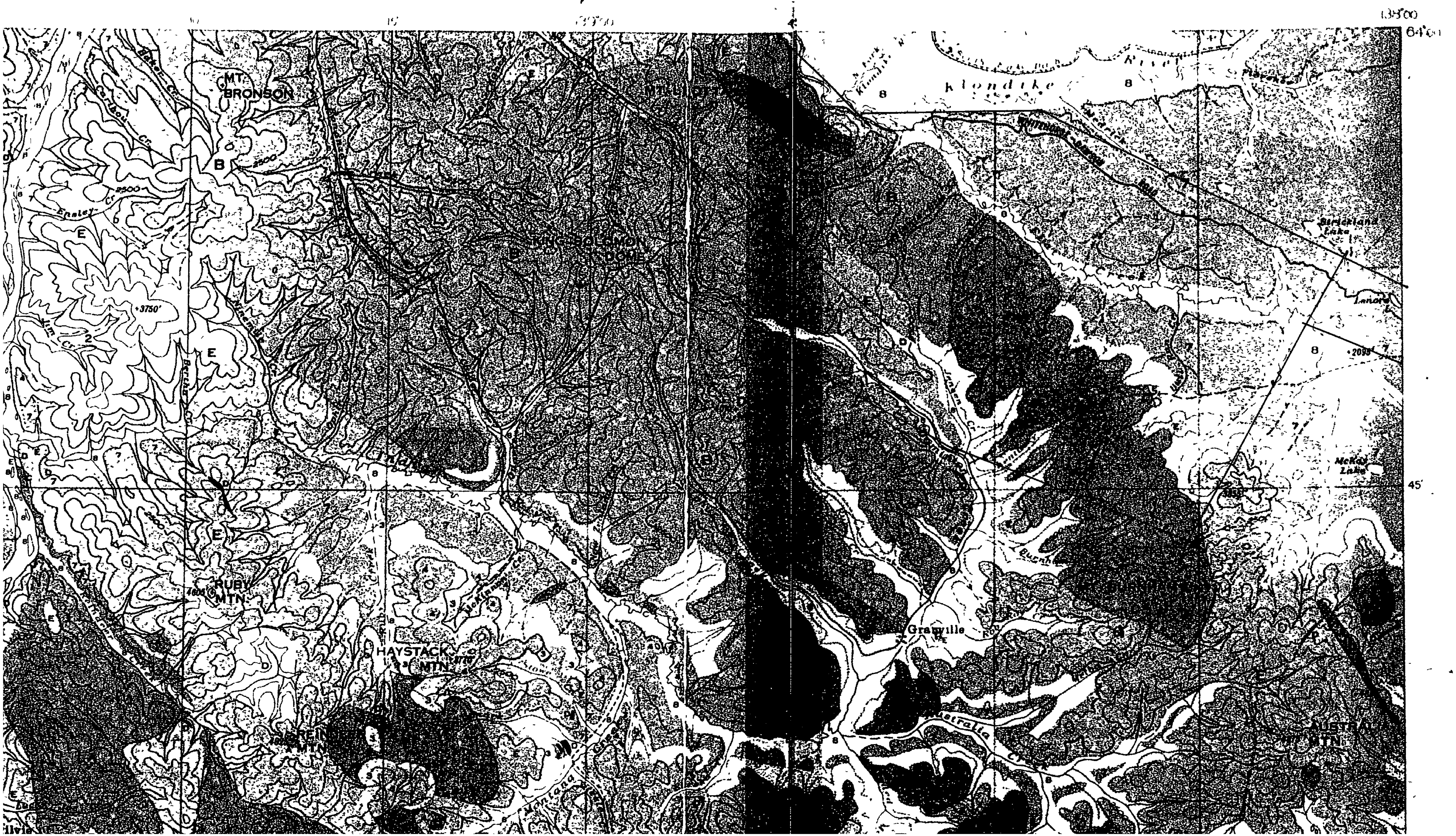




30'
15'
139°00'
45'
30'
15'
138°00'
64°00'
45'
PAN SAMPLES
ROCK SAMPLES
Numerous Quartz Float
MINERALIZED
SAMPLE LOCATIONS ON ACCOMPANYING MAPS
Klondike
River
North Klondike R
Florence
Creek
Flat Creek
Allgold
Grand Forks
(Abandoned)
Bonanza
Creek
MT. 3737
BRONSON
Ensley
Ck
3851
Abandoned
KING SOLOMON DOME
4048
HUNKER SUMMIT
Hunker
Ck
3156
LEOTA
3740
Ninemile
3429
Indian
Readford
(Abandoned)
Quartz
Power Line (abandoned)
1453
DOMINION MTN
4003
Dominion
Jensen Creek
Sulphur
Creek
Gold Run Ck
Flat
Creek
Bull
Ck
Strickland
McKay Lake
3841
3846
Burnham
Ck
MT 4571
BURNHAM
Gravel Ck
Rob Roy Creek
Granville
Dominion
Melba
Creek
Australia
Creek
AUSTRALIA MTN 4865
RUBY MTN 4591
Ruby
Creek
HAYSTACK 3751 MTN
Reindeer
Creek
REINDEER MTN 4816
Bismark Ck
Montana
Eureka
Wounded
Moose
River
2000
2500
3000
3500
1500
4000
INTR
GRANITE
DS 9413
DS 9412

BUREAU OF GEOLOGY AND TOPOGHAPHY

PROSPECT AREA



the syncline. The angle of dip of the strata is generally between 20 and 50 degrees. Micaceous quartzites, mica schists, and mica gneisses predominate in the southwest and on Australia Creek and probably constitute the lowest part of the group present in this district. They appear to be overlain by an assemblage containing a large proportion of hornblende-feldspar gneiss and this, in turn, is succeeded by strata of all types among which limestone (D) becomes increasingly abundant toward the top of the section. Near the principal limestone zone, and for a few miles on either side of the synclinal axis, the strata of various places are less altered and include more graphitic phyllites and slates than elsewhere. Contact metamorphism is exceptionally intense near some of the intrusive bodies. Southeast and east of Mount Burnham the Yukon Group is cut by abundant dykes of pegmatite.

The Palaeozoic strata (1) in the northeast corner of the map-area form part of a large area of these rocks. They consist mainly of well bedded, black, grey, and brown argillite, brown sandstone, and pebble-conglomerate. Some of the strata are calcareous. Others are siliceous and cherty. Two miles northeast of the map-area, fossils of Ordovician or, more probably, later Palaeozoic age were found in what are believed to be the same rocks. The beds are cut by andesite dykes. They show none of the regional metamorphism of the Yukon Group (E), the Klondike schist (B), or the gneissic granite (A).

A number of small, basic to ultrabasic intrusions (C) lie in three northwest-trending belts. The dykes and boss near Australia Mountain are of serpentinized peridotite. The smaller dykes are much sheared and slickensided and, in places, are schistose, but the larger bodies, such as that on Mount Leotta, are quite massive. A body of massive, coarse, green pyroxenite forms Pyroxene Mountain. To the northwest on Black Hills and Eldorado Creeks, are bodies, including dykes too small to map, of diabase, hornblende-rich gabbro, hornblendite, pyroxenite, and peridotite. They show little shearing but a few are foliated. Two irregular bodies and a number of unmapped dykes of pyroxenite and gabbro occur near White River. They are partly serpentinized and, in places, are somewhat foliated. All these basic rocks intrude the Yukon Group. On the whole they are less sheared and less distinctly foliated than the adjacent granitic intrusions. The little available evidence indicates that they have been intruded by the granitic rocks and that they may not all be of the same age.

The KLONDIKE SCHIST (B) is typically a light-coloured, massive, sericitic rock containing much quartz, commonly in corrugated lenses a small fraction of an inch thick. It grades through feldspathic quartz-mica schist to augen-gneiss (A) and to more massive granitic types. Small bodies of schist similar to the Klondike schist occur in the area of gneissic granite on Henderson Creek. The Klondike schist truncates strata of the Yukon Group, holds inclusions of these rocks, and otherwise exhibits characteristics of an intrusive rock.

The greater part of the main bodies of gneissic granitic rocks (A) are close to granite in composition but some of the smaller bodies are of granodiorite and quartz diorite. Remnants of larger feldspar or quartz crystals lie in a foliated groundmass of feldspar, quartz, mica, chlorite and, less commonly, hornblende, tourmaline, and garnet. Parts of the larger bodies may be only slightly gneissic. Other parts have been crushed and sheared to form fine-grained rocks. All gradations exist between these extremes and are well exemplified by the granite body that extends northwestward from Mount Burnham. Many dykes and sills of gneissic granite, aplite, and pegmatite, related to the larger gneissic granite bodies, lie in the Yukon Group strata near contacts with the gneissic granite.

East of the Yukon and north of Indian River is a stock of coarse, grey granite (2). The rock is not foliated and is sheared in only a few small areas. The large granitic body exposed on either side of Scroggie and Walhalla Creeks (2) is a coarse white granite near the junction of these creeks but, farther south and east, is more nearly a granodiorite and carries large pink feldspar crystals. Along its southern contact is a zone composed mainly of hornblende and pink feldspar. The body contains numerous zenoliths of the Yukon Group and innumerable pegmatitic intrusions that, in places, make up fully 30 per cent of the volume of the rock.

A clastic assemblage (3) consisting of conglomerate, sandstone, arkose, greywacke, shale, and tuff lies unconformably on rocks of the Yukon Group (E) and associated intrusions (A, B, and C) and is overlain by lavas of the Carmacks Group (4). Over 500 feet of, chiefly, conglomerate is exposed on McKinnon Creek. Here pebbles and grains of white vein quartz make up the greater part of the rock. Other pebbles are of quartzite, gneiss, and schist, and, like the vein quartz, are derived from the underlying Yukon Group. The pebbles are rounded and few are over two inches long. With the conglomerate is interbedded some sandstone and carbonaceous shale, the latter containing thin seams of coal. Fragments of plants are common. The formation is cut by a number of dykes of rocks lithologically similar to the overlying lavas. The areas of these sedimentary rocks to the south consist of similar strata but those west of Yukon River hold detrital materials from various formations including some that are not present in the map-area. Volcanic materials of the Carmacks Group (4) are intercalated with the upper beds of these sedimentary deposits. The strata dip at angles up to 35 degrees. The area fringed by these rocks west of Yukon River forms a syncline trending northwesterly with a minor anticline in it extending up Galena Creek. Along the power ditch between the forks of Klondike River are beds of conglomerate, shale, clay, and lignite (3) that have been correlated tentatively with the strata described above. They form part of a sedimentary basin that extends for over 50 miles to the northwest, in parts of which plants regarded as of Eocene age have been found.

The CARMACKS GROUP (4) of volcanic rocks is predominately andesitic in composition. West of Yukon and north of Sixtymile Rivers the strata appear conformable with the underlying Tertiary beds (3). On either side of McKinnon Creek they occur as sheets that cut through and overlie the sedimentary beds. South of Sixtymile River a large part of the lavas are light-coloured, include more of the acidic varieties than elsewhere, and, in places, appear to be intrusive. The acidic types resemble the Tertiary intrusive rocks (5) but have typically volcanic textures. In almost all parts of the map-area are a few dykes resembling the volcanic rocks, and in the area west of Yukon River, north and south of White River, such dykes are abundant.

Three porphyritic bodies (5) that range from granite to syenite lie in the southern part of the area and are regarded as of Tertiary age because of their resemblance to some of the Tertiary volcanic rocks. They intrude the Yukon Group but their relationships to other formations are not known. Miarolitic textures are common.

Remnants of a basalt lava flow of the SELKIRK SERIES (6), as much as 100 feet thick, lie on both sides of Rosebud Valley. In places the base of the flow is less than 40 feet above the creek.

Deposits of stream gravels (7) lie on rock terraces and on high saddles in the ridges close to the level of the upland surface. The great deposits of Flat, Rosebud, and Valley Creeks and of Indian River, and the White Channel gravels of the Klondike are believed to have accumulated more or less contemporaneously and all are stream deposits. The White Channel deposits along Bonanza, Hunker, and other creeks draining into Klondike and Indian Rivers formed solely from the rocks in their respective valleys, whereas gravels along Flat Creek contain great quantities of detritus from the Ogilvie Mountains to the north, and those of Stewart Valley from the country to the southeast. The gravel terraces in the valleys of Stewart River and Rosebud Creek contain distinctive chert, chert breccia, and conglomeratic material from Pelly River, not found on the upper Stewart River. The gravels are over 200 feet thick on Bonanza Creek and along Yukon River, and over 500 feet thick on Flat and Rosebud Creeks. Large deposits occur along Valley and Rosebud Creek valleys up to an elevation of 2,300 feet, and chert pebbles characteristic of these gravels were observed as high up as 3,000 feet. The deposits filled Stewart Valley and were carried through the lowest pass to Australia Creek and down the valley of Indian River to its mouth. Subsequent uplift has led to the re-excavation of the valleys through the gravels into the rock floor beneath and the formation of the lowest rock terrace. Recent stream deposits (8) floor the valley bottoms and flood plains. They rest on the lowest bedrock surfaces of their respective areas.

The area mapped includes all but the northern fringe of the Klondike placer district. Though its deposits were discovered nearly fifty years ago they are still an important source of gold and promise to be so for some time to come. In other parts of the area, notably the central and southern, a number of creeks have, in the past, been found to carry gold placers of some importance. These have been found in the gravels of both the recent (8) and older (7) stream deposits. Most of these creeks have still to be investigated by drilling or other modern methods. The possibilities of lode mining are largely unexplored. Though the areas of the Yukon Group adjacent to the intrusive rocks present features favouring lode deposits, there have been few discoveries and none has yielded a profitable production.

63°00'
30'

'00
64°00'

DESCRIPTIVE NOTES

Ogilvie map-area has not been glaciated. Outcrops are scarce and are confined mainly to ridge tops, steep south-facing slopes, and stream-cut banks. Rock fragments in the soil commonly reveal the nature of the underlying bedrock.

The area is one of long ridges with steep sides and of narrow, V-shaped valleys. The tops of the ridges are rounded and exhibit a general uniformity of elevation but include no appreciable plateau areas. The accordant summit levels represent an erosion surface developed in Tertiary time and, since entrenched to depths of over 2,000 feet by the main rivers. The upland surface truncates all the rock formations except the lava flows in Rosebud Creek.

The main river valleys and their tributaries are bordered by remnants of rock terraces at many levels. The terraces record periods of relatively stable base level during uplift and dissection of the upland surface. The lowest terrace is the most persistent. In the lower part of Stewart Valley, near Scroggie Creek, it is less than 100 feet above the river but disappears higher upstream. Downstream, along Yukon Valley, it rises to 250 feet or more above the river at the north edge of the map area. The terrace extends up Indian and Sixtymile Rivers as well as up the larger streams in the region of Bonanza and Hunker Creeks.

The YUKON GROUP (E) consists of gneisses, schists, micaceous quartzite, phyllite, slate and limestone, and some sheared greenstones that resemble altered volcanic rocks. Quartz veins are abundant in many localities. Sections up to a thousand feet or more thick may be mainly composed of a single rock type, but in all cases there is some intermingling of other types and distinctive horizons are lacking. The structure and sequence of the strata are only broadly apparent. A major synclinal axis traverses the central part of the map-area northwestward from near the mouth of Barker Creek through the limestone body on Gay Creek, the heads of Montana and Ruby Creeks, and across Yukon River at the mouth of Ensley Creek. Adjacent anticlines, if present, are not apparent and on Los Angeles and Australia Creeks the strata for the most part dip toward the syncline. Large areas separated by faults from the major structure show no relationship to the syncline. The angle of dip of the strata is generally between 20 and 50 degrees. Micaceous quartzites, mica schists, and mica gneisses predominate in the southwest and on Australia Creek and probably constitute the lowest part of the group present in this district. They appear to be overlain by an assemblage containing a large proportion of hornblende-feldspar gneiss and this, in turn, is succeeded by strata of all types among which limestone (D) becomes increasingly abundant toward the top of the section. Near the principal limestone zone, and for a few miles on either side of the synclinal axis, the strata of various places are less altered and include more graphitic phyllites and slates than elsewhere. Contact metamorphism is exceptionally intense near some of the intrusive bodies. Southeast and east of Mount Burnham the Yukon Group is cut by abundant dykes of pegmatite.

45'

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30'

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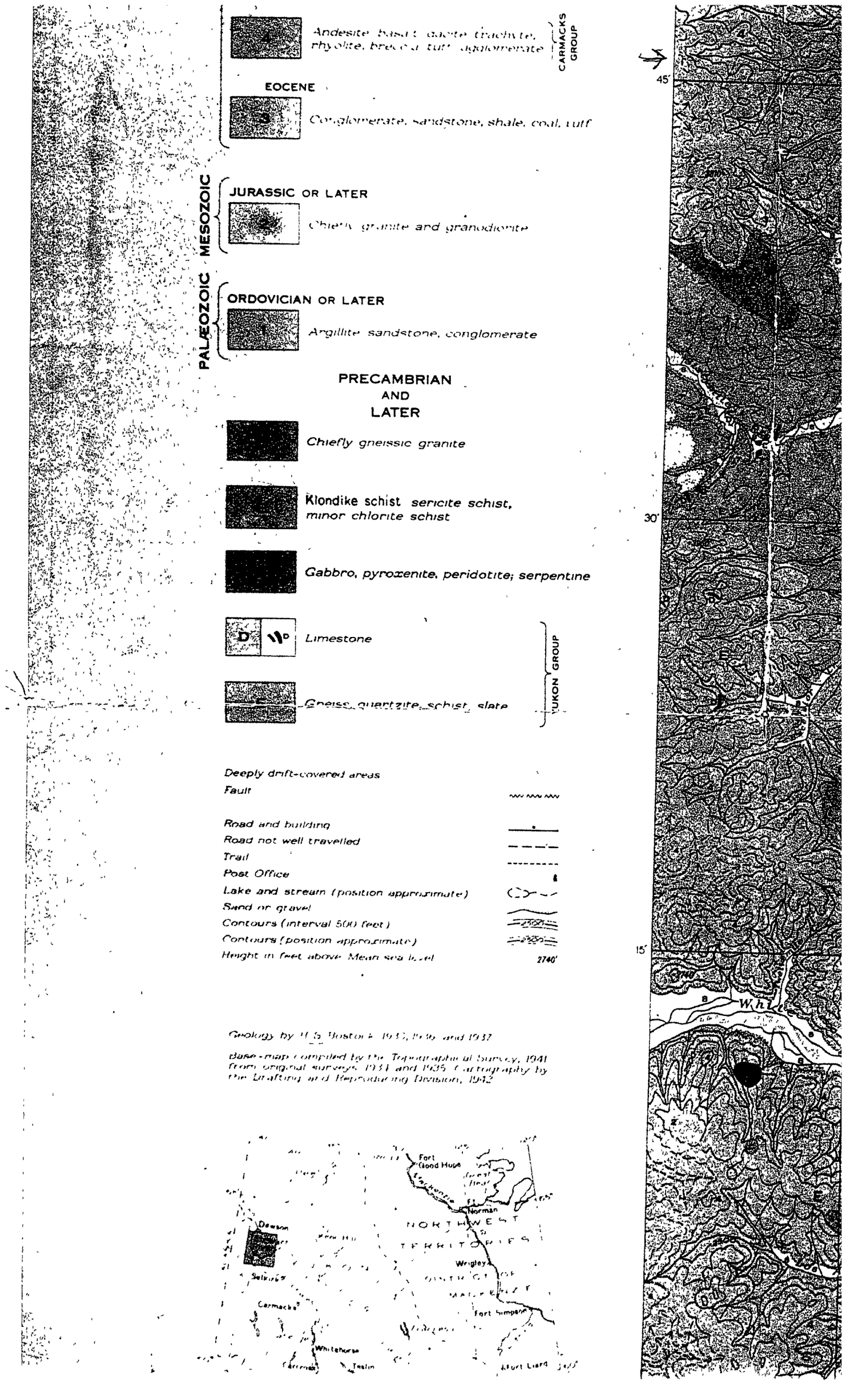
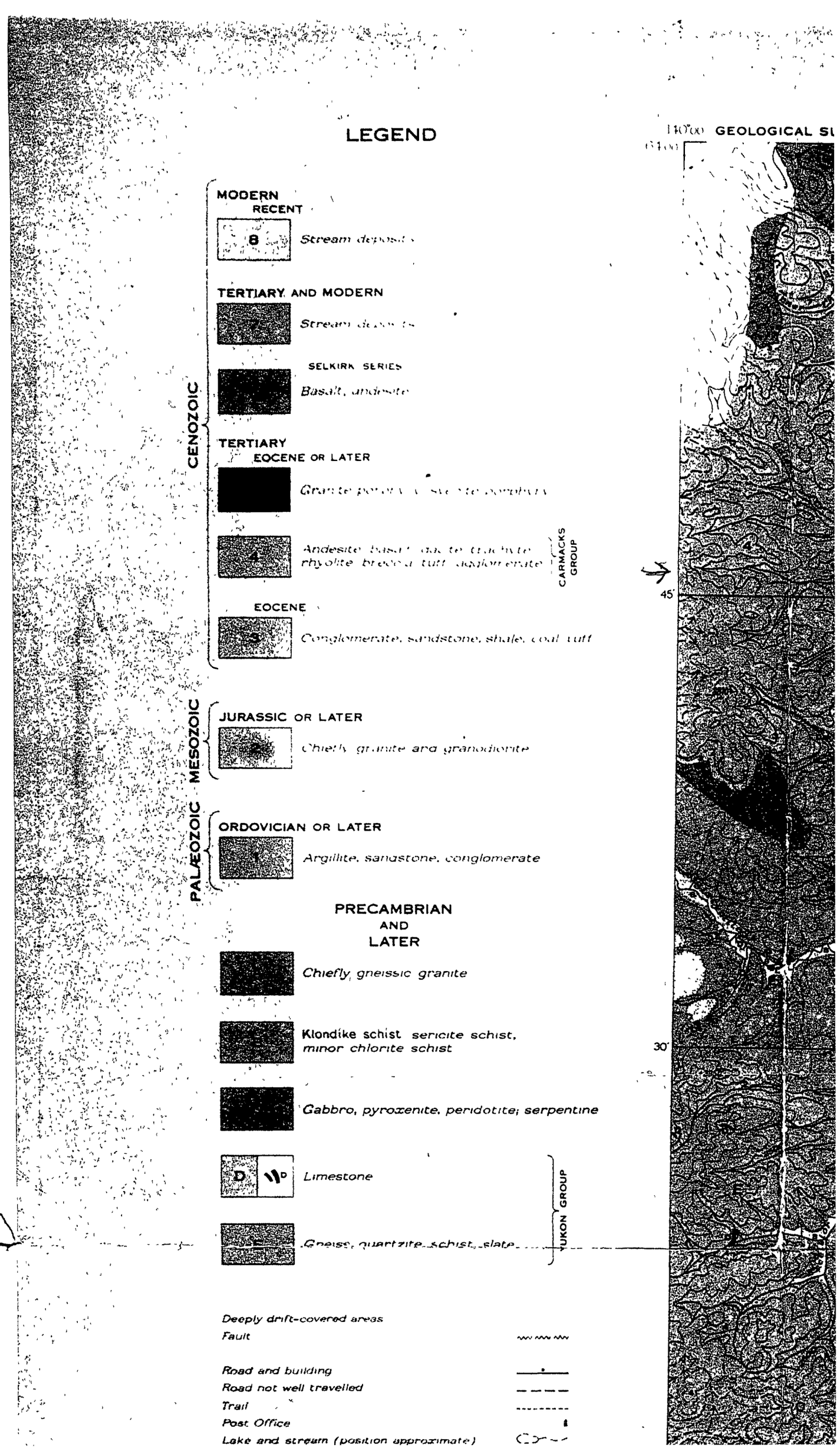

Andesite, basalt, dacite, trachyte, rhyolite, breccia, tuff, agglomerate
CARMACKS GROUP
EOCENE
3
Conglomerate, sandstone, shale, coal, tuff
MESOZOIC
JURASSIC OR LATER
Chiefly granite and granodiorite
PALÆOZOIC
ORDOVICIAN OR LATER
Argillite, sandstone, conglomerate
PRECAMBRIAN AND LATER
Chiefly gneissic granite
Klondike schist, sericite schist, minor chlorite schist
Gabbro, pyroxenite, peridotite; serpentine
D
Limestone
Gneiss, quartzite, schist, slate
YUKON GROUP
Deeply drift-covered areas
Fault
Road and building
Road not well travelled
Trail
Post Office
Lake and stream (position approximate)
Sand or gravel
Contours (interval 500 feet)
Contours (position approximate)
Height in feet above Mean sea level
2740'
Geology by H. S. Bostock, 1933, 1936, and 1937
Base-map compiled by the Topographical Survey, 1941 from original surveys, 1934 and 1935. Cartography by the Drafting and Reproducing Division, 1942
Fort Good Hope
Norman
NORTHWEST TERRITORIES
Dawson
Wrigley
Selkirk
Carmacks
Fort Simpson
Whitehorse
Teslin
Fort Liard
45'
30'
15'

LEGEND


CENOZOIC
MODERN
RECENT
8
Stream deposits
TERTIARY AND MODERN
7
Stream deposits
SELKIRK SERIES
Basalt, andesite
TERTIARY
EOCENE OR LATER
Granite porphyry, syenite complex
4
Andesite, basalt, dacite, trachyte, rhyolite breccia, tuff, agglomerate
CARMACKS GROUP
EOCENE
3
Conglomerate, sandstone, shale, coal, tuff
MESOZOIC
JURASSIC OR LATER
2
Chiefly granite and granodiorite
PALÆOZOIC
ORDOVICIAN OR LATER
1
Argillite, sandstone, conglomerate
PRECAMBRIAN AND LATER
Chiefly gneissic granite
Klondike schist sericite schist, minor chlorite schist
Gabbro, pyroxenite, peridotite; serpentine
D
Limestone
Gneiss, quartzite, schist, slate
YUKON GROUP
Deeply drift-covered areas
Fault
Road and building
Road not well travelled
Trail
Post Office
Lake and stream (position approximate)
140°00
64°00
45'
30'

CERTIFICATE OF ANALYSIS
iPL 94K2501

2036 Columbia St.
Vancouver, B.C.
Canada V5Y 3E1
Phone (604) 879-7878
Fax (604) 879-7898

Client: Northern Analytical Laboratories iPL: 94K2501 Out: Nov 29, 1994 Page 1 of 1 Section 2 of 2
Project: MD 25471 5 Pulp In: Nov 25, 1994 [064514:53:50:49112994] Certified BC Assayer: David Chiu

Sample Name	Mg %	K %	Na %	P %
941	5.43	0.19	0.03	0.14
942	16%	<	0.02	<
943	16%	<	0.01	<
944	0.08	0.11	0.01	0.01
945	0.09	0.11	0.03	0.04
Limit:	0.01	0.01	0.01	0.01
Reported*	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP

No Test: ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

iPL 94K2501

Canada V5Y 3E1
Phone (604) 879-7878
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Client: Northern Analytical Laboratories iPL: 94K2501 Out: Nov 29, 1994 Page 1 of 1 Section 1 of 2
Project: MD 25471 5 Pulp In: Nov 25, 1994 [064514:53:46:49112994] Certified BC Assayer: David Chiu

Sample Name	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %
LS 941	<	<	<	0.3	[illegible]	12	129	14	<	[illegible]	6	<	<	2.2	[illegible]	242	323	<	108	[illegible]	1152	8	106	27	[illegible]	1.11	3.75	6.73	6.86
DS 942	<	<	<	<	[illegible]	4	9	25	7	[illegible]	5	<	<	2.0	[illegible]	0.1%	82	<	575	[illegible]	2868	<	394	1	[illegible]	<	0.08	9.85	3.18
DS 943	<	<	<	<	[illegible]	3	21	49	9	[illegible]	4	<	<	1.6	[illegible]	0.2%	16	<	740	[illegible]	503	<	136	<	[illegible]	<	0.11	1.16	3.97
DS 944	—	—	—	0.6	[illegible]	6	8	15	15	[illegible]	1	<	<	0.5	[illegible]	15	73	<	193	[illegible]	84	3	7	1	[illegible]	<	0.26	0.03	1.09
DS 945	—	—	—	0.1	[illegible]	14	19	7	<	[illegible]	3	<	<	0.4	[illegible]	7	84	<	94	[illegible]	313	10	6	1	[illegible]	0.01	0.43	0.15	0.98
Min Limit	2	15	5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01
Max Reported*	9999	10000	10000	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	9.99	9.99	9.99
Method	FAAA	FA/AAS	FA/AAS	ICP	[illegible]	ICP	ICP	ICP	ICP	[illegible]	ICP	ICP	ICP	ICP	[illegible]	ICP	ICP	ICP	ICP	[illegible]	ICP	ICP	ICP	ICP	[illegible]	ICP	ICP	ICP	ICP

—=No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined e=Estimate/1000 %=Estimate % Max=No Estimate

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