

GEOLOGICAL SURVEY OF CANADA OPEN FILE NO. 861

The following unedited, field notes describe 12 stratigraphic sections for part of the Operation Porcupine project area in northernmost Yukon Territory and immediately adjacent District of Mackenzie west of the Mackenzie Delta. Together with those which have been published they comprise most of the sixty-one sections included within the Aklavik (1517A), Blow River - Davidson Mountains (1516A) and Herschel Island - Demarcation Point (1514A) map areas as well as those parts of Ft. McPherson (1520A) and Bell River (1519A) north of Latitude 67° 45' North. Descriptions for 13 sections are not available at this time. For the readers' convenience, a complete listing of the stratigraphic sections plotted on these maps is included along with first references to those sections which are published or are on open file.

GEOLOGICAL SURVEY OF CANADA OPEN FILE NO.

SECTION	NAME	MAP-AREA	SYSTEM/SERIES	AUTHOR	REFERENCE
106M2	Longstick Ck	Ft. McPherson	L. Cret.	Chamney, T.P.	Not available
106M5	Mt. Goodenough	Ft. McPherson	L. Cret.	Chamney, T.P.	GSC Bull. 185, p. 4-6
106M7	Willow River South	Ft. McPherson	Perm.	Procter, R.M.	GSC Paper 72-19, p. 1-5
116P1	Scho Ck	Bell River	M. Perm.	Bamber, E.W.	GSC Paper 72-19, p. 125-127
116P2	Bell River	Bell River	U. Jur. - L. Cret.	Mountjoy, E.W.	GSC O.F. 16
116P5	White Mtns.	Bell River	Perm.	Dyke, L.D.	This report
116P6	White Mtns East	Bell River	Perm. - Jur.	Mountjoy, E.W.	GSC O.F. 16 etc.
116P7	White Mtns West	Bell River	U. Carb. - L. Perm.	Norford, B.S.	GSC Paper 63-39, 1964, p. 111-118 etc.
116P8	Bell River	Bell River	U. Jur.	Mountjoy, E.W.	GSC O.F. 16
116P9	McDougall Pass North	Bell River	M. Perm.	Bamber, E.W.	GSC Paper 72-19, p. 138
116P16	White Mtns	Bell River	L. Camb.	Fritz, W.H.	GSC Paper 74-1, p. 309-313
107B6	Willow River	Aklavik	L. Cret.	Jeletzky, J.A.	GSC Paper 58-2, p. 75-79
107B11	Willow River	Aklavik	L. Cret.	Mountjoy, E.W.	GSC O.F. 16
107B12	Martin Ck	Aklavik	Jur. - L. Cret.	Mountjoy, E.W.	GSC O.F. 16
117A1	Cache Ck	Blow River	Perm. - Jur.	Procter, R.M.	GSC O.F. 16
117A2	Bell River	Blow River	U. Jur. - L. Cret.	Procter, R.M.	GSC O.F. 16

SECTION	NAME	MAP-AREA	SYSTEM/SERIES	AUTHOR	REFERENCE
117A3	Trail River	Blow River	Carb.	Mamet & Mason	CSPG Bull., v. 18, no. 4, 1970
117A4	Blow River	Blow River	L. Cret.	Mountjoy, E.W.	GSC O.F. 16
117A5	Black Shale Ck	Blow River	M. Perm.	Procter, R.M.	GSC O.F. 16
117A6	Babbage River	Blow River	Carb.	Mamet & Mason	CSPG Bull., v. 18, no. 4, 1970
117A7	Northwest Barn Mtns	Blow River	Carb. - Tri.	Dyke, L.D.	This report
117A8	Cache Ck	Blow River	Carb. - Perm.	Bamber & Waterhouse	CSPG Bull., v. 19, no. 1, 1971
117A9	Anker Ck	Blow River	L. Cret.	Mountjoy, E.W.	GSC O.F. 16
117A10	Bonnet Lake	Blow River	L. Cret	Mountjoy, E.W.	Not available
117A11	Mt. Sedgwick	Blow River	L. Carb.	Upitis, U.	Not Available
117A12	Canoe Syncline	Blow River	U. Jur. - L. Cret.	Mountjoy, E.W.	Not available
117A13	Mt. Sedgwick	Blow River	U. Tri.	Bamber, E.W.	GSC Paper 66-19, p. 34
117A14	Barn Mtns	Blow River	Ord-Sil.	Norford, B.S.	GSC Paper 63-39, p. 137
117A15	Black Fox Ck	Blow River	Carb.	Bamber & Waterhouse	CSPG Bull. v. 19, no. 1, p. 75, 80, 81, 1971 etc.
117A16	Trout Lake	Blow River	U. Jur.	Chamney, T.P.	Not Available
117A17	Sleepy Mtn	Blow River	Jur. - L. Cret.	Mountjoy, E.W.	GSC O.F. 16
117A18	Aklak Ck	Blow River	U. Cret. - L. Tert.	Young, F.G.	GSC Bull. 249, p. 65-70
117A19	Trout Lake	Blow River	L. Cret.	Upitis & Mayes	Not Available

SECTION	NAME	MAP-AREA	SYSTEM/SERIES	AUTHOR	REFERENCE
117A20	Babbage River	Blow River	U. Tri.	Upitis, U.	GSC Paper 66-19, p. 35-36
117A21	Cottonwood Ck	Blow River	U. Tri.	Upitis, U.	GSC Paper 66-19, p. 36-38
117A22	Babbage River	Blow River	M. Jur.	Norford, B.S.	Not available
117A23	Hidden Lake	Blow River	L. Cret.	Mountjoy, E.W.	Not available
117A24	Bonnet Lake	Blow River	U. Jur. - L. Cret.	Mountjoy, E.W.	Not available
117A25	Mt. Welcome	Blow River	U. Tri.	Norris, D.K.	GSC Paper 66-19, p. 39-40
117A26	Johnson Ck	Blow River	Sil. - Dev.	Norris, A.W.	Not available
117A27	Hidden Lake	Blow River	L. Tert.	Norris D.K.	This report
117A28	Anker Ck	Blow River	Ord. - Sil.	Norris, A.W.	Not available
117A29	Babbage River	Blow River	Carb. - Jur.	Norris, D.K.	This report
117A30	White Mtns.	Blow River	Perm.	Dyke, L.D.	This report
117A31	Fitton Ck	Blow River	Ord. - Sil.	Norris, A.W.	Not available
117A32	Barn Mtns	Blow River	Ord. - Sil.	Norris, A.W.	Not available
117A33	Boundary Ck	Blow River	U. Cret.	McNeil, D.H.	GSC Bull. 249, p. 53-54
117A34	The Twins	Blow River	L. Cret.	Dyke, L.D.	This report
117A35	Barn Mtns	Blow River	Ord. - Sil.	Dyke, L.D.	This report
117A36	Barn Mtns	Blow River	Ord. - Sil.	Dyke, L.D.	This report
117A37	Gravel Ck	Blow River	Carb.	Norris, D.K.	This report

SECTION	NAME	MAP-AREA	SYSTEM/SERIES	AUTHOR	REFERENCE
117A38	Big Fish R.	Blow River	U. Cret.	McNeil, D.H.	GSC Bull. 249, p. 54-58
117A39	Big Fish R.	Blow River	U. Cret.	Young, F.G.	GSC Bull. 249, p. 59-65
117B2	Joe Ck	Davidson Mtns	Perm. - Tri.	Norris, A.W.	GSC Paper 66-19, p. 28-31
117B3	Firth River	Davidson Mtns	U. Carb. - Perm.	Norris, A.W.	GSC Paper 72-19, p. 156-159
117B20	Joe Ck	Davidson Mtns	L. Carb.	Bamber & Waterhouse	CSPG Bull., v. 19, no. 1, 1971
117C1	Wolf Ck	Demarcation Pt.	Prot.	Dyke, L.D.	This report
117C2	Malcolm River	Demarcation Pt.	Carb. - Perm.	Bamber, E.W.	GSC Paper 72-19, p. 160
117C4	Wolf Ck	Demarcation Pt.	Prot.	Procter, R.M.	This report
117D1	Loney Ck	Herschel Island	Prot. - Jur.	Mountjoy, E.W.	GSC Paper 66-19, p. 31-33
117D2	Trail River	Herschel Island	U. Cret.	Norris, D.K.	This report

Section 116P5

Unit	Description	Thickness Unit	(feet) From Base
Section: 26NCD			26NCD?
	- working strata upward. Below first unit is a purplish brown quartz sandstone, thin bedded, weathering brownish grey, fine grained and moderately recessive. Sample: 6 NCD 1A. Below this rocks are recessive and weather bright orange.		
59	Argillaceous silty sandstone, slightly calcareous, medium grey to medium brown grey, mostly medium bedded but slightly platy weathering near top. Faint laminations common. At 52 to 57 feet a dull rusty interval of very calcareous, argillaceous siltstone, weathering dull rusty brown and slightly fissile. Unit weathers light brownish grey and forms cliff. Strike: 040, Dip: 45 S.E. Elev. at top: 3900 feet. Sample: 26 NCD 19F (c-10943) containing pelecypods.	63	3218
58	Covered, steep talus.	60	3155
57	Argillaceous, silty sandstone, light to medium brownish grey, in massive featureless beds. Weathers medium brownish grey to grey. Isolated fair outcrops in talus slope. A few laminated thin beds near top.	31	3095
56	Covered, talus from unit above on moderate slope.	130	3064
55	Silty sandstone, very similar to unit 54 but thin bedded and slightly fissile. Unit forms a cliff. Elev. at top: 3680 feet.	21	2934
54	Silty sandstone, medium grey brown, containing chips and flakes of shaly material, medium to thick bedded. Weathering medium to dark grey brown. Unit forms a cliff. Sample: 26NCD 18	11	2913

sample 18/72

Unit	Description	Thickness Unit	(feet) From Base
53	Covered, lower quarter of talus is fissile, pebble sized pieces of siltstone weathering dull rusty grey brown; forms a shallow, flat saddle. Rest is moderately sloping talus from unit above.	213	2902
52	Argillaceous, silty sandstone, similar to unit 51 but all medium brown grey. Thin to medium bedded, with a few thin, laminated intervals. Top of unit is capped with a 6 foot bed weathering white to light grey. Unit is moderately recessive forming low hump above unit 51.	57	2689
51	Argillaceous, silty sandstone, light buff grey to medium rusty brown. Massive to thick bedded but commonly with very faint thin bedded to laminated shadings. Weathers light to medium brown with a rusty tinge to dull grey brown. Beds of unit fracture massively concoidal. Unit forms cliff. Elev. at top 3530 Strike: 060, Dip 30 S.E. Sample: 26NCD 17		
50	Covered, steep talus	14	2533
49	Argillaceous quartzite, light brownish grey to pale pea green, fine grained, thin to medium bedded with numerous laminated to thinly laminated intervals up to 3 feet thick which are often platy weathering. The more massive intervals weather medium brownish grey while thin bedded intervals weather medium brown to rusty orange. Phyllitic bedding surfaces common. Outcrop fair.	22	2519
48	Covered, talus from unit above.	31	2497
47	Siltstone, dark to medium purplish-grey, medium bedded, weathering dull rusty brown, slightly vitreous texture, with up to 1 foot thick intervals of rusty orange weathering concretion layers, moderately fissile. At 15 feet up in unit siltstone grades abruptly into a fine grained, argillaceous quartzite, thin to medium bedded, light to medium buff grey with	41	2466

Unit	Description	Thickness Unit	(feet) From base
	a faint few laminated intervals weathering dark brown to medium grey brown. Outcrop fair, top few feet of unit recessive. Lower division of unit appears as a small shallow fold plunging gently into the hillside. A few bedding planes are slickensided and silica coated.		
46	Covered, talus from unit above. Steep slope.	20	2425
45	Covered, but talus is pebble sized siltstone and shaly siltstone, mostly dark grey with rare medium grey laminated pieces. Weathers dull greyish brown with a rusty tinge. Unit forms gently sloping portion of ridge.	50	2405
44	Siltstone, mostly dark purplish grey with abundant small chips and clasts of finer material, medium to thick bedded, rare thin laminated intervals. weathering mostly dark grey to dark brown. Unit is recessive with only a few beds cropping out. Forms a shallow saddle. At top rocks take on a slightly vitreous lustre and fractures are coated in silica druse, weathering rusty orange. Sample: 26NCD 15.	56	2355
43	Siltstone, dark purplish-grey to dark brownish-grey, medium to thick bedded, weathering dingy brown to dull rusty brown on fresh surfaces, rarely creme white. Unit is moderately resistant forming a low hump on ridge. Faint darker markings suggest a coarse clastic nature.	56	2249
42	Covered, grassy, sparse silty dark grey brown weathering talus.	18	2193
	Photos: 5 - 8: north showing homoclinal succession on east side of White Mtns. From 26 NCD 14. 9 - 1 to 9 - 3: Panorama from east to north including duplicate of 5 - 8. From 26NCD - 14.		

Unit	Description	Thickness Unit	(feet) From base
41	Siltstone, dark grey brown to dark grey with dingy brown to dull orange brown weathering surface, rarely rusty orange on fractures. Medium to massive bedded, alternating beds are moderately fissile. A few ironstone concretionary layers up to 0.5 feet thick. Unit forms abrupt buttress on ridge. Elev. at top: 3300 feet Sample: 26NCD 14	55	2175
40	Very recessive unit of siltstone. similar to Unit 39 but weathering dark rusty brown. A few feet below top is a 2 foot interval of medium brown silty sandstone weathering medium buff. Unit forms shallow saddle on ridge.	189	2175
39	Siltstone, often with an earthy texture, dark grey with a faint purplish tinge. Medium to thick bedded, weathering dull rusty brown but fracture surfaces are rusty to bright orange, giving the talus a rusty appearance. Rare ironstone concretions. Unit forms a shallow hump on ridge; individual beds or groups of beds outcropping as hogbacks. Strike: 068, Dip: 25 S.E. at top. Photos: 8-8 to 8-12: Panorama from summit of unit showing beds above as well as equivalents right and left. 5-7: Duplicate of 8-12.	378	1931
38	Covered, a few patches of pebble-sized silty debris, weathering dull, rusty brown. Unit forms a flat area on ridge.	51	1553
37	Siltstone, very similar to Unit 35. Unit forms a single buttress on ridge and weathers with a greenish brown color on clean fractures, otherwise dull grey brown. Sample: 26NCD 12 - of algal-like structures commonly found on bedding surfaces. Tough. Strike: 116, Dip: 25 S.W. Approximate altitude in roughly equivalent beds west across valley - strike: 030, Dip: 30 S.E.	108	1502

Unit	Description	Thickness Unit	(feet) From base
36	Covered, talus from unit above and grass	102	1394
35	Siltstone, medium to dark grey brown, often with a purplish tinge, often containing shaly chips, weathering dull grey brown, rarely with a subvitreous pea green tinge on fracture surfaces. Medium bedded with rare ironstone concretions throughout. Outcrop is good and unit forms a series of small buttresses on ridge crest. Tough. Elev. at top: 3010 Sample: 26NCD 11	95	1292
34	Covered, recessive, grassy.	19	1197
33	Siltstone, dark grey brown, often with faint rusty spots, mostly medium to thick bedded, moderately fissile in lower half; bedding obvious in upper half. A few ironstone concretions up to 1 foot at c. 5 feet up in unit. Weathering brick red. Unit weathers medium buff brown to dingy brown. Forms cliff.	32	1178
32	Siltstone, dark grey brown with a purplish tinge. Thin bedded, moderately fissile, weathering dingy brown. Outcrop fair; moderately recessive.	8	1146
31	Siltstone, slightly calcareous in lower half, noncalcareous in upper half. Dark brown-grey often with a faint rusty tinge. Beds are medium to thick, weathering dull orangy brown in lower half, dingy dark grey to dull brown above. A few fissile intervals of siltstone in upper half. Siltstone of lower half weathers with a sandstone-like appearance and texture with a few concretion-like exfoliated knobs. Siltstone contains a few thin laminated intervals. Strike: 107, Dip: 20 S.W. Photo: 5-6: of lower half.	40	1138
30	Siltstone, dark brown grey, thin bedded, weathering dark grey to dark grey brown. Outcrop fair to poor, in part recessive	18	1098

Unit	Description	Thickness Unit	(feet) From base
29	Calcareous siltstone containing numerous intervals of limestone concretions. Siltstone is medium purplish-grey, often having a finely crystalline appearance. Medium to thick bedded with some faint laminated intervals. Weathers dull brownish grey. Limestone concretions up to 4 feet, medium to dark grey, fine grained, weathering dull orange brown, contains chert tracery. Intervals are usually 1 foot thick every 3 to 6 feet. Unit forms cliff.	57	1080
28	Single bed of calcareous Siltstone, medium grey, weathering medium orange brown. Tough. Sample: 26NCD 9	3	1023
27	Concretionary siltstone layer, concretions most abundant in top foot, dull red, slightly calcareous, ironstone, up to 0.3 feet, in a silty dull red weathering matrix. Rest of unit is slightly calcareous and concretionary siltstone, dark purplish brown, weathering dull purplish brown.	4	1020
26	Covered, but with talus of siltstone, weathering rusty brown. Otherwise grassy.	23	1016
25	Siltstone with monor silty shale; siltstone is dark brown with faint rusty splotches, slightly calcareous, thin to medium bedded with faint laminations. Weathering medium orange brown. Shaly intervals up to 2.0 feet weather dull purplish brown, fissile and dark grey. Outcrop fair.	17	993
24	Siltstone, slightly calcareous, dark grey brown in medium to thick beds weathering dull orange brown. Many intervals of silty-shaly concretionary lenses, usually up to 3.0 feet thick. They seem to merge into the featureless siltstone. They weather dark grey to black. concretions up to 0.5 feet, intervals contain a crude cleavage at 120/65 S.W. Slightly calcareous siltstone: Sample: 26NCD 8. Siltstone slightly fissile. Outcrop fair to good.	65	976

Unit	Descriptions	Thickness Unit	(feet) From base
23	Covered, grassy. Elev. at top: 2770 Photos: 8-2 to 8-7: of White Mountains from this point.	36	911
22	First 3.0 feet consisting of slightly calcareous concretionary layer, dark grey concretions up to 0.5 feet of slightly calcareous siltstone in shaly matrix. Above this is massive concretionary layer (c. 5.0 feet), concretions up to 3.0 feet, similar to lower layer but weathering dull orange grey, in silty matrix weathering with a purplish tinge. Rest of unit is very recessive, with a few poor outcrops of dark grey brown siltstone, slightly fissile, slightly calcareous, weathering dull yellowish to orange grey. Talus is dull grey brown weathering silty shale.	31	875
21	Slightly calcareous to calcareous siltstone dark grey brown, thin bedded, moderately fissile, weathering dull grey brown. Outcrop very sparse and recessive.	23	844
20	Layer of limestone concretions, single concretions occupying complete thickness. Weathers dull yellowish grey. In silty shale matrix. Photo: 8-1	3	821
19	Calcareous siltstone, medium to dark grey, thin to medium bedded, dull grey brown weathering. A few thin silty partings. Tough, isolated good outcrop. Strike: 040, Dip: 05 S.E. Sample: 26NCD 7	15	818
18	Covered, grassy. Elev. at top: 2650	80	803
17	Covered, talus dark grey weathering silty shale, fissile, dark grey to black.	16	723
16	Covered, except for poorly exposed interval at 52-60 feet of calcareous siltstone, lower part fissile,	105	707

Unit	Description	Thickness Unit	(feet) From base
	laminated weathering dark grey brown, upper part thin bedded, most calcareous of two, weathering dull orange grey. Both dark grey. Talus mostly dark grey brown weathering siltstone commonly coated with caliche, apparently fissile.		
15	Calcareous siltstone, dark grey brown, moderately fissile, thin bedded to laminated, weathering medium grey brown to dull orange grey. Isolated poor outcrop.	6	602
14	Covered, debris mainly shale and siltstone, some heavily coated with caliche.	46	596
13	Siltstone, slightly calcareous, dark grey brown, thin bedded, fissile, intervals less than 3.0 feet thick, weathers dull dark brown. Unit mainly composed of very recessive intervals of shale, weathering dark grey brown. At top is 1.0 foot bed of calcareous siltstone, medium to dark grey, weathering dull brown. Moderately tough yielding... Sample: 26NCD 6F. (c-10942)	16	550
12	Shale, black to dark grey, fissile to moderately fissile, mostly laminate, 5.0 feet interval of thin laminae at bottom of unit. Weathering black to dark grey brown. Very recessive unit.	47	534
11	Calcareous siltstone and minor shale; siltstone is medium to dark grey, thin to medium bedded, slightly fissile, weathers dull brown. Shale is slightly calcareous, dark grey, fissile, laminated. Siltstone in intervals up to 2.0 feet thick, shale less than 0.5 feet. Unit outcrops sporadically along hillside. Sample: 26NCD 5F. (c-10941)	7	487
10	Covered, but talus is mostly shale and silty shale.	44	480
9	Shale, dark grey, weathering black to dark grey, very fissile to moderately fissile, slightly calcareous. Includes one interval of fairly resistant shale (c. 5.0 feet) that is thin bedded; rest laminated to thinly laminated. A few thin bedded intervals of siltstone... Sample: 26NCD 4... and shaly siltstone, dark grey weathering	45	436

Unit	Description	Thickness Unit	(feet) From base
	dull brown to orange brown, slightly fissile, moderately calcareous. These intervals slightly more resistant than shale and may be responsible for enabling shale to outcrop. Shale is otherwise very recessive.		
8	Shale and siltstone, shale forming most of unit, dark grey, very fissile, thinly laminated to laminated, slightly calcareous. Siltstone forms a few beds up to 2.0 feet thick, dark grey brown, slightly calcareous, thin bedded, slightly fissile. Shale very recessive; siltstone more resistant.	14	391
7	Limestone, interbedded with shale. Limestone is dark grey, fine grained, in massive intervals up to 3.0 feet thick, weathering medium rusty orange to dark brown, very hard. Slightly silty in places. Shale forms partings less than 1.0 feet thick, very fissile, slightly calcareous and contains some recrystallized calcite, laminated to finely laminated. Black, weathering dull grey. Samples: 26NCD 3 - lithology 26NCD 3F - Fossil Collection (C-10940) Both taken in limestone.	12	377
6	Shale with rare siltstone interbeds. Shale very fissile, dark grey, laminated, weathers dark grey with light grey stains. Siltstone is medium brown grey, thin bedded, often lenticular. Strike: 110, Dip: 20 S.W. Sample: 26NCD 2MF - microfossils?	11	365
5	Covered.	17	354
4	Shale and silty shale, shale very fissile, black, thinly laminated, weathering black to dark brown; silty shale, dark brown grey, thin bedded, fissile, weathering medium orange brown.	3	337

Unit	Description	Thickness Unit	(feet) From base
3	Covered, small amount of shaly talus.	11	334
2	Shale, black with a tinge of brown. Fissile and laminated. Feathers dark brownish grey. Outcrop seems slightly slumped and is completely surrounded by covered area. Sample: 26NCD LMF: for microfossils.	3	323
1	Covered, grassy. Includes creek crossing. Section: 26NCD Started on top of small limestone knoll. Limestone is light grey, fine to medium crystalline, beds medium to massive, weathering light buff grey. Outcrop is isolated but bedding seems conformable with limestone across creek, to north. Strike: 085, Dip: 55 S.E. Elev: 2220 feet Datum - Camp #5 - 2000 feet.	320	320

Unit

Lithology

Unit

From
Base

Hidden Lake Syncline (Section 117A27)

The Moose Channel Formation outcrops mid-way between Blow and Babbage Rivers, in a doubly-plunging, north-trending syncline cut by a series of steeply dipping, east-trending faults. An estimated 2,500 feet (800 metres) of the Moose Channel is contained in the fold and structural repetitions of the formation are exposed at numerous points along a small, un-named tributary of Conglomerate Creek. The following partial section was centred around exposed coal seams (latitude 68° 53' north; longitude 138° 02'W). Pollen recovered from Unit 4 indicates that a Senonian (Campanian-Maestrichtian) age seems most likely (W.W. Brideaux, Interdepartmental Report, 1972).

9	Cover	--	--
8	Sandstone quartz, chert, lithic, light gray, massive, brown weathering, in plates, blocks and chunks 1 to 6 inches thick. (921-1).	15	44.1
7	Sandstone and conglomeratic sandstone as above with stringers, lenses and beds of chert and quartzite pebble conglomerate with subrounded phenoclasts up to 8 inches maximum observed dimension, commonly $\frac{1}{2}$ to 1 inch, poorly sorted, crossbedded and with tops up. Some phenoclasts floating in the sandstone matrix (921-2). Some soft, light olive grey, fine-grained sandstone clasts.	4.6	29.1
6	Coal, sub-bituminous or high volatile bituminous "C", with carbonaceous shale stringers (921-3MF and 921-3).	2.3	24.5
5	Covered.	5	22.2
4	Shale, carbonaceous, fissile dark grey 921NC 4MF=G.S.C. Loc. C-11263.	2.2	17.2
3	Coal, high volatile, bituminous "C" (921NC5)	0.2	15.0
2	Siltstone, medium dark grey, massive, rubbly weathering, with coaly stringers (921NC6MF)	4.3	14.8
1	Sand, quartz, chert, coarse-grained, conglomeratic, poorly consolidated and deeply weathered, light grey with subrounded, quartzite phenoclasts up to $\frac{1}{2}$ -inch maximum dimension (921NC7).	10.5	10.5

Base of exposure

Section No. 117A7

The following partial section was measured by L.D. Dyke on the northwest flank of Barn Uplift at the headwaters of Anker Creek, northern Yukon Territory. The line of section may be identified on National Air Photo Library picture no. A13383-137 by the following Cartesian coordinates measured with respect to the centre of the photo, with the positive Y axis coinciding with the north direction: Base of section: X = +5.35 cm, X = -0.25 cm; Top of section: X = +4.50 cm, Y = +1.90 cm. Neither the base of the Kayak nor the top of the Shublik Formations is exposed.

Unit No.	Description	Unit Thickness (feet)	Cum. Thickness (feet)
Shublik Formation			
14	Dolomite, medium brownish grey, fine grained, outcrops as talus wthg. dull buff orange. Forms small hill on top of Unit 13. Sample 38NCD15	25	691
13	Limestone, medium to dark brownish grey, medium to finely crystalline, medium to thick bedded, very fetid on fresh surface. 38NCD14F (GSC loc. C-11851) collected containing mainly Monotis. Fossils occur in concentrations as thin beds that are generally most weathered and fetid. Unit weathers light to medium buff and outcrops as an isolated cliff. 38NCD14 118/30NE	19	666
Unconformity			
Kayak Formation			
12	Covered, shale talus. 38NCD13F collected loose. Station 565NC is in this interval. Coal sample 565NC5.	20	647

Unit No.	Description	Unit Thickness (feet)	Cum. Thickness (feet)
11	Quartzite, medium grey, medium crystalline, massive bedded, a few stylolitic seams parallel to bedding, unit forms cliff, weathers light grey. It appears to form a lens about 200 yards long and reappears sporadically along strike. Top of unit contains a few carbonaceous layers. Sample 38NCD12.	21	627
10	Covered, talus from unit stratigraphically above. Suggestion of shale in lower part.	15	606
9	Quartzite, light to medium grey, beds thin to medium with a few shaly, fissile, thin intervals. Rare shaly chips in quartzite. Weathers dull rusty orange to dark brownish grey in shaly parts. Shaly interval at top of unit has a crude concretionary texture. Sample 38NCD11. Unit forms part of cliff.	8	589
8	Quartzite and shale in laminated interbeds. Quartzite finely crystalline, light brownish grey often with a pinkish tinge; shale black, unit is fissile, weathering dull rusty orange. Unit forms part of cliff.	6	581
7	Quartzite, medium to finely crystalline, light brownish grey, containing partings and laminae of shale and coal. Mostly thin bedded with rare shaly	25	575

Unit No.	Description	Unit Thickness (feet)	Cum. Thickness (feet)
	laminated partings as intervals. Weathers dull rusty orange to dark brown. Forms part of cliff. A few of the thicker beds pinch and swell slightly and crossbedding is common. Sample 38NCD10. 129/15NE.		
6	Covered, talus from unit above.	11	550
5	Carbonaceous shale and coal, no outcrop; coal fragments are flat porcelain in texture on weathered surface. Sample 38NCD9MF of coal.	3	539
4	Shale, carbonaceous, black, thin bedded to laminated, fractures dull rusty orange, outcrop fair to poor. Unit contains one half foot bed weathering dull rusty orange. Fine, disseminated pyrite common. Sample 38NCD8MF.	9	536
3	Shale, black, very fissile, outcrop poor to nil, laminated, talus contains abundant fragments of coal that suggest coal within this unit. Unit with dark grey to black, rusty orange on fractures. Sample 38NCD6MF from rear top of unit in place. Sample 38NCD7MF collected loose.	62	527
2	Covered, grass and stream bed.	215	465

Unit No.	Description	Unit Thickness (feet)	Cum. Thickness (feet)
1	Almost completely talus covered. Talus is mainly congl. consisting of chert granules and pebbles in a quartz sand matrix. Congl. particles are subangular to subrounded, mostly various shades of grey, black and green. Bedding rarely observed in conglomerate. Less common is both massive and faintly thin bedded quartzite, light to medium grey, medium crystalline. Unit weathers medium grey with a buff to brown tinge.	250	250

38NCD2 - conglomerate found loose at beginning of section.

38NCD3F - collected in frost boil of siltstone, dark grey, slightly conchoidal weathering, at 75'.

38NCD4 - course grained sandstone transitional to conglomerate containing blebs of galena. Found beside 38-3F. Fractures coated with bright red iron oxide.

38NCD5 - course grained Ss. in place at 160', medium bedded. 050/35nw.

In general unit was assumed to gradually steepen measuring up section from about 20° to 40°.

Section 117A29

845NC

117 A

fl. 6D

A13140-93

005°, 20° NW in Lisburne Gp

Unit	Thickness (feet)	Height above base (feet)
11 Limestone, dark grey, argillaceous, as felsenmeer mixed with quartz sandstone; locally with abundant <u>Monotis</u> sp. Specimen 930-1 and fossil collection 93ONCLF. G. S. C. Loc. C-18167: TrN. Top of exposed section. Overlying rocks presumably Kingak Formation.	15±'	
10 Sandstone, quartz, medium grey, fine- grained, jointed sub-perpendicular to layering; sparse impressions of Spiro- phyton-like markings, and occasional, poorly preserved pelecypods.	25'	
9 Covered interval.	--	

- | | | | |
|---|--|-----|-----|
| 8 | Limestone, medium grey, very fine-crystalline, fossiliferous (no collection); orange weathering unit forms dip slopes near top of hill | 25' | 655 |
| 7 | Sandstone, slightly calcareous, dark grey, very fine-grained, massive, brown weathering, abundantly fossiliferous. This is the collection in bed 845NC1F of previous day and now should read 845NC5F. Specimen 845NC5. G. S. C. Loc. C-11868: Kungurian. | 21' | 630 |
| 6 | Limestone, fetid, medium grey mottled with medium brownish grey, massive, brown weathering; in irregular chunks and wavy plates. 845NC4 fossil brachiopods etc. (1 specimen). | 8' | 609 |
| 5 | Sandstone, non-calcareous, dark grey, very fine-grained, massive, weathering dark brownish grey, with pale red patches; weathering into irregular chunks and plates up to 6 inches thick; fossiliferous 845NC3F. Lithic specimen. | 21' | 601 |

5 cont'd G. S. C. Loc. C-11869: Kungurian.

4	Covered by sandstone talus from above.	100'	580
3	Mudstone, non-calcareous, dark grey, weathering progressively from irregular chunks and plates up to 1 inch thick down into fine chips and flakes commonly less than 1 inch maximum dimension. Sample 845NC2MF taken from 52 feet and 54 feet above base of unit. Best exposed between 45 feet and 60 feet above base of unit.	120'	480
2	Covered. Frost boils show black, chippy shale toward top of interval but these may have come from above.	360'	360
1	Lisburne Group: top beds are limestone, medium light grey, fine-crystalline, very pale orange weathering; weathering into thin wavy plates and irregular chunks 845-1.	--	--

Section 117A30

Unit	Description	Thickness Unit	(feet) From Base
23	Impure quartz sandstone, medium to dark brown; thin to medium bedded; fine grained; weathering dull grey. Strike 021, Dip 40 S.E. at top of unit.	75	2042'
22	Talus covered. Talus mainly light buff brown. Impure quartz sandstone	277	1967
21	Slightly impure quartz sandstone; scarce ferruginous cement; massive bedded; weathers light buff brown. Sample: 6NCD 16 Near top unit contains a few feet thick beds of slightly darker impure sandstone that weathers bright orange. Sample: 6NCD 17	74	1690
20	Silty sandstone, medium dull brown, medium bedded; bedding interfaces uneven. A few scattered beds of intraformational conglomerate, fine shaley mud chips common. Weathers medium grey. Contortion evident within beds. Outcrop fair to good. Sample: 6NCD 15 Strike 020, Dip 55 S.E. Minor intervals (2 to 5 feet) of thinly laminated cross bedded, light buff brown, slightly impure quartz sandstone; some worm tubes near top.	281	1616
19	Slightly impure quartz sandstone, fine grained, massive. Outcrop very poor and apparently frost heaved, showing more recessive intervals (1 to 3 feet) of platy weathering sandstone; weathering rusty brown; rest weathers light buff brown to grey. Talus in cobble to boulder sized blocks. Sample: 6NCD 14	86	1335
18	Covered; grassy.	25	1249
17	Slightly impure quartz sandstone, light buff brown, fine grained, medium bedded, featureless. Weathering light buff grey. Outcrop poor. Scarce ferruginous cement. Sample: 6NCD 13	28	1224
16	Impure quartz sandstone, fine grained, light buff grey, thin bedded; platy weathering, weathering brownish grey. Thinly laminated beds. Outcrop poor. Sample: 6NCD 12	6	1196

Unit	Description	Thickness	(feet)
		Unit	From Base
15	Covered; mostly platy, fine grained sandstone talus.	23	1190
14	Slightly impure quartz sandstone, medium to thick bedded with faint fine laminations and commonly cross laminated. Worm burrows present and stylolitic layers paralleling bedding. Light buff brown to light reddish brown; weathering buff brown. Outcrop poor. Sample: 6NCD 11 - with stylolitic surface.	50	1167
13	Covered, grass and talus 0-200': Talus mostly dense impure quartz sandstone, often faintly, finely laminated, greenish grey to grey brown. Blacky cobble sized talus. Some shale and siltstone near bottom. 200-456': Talus mostly dense silty quartz sandstone and quartzite, light buff brown and light purplish grey. More angular than lower unit. Large clam found loose at 230 feet. Sample: 6NCD 10F	456	1117
12	Silty sandstone, lithic arenite, ferruginous cement, thin to medium bedded, light rusty brown, weathering buff brown to dark grey. Outcrop fair. Sample: 6NCD 9.		
11	Covered, grassy.	7	652
10	Lithic siltstone, medium grey with a greenish tinge, beds thin to medium; weathering mottled rusty brown. Exposure fair, forms buttress on ridge. Strike 054, Dip 35 S.E. Sample: 6NCD 8.	20	645
9	Covered, grassy.	22	625
8	Fine grained lithic arenite, thin to medium bedded, brownish to greenish grey, weathering buff to brownish and rusty grey. Exposure poor to nil. Abundant worm burrows in lower half of unit. Sample: 6NCD 7, showing worm burrows.	85	603

Unit	Description	Thickn ss Unit	(feet) From Base
7	Covered. Grassy	55	518
6	Covered but talus is medium grey to gray brown, weathering gray brown to rusty brown, silty impure quartz sandstone. Talus in angular fragments. Sample: 6NCD 6 showing flating: organic or fluvial?	195	463
5	Silty lithic arenite, thin bedded, medium to light grey with a tinge of brown, weathering grey brown to rusty orange. Occasional dull red clots probably from concretions. Exposure nil to poor, talus angular pebble size fragments. Sample: 6NCD 5	130	268
4	Covered, but talus is quartz rich sandstone, medium grey, fine grained; talus weathers mottled grey and rust, angular fragments.	29	138
3	Limestone, fine grained, medium grey, fissile and thin bedded in groups that are up to massive. Weathering light buff grey. Top of unit forms buttress on ridge as it does on ridge along strike. Very fetid on fresh surface. Some bedding surfaces coated with caliche. Sample: 6NCD 3 Oriented specimen from a few feet below top: Sample: 6NCD 4 - 125/58 N.E. Beds: Strike 036, Dip 35 S.E.	57	109
2	Silty limestone, much like Unit 1 but fissile thin beds grouped in ragged weathering thick beds. Weathers slightly more orange. Fetid odor on fresh surface. Fossil Collection: G.S.C. Loc. C-10908 = 6NCD 2F Lithology Sample: 6NCD 2	15	52
1	Silty limestone, medium brownish grey, finely crystalline, thin bedded to laminated, fissile, weathers light greyish orange. Bedding surfaces commonly contained whorls of algal-like forms. Fetid odor on fresh surfaces. Strike 034, Dip 35 S.E. Fossil Collection: 6NCD 1F: Brachs, etc. Lithology Sample: 6NCD 1.	37	37

Unit	Description	Thickness Unit	(feet) From Base
9	Conglomerate, massive bedded, weathering dark grey to brownish-grey, forms small cliffs and buttresses capping the twin peaks; clasts sub-rounded to well rounded, up to 6", mostly 1" or less, mostly chert and quartzite. Sample 47NCD 8, at top. Attitude: 020/25 NW.	300	873'
8	Covered interval.	40	573
7	Partly covered; at 57' - 64' there is a massive bed of granule to fine pebble conglomerate. Above this is siltstone, dark grey weathering dark brown-grey to rusty brown and pencilly; contains some sandy intervals and thin numerous layers of granule conglomerate. Sample 47NCD 6 of conglomerate with silty matrix, 47NCD 7 of sandy interval. Attitude: 142/25 SW.	150	533
6	Covered interval containing grayish mud near top.	117	383
5	Siltstone, dark grey weathering dark brownish-grey to rusty brown, yellowish patches common, blocky to pencilly weathering; mostly thin bedded to laminated, rarely medium bedded. Intervals of pebble conglomerate, thin bedded at base, becoming medium bedded near top. Clasts up to 3", but mostly pebbles to granules, sub-rounded to rounded chert. Sample 47NCD 5. Attitude: 145/45 SW.	60	266
4	Covered interval, siltstone talus, steep slope.	120	206
3	Siltstone, dark grey weathering dark rusty - grey, thin bedded to laminated; thin partings of fine grained sandstone, light brownish-grey, unit weathers platy to pencilly and forms buttress of short lateral extent. Sample 47NCD 4.	30	86
2	Covered interval, silty talus, partly from unit above; forms small terrace.	33	56
1	Siltstone, dark grey weathering dark rusty-grey, thin bedded to laminated, highly fractured and weathering into pencils. Unit forms a vague buttress; lowest good exposure in immediate vicinity of pass. Sample 47NCD 3; Attitude: 158/16 SE.	23	23

Unit	Description	Thickness Unit	(feet) From Base
34	Chert, black weathering dark grey, thin to medium bedded and finely laminated, blocky weathering; Unit forms a prominent spine down sides of ridge. Sample 49NCD 16; Attitude: 015/80 SE.	35'	7,866'
33	Covered interval, chert talus, rare, very poor outcrops of chert.	560	7,831
32	Chert, mostly dark grey to greenish-grey weathering light grey; thin bedded, platy weathering.	70	7,271
31	Covered interval, small chunky chert talus.	320	7,201
30	Slaty shale, mostly light olive to grey, rarely red or orangy, fissile; interbedded with fine grained sandstone or siltstone, these commonest in the centre of the unit (they are resistant weathering), mostly thin bedded and sometimes alternating with thin interbeds of shale. Near the top there are some quartzitic, thick bedded intervals. The fine grained sandstones and siltstones show a lensing tendency, as do the quartzites.	600	6,881
29	Sandstone, quartzitic, fine grained, highly veined; interbedded with slaty shale, olive to grey. The sandstone is mostly thick bedded. Similar to Unit 28, but with lithologic percentages reversed. Sample 49NCD 15.	155	6,281
28	Slaty shale, with frequent interbeds of argillite; shale mostly light olive-grey weathering, fissile and platy weathering. Argillaceous interbeds are rarely finely sandy and are often veined with quartz.	500	6,126
27	Chert, black weathering same, thin bedded to laminated; mostly a covered unit with chunky talus. Attitude: 005/90.	260	5,626
26	Slaty shale, mostly medium olive to olive-grey, less commonly dull red, very fissile. Near the top of the unit there are thin to medium interbeds of unfoliated argillite and quartzite, veined with quartz.	210	5,366

25	Sandstone, quartzitic, dark grey weathering light grey, medium grained, thin to thick bedded, appears to be interbedded with shaly intervals; fair outcrop. Sample 49NCD 14.	180'	15,156'
24	Slaty shale, medium olive to orangy-olive with rare dull red intervals, very fissile, outcrop poor to nil. Rare intervals of sandstone, impure, quartzitic, medium grained and medium bedded, dark grey to medium grey. Unit forms a shallow saddle.	535	4,976
23	Chert, mostly medium to dark grey weathering medium grey to brownish grey; mostly thin bedded to laminated, rare medium bedded intervals, chunky weathering. Outcrop poor. Sample 49NCD 13, loose from talus. Attitude: 005/90.	635	4,441
22	Slaty argillite, dark grey weathering light brown, to medium grey, moderately fissile, but also weathering into subangular plates.	85	3,806
21	Slaty argillite, medium olive-grey weathering light grey to rusty brown; thin bedded to laminated and slightly fissile. The unit grades to chert interbedded with argillite near the top. The chert weathers similarly to the argillite and is medium grey in color. Sample 49NCD 12. Attitude: 025/65 NW.	200	3,721
20	Covered interval, olive brown shaly talus.	344	3,521
19	Quartzite, dark grey to medium purplish-grey, thin to medium bedded with rare, finely laminated intervals; the lower part of the unit is least quartzitic and seems to grade to a true quartzite at top, medium grained; outcrop fair to good. Sample 49NCD 11 near top. Attitude: 005/90.	180	3,177
18	Covered interval, shaly talus.	100	2,997
17	Slaty shale, medium olive green to brownish-olive green, rarely dull red weathering same, mostly laminated and fissile, platy weathering. At 230' to 300' there is a medium bedded, medium grey chert unit. The upper part consists of shales containing thin to thick interbeds of quartzitic sandstone, dark grey to dark purplish-grey weathering purplish-grey; some horizons of pure pebble to granule conglomerate with chert phenoclasts. Generally poor exposure. Sample 49NCD 9 of conglomerate. Sample 49NCD 10 Of slaty shale.	520	2,897

16	Covered interval with some poor exposures of sandstone, medium grained, light brown; near base, and chert, black weathering and chunky near top. Sample 49NCD 8 of chert.	70'	2,377'
15	Chert, interbedded with slaty argillite, both medium grey to medium olive grey weathering light grey, thin bedded to laminated. Attitude: 014/90.	130	2,307
14	Covered interval; chert talus weathering light grey and dark olive brown; at the top there is a thin interval of chert, black weathering black.	100	2,177
13	Chert, medium to dark grey weathering light grey, thin bedded and laminated. Unit forms a resistant hilltop.	45	2,077
12	Covered interval; at the top there is a scree of greyish-brown, angular chunks of quartz veined, medium grey sandstone weathering dark grey. Above this is a poor outcrop of slaty argillite, medium grey weathering medium brown, laminated. Rest of unit is an argillaceous chert, dark grey weathering light grey. Sample 49NCD 6 of sandstone; Sample 49NCD 7 of slaty argillite.	125	2,032
11	Chert, medium to dark grey weathering medium grey, thin to medium bedded with some laminated intervals; unit is mostly covered with best outcrop at base. Sample 49NCD 5 of fold specimen in talus. Attitude: 010/85 NE.	182	1,907
10	Covered interval, talus is blocky, gravel-size chunks of slightly argillaceous, black chert.	215	1,725
9	Chert, mostly medium grey weathering same, thin to thick bedded with a few zones of brecciation. At 184' to 192' there is a unit of dark brownish-red, earthy argillite, weathering brownish-red and slightly vesicular. Some vesicles calcite infilled. Sample 49NCD 4, of chert.	245	1,510
8	Chert, black weathering medium grey and light grey-brown, thin bedded with numerous laminae of black and dark olive brown. The lower part of the unit has some black, argillaceous partings. Poorly exposed. Attitude: 120/55 SE.	402	1,265
7	Chert, Black to dark grey weathering medium grey, thin to medium bedded; forms hump on hill, abrupt change of bedding to 180/80 W. Sample 4NCD 3.	130	863
6	Covered interval, frost boils of shaly gravel; Sample 4NCD 2MF.	35	733

5	Chert, in part slightly argillaceous, dark grey weathering light grey (almost a porcellanous texture) to brownish-grey, thin bedded to laminated. Sample 49NCD 1. Attitude: 030/55 SE.	100'	698'
4	Covered interval, forms level ridge, rare chert, black weathering brown.	238	598
3	Chert, dark grey to black weathering medium grey, thin bedded.	30	360
2	Covered interval, forms steep slope below Unit 1, pencil weathering, slightly argillaceous, reddish-brown weathering talus.	225	330
1	Chert, slightly argillaceous, banded black and white.	105	105

Unit	Description	Thickness Unit	(feet) From Base
24	Chert, medium grey weathering medium to light grey with a greenish tinge, thin to medium bedded, unit forms spine on either side of ridge. Sample 62NCD 14. Attitude: 008/65 SE.	125'	4,510'
23	Covered interval, chippy to chunky brown chert talus.	205	4,385
22	Limestone, medium grey weathering light buff-grey, thin bedded to laminated, rarely cross-bedded, a few intervals with interlaminae of limestone and dolomite, dolomite fine to medium crystalline, weathering light buff, more resistant than limestone. Sample 62NCD 13, Attitude: 010/45 NW.	320	4,180
21	Covered interval, slaty argillite talus near base, weathering medium brown and platy, black, chippy chert talus near top.	325	3,860
20	Chert, dark to medium olive-grey weathering medium olive brown, thin bedded to laminated and platy, rare intervals of argillaceous chert. Sample 62NCD 12. Attitude 030/70 SE.	245	3,535
19	Covered, talus from Unit 18; at 32' to 41' is interval of platy, laminated limestone talus, weathering light buff-grey.	340	3,290
18	Sandstone, light brown-grey to grey weathering medium grey, medium grained, mostly medium to thick bedded. Unit forms spine on top and sides of a ridge. Sample 62NCD 11. Attitude: 026/85 NW.	60	2,950
17	Mostly covered, near base exposure of badly sheared, argillaceous chert, medium olive weathering olive to off white, at 55' in unit begin sandstone talus. Sample 62NCD 10 of sandstone.	265	2,890
16	Limestone, medium grey weathering medium buff, medium to coarse grained, thin to medium bedded and cross-bedded. Sample 62NCD 9.	30	2,625
15	Covered interval, mostly grass, chert and quartzite talus.	145	2,595
14	Limestone, medium grey weathering light grey to light buff-grey, medium crystalline, thin bedded to laminated, rarely cross-bedded in finer intervals. Sample 62NCD 8. Attitude: 006/65 NW.	135	2,450

13	Covered interval, a hint of interlaminated dolomite near base, rest is chunky chert talus and grass.	200'	2,315'
12	Slaty argillite, medium olive to olive-brown, weathering same, thin bedded and slightly fissile; most of this unit consists of chert, mostly medium to dark olive-brown, gray and brown, weathering same; thin bedded. Attitude: 168/65 SW.	180	2,115
11	Sandstone, medium grey to medium grey-brown weathering medium grey to light olive-grey, medium to fine grained and thin to medium bedded; rare olive and red weathering slaty shale intervals near top of unit. Outcrop poor. Sample 62NCD 7.	130	1,935
10	Covered interval, steep grassy slope.	495	1,805
9	Chert, medium to dark grey with olive tinges, weathering medium to light grey, thin to medium bedded; middle part of unit forms spine on side of ridge. Sample 62NCD 6. Attitude: 170/75 NE.	175	1,310
8	Dolomite, light grey weathering medium buff-brown to buff-grey, thin bedded to laminated, latter sometimes cross-bedded; few intervals of light grey weathering limestone. Sample 62NCD 5.	60	1,135
7	Chert, medium grey to brown and black weathering same, thin bedded to laminated and finely laminated; a few argillaceous chert intervals, outcrop poor to nil. Sample 62NCD 4. Attitude: 178/55 SW.	200	1,075
6	Slaty argillite, medium olive grey to grey weathering light to medium buff-brown, laminated carbonate coatings on bedding surfaces, outcrop poor.	70	875
5	Chert and argillaceous chert dark grey to medium olive-grey and brown, weathering olive-brown to off white, thin bedded to laminated and chunky weathering. Sample 62NCD 3. Attitude: 005/70 NW.	200	805
4	Covered interval, talus from Unit 3.	250	605
3	Chert, medium olive green to medium grey, thin to medium bedded with argillaceous partings. Sample 62NCD 2. Attitude approx.: 010/30 SE.	95	355
2	Covered interval, medium to dark grey chert and rare carbonate talus.	140	260
1	Chert, mostly medium grey weathering medium grey and rusty on fractures; rare argillaceous partings. Unit forms spiny ridge crest. Sample 62NCD 1. Attitude: 025/40 SE.	120	120

355°, 50° NE (in NC)

measuring up hill & up section

Neruokpuk Formation

-- Argillite, pale olive grey, massive, with strong slaty cleavage parallel to bedding. Some cylindrical folds also noted (2 color photos). Some resistant interbeds of pale greyish green, coarse grained quartzite up to 2' thick and cut by white quartz veins up to 1" wide observed (988NC1).

Kekiktuk Fm. (325°, 25° SW)

87' Conglomerate, massive, rusty brown weathering with poorly sorted subrounded phenoclasts up to 1.5' maximum observed dimension. (988NC2). Rubble of dark grey, platy weathering siltstone among the boulders of conglomerate suggests interbeds may be this siltstone (sample). Sample of phenoclasts suggests that medium greyish green and pale orange quartzite predominate. No igneous phenoclasts seen.

Kayak Fm.

585' Covered. 1015' at 08° to break in slope and beginning of limestone rubble. Immediately above the rock is dark grey to black, carbonaceous platy shale showing through the moss and suggesting the present of typical Kyak beneath.

Lisburne Group

80' Dolomite, slightly calcareous, cherty, light grey, coarse crystalline, pale orange weathering with relict weathered light grey chert bands. Seen only as chaotic rubbly in this interval. 988NC4

94' Dolomite, dark grey, fine crystalline, medium dark grey weathering.
Seen only as chaotic blocks in this interval (988NC5).

Shublik Fm.

3.5' Limestone, dark grey, fine crystalline, massive but weathering
into nodular fragments up to 0.1; thick. Contains abundant
Monotic sp. (988NC6F). C-27122, Middle Norian (Tr-1-1974-ETT)

50' Limestone, medium grey, medium crystalline, massive, brown
weathering, with Monotis sp. (988 NC7F) collected 2' - 3' above
base. (988NC7). Partly covered in top 25'. C-27123 Middle Norian
(as above).

Kingak Fm..

-- Conglomerate, brown with angular clasts of chert and quartzite,
weathering into platy fragments (988NC8). Seen only as frost-
heaved rubble and presumed to be the base of the Jurassic Kingak Fm.
Underlying the conglomerate toward the west end of the outcrop
a quartz vein was observed to cut medium greenish grey fine grained
quartzite. Angular fragments of the latter occur in the quartz vein
(988NC9). These quartzites (Neruokpuk ?) are overlain by the
brown weathering conglomerate without the Shublik so that it would
appear that a post Norian-pre Jurassic fault may occur here.

Section 117C1
(4ONCD)

The following incomplete section of the Neruokpuk Formation was measured by L.D. Dyke in Romanzof Uplift in Demarcation Point Map-Area (117C), immediately west of Wolf Creek, a tributary of Firth River. It may be located on N.A.P.L. vertical air photograph no. A13140-120 by means of the following Cartesian coordinates, measured from the centre of the photograph, with true north representing the positive Y direction (see Norris, 1972): Base of section: $X=+4.05\text{cm.}$, $Y=+1.82\text{cm.}$; Top of section: $X=+1.20\text{cm.}$, $Y=-10.28\text{cm.}$

Section 117C1

Unit	Description	Thickness	(feet)
		Unit	From Base
105	Chert, thin to medium bedded, light to medium grey, weathering dark brownish grey, bottom few feet of unit contain intervals of slaty argillite up to one foot thick, dark olive grey, weathering dark olive grey, Unit is poorly exposed on ridge but forms a large rounded buttress. Well exposed on west side of ridge. This unit abuts against a supposed fault striking approximately 110. On the south side are lithic sandstone beds striking 140 at 45 S.W.	280	16,208
104	Slaty argillite, mostly dark grey to dark olive grey with a brownish tinge, very fissile and recessive, outcrop poor.	29	15,928
103	Covered, mostly off-white weathering chert debris.	40	15,899
102	Chert, medium gray to medium olive, thin bedded, some beds faintly laminated, laminated interbeds of slaty argillite, dark olive, weathering dark olive, very fissile. Chert weathers off-white on bedding surfaces, otherwise dingy shades of its own colour. Strike 110, Dip: 90	25	15,859
101	Argillite, slightly slaty, slightly calcareous, dark olive grey, laminated, fissile, weathering light orange to brownish grey. Approximately half way through unit this grades into slightly calcareous argillite, mostly thin bedded, medium grey, fine grained to aphanitic, weathering medium orange brown to medium brown with an olive tinge, slightly to moderately fissile. Unit forms one side of major summit on ridge. Outcrop fair to good.	125	15,834
100	Argillite, slightly calcareous, thin to medium bedded, rare convolute bedding, medium grey, weathering medium brownish grey, slightly fissile. Outcrop fair to good. Unit forms one side of major summit on ridge.	88	15,709
99	Slaty argillite, slightly to moderately calcareous, dark grey to olive grey, laminated, fissile, weathering light orange olive to medium olive. Rare intervals of slightly calcareous argillite, thin bedded, intervals up	119	15,629

Unit	Description	Thickness	(feet)
		Unit	Feet Base
	to 3 feet thick. Outcrop fair to good, unit forming slight rise on ridge.		
98	Argillite, slightly to moderately calcareous, mostly medium grey, medium to thin bedded, fine grained to aphanitic, weathering brownish orange	467	15,502
97	Slaty Argillite, medium to dark olive grey, laminated, fissile, weathering light to medium olive green to orangy grey, a few intervals of slightly calcareous argillite up to 2 feet thick, medium to dark grey, thin bedded, weathering medium greyish brown to orangy grey, slightly fissile. Outcrop fair to poor, unit forming slight saddle.	75	15,035
96	Argillite, slightly calcareous, containing rare medium grained clasts, medium grey often with an olive tinge, fine grained to aphanitic, thin to thick bedded, lower quarter of unit is moderately fissile and aphanitic, rest contains a few slightly fissile intervals. Weathers dull medium brownish to buff grey, often with an olive tinge. Outcrop fair to poor, unit forming minor summit or ridge. Strike 065, Dip: 30 S.E. at top.	126	14,960
95	Argillite, slightly slaty, dark olive grey, thin bedded, fissile and often showing a miniature boudinage-like fracturing parallel to bedding, weathering light greyish to brownish olive, off-white on some fracture surfaces. Outcrop fair to poor.	24	14,960
94	Argillite, slightly calcareous, medium grey, bedding obscure, fine grained to aphanitic, semivitreous texture, weathers light brownish grey to buff brown. About 20 feet up in unit argillite becomes dark olive grey, very slightly calcareous, moderately fissile, weathering dull brownish grey, bedding obscure. Sample 4ONCD 94 from lower subdivision.	31	14,810
93	Covered, talus from unit above.	40	14,779
92	Chert, medium olive grey, thin bedded, weathering dirty olive grey with thin to laminated intervals of dark olive to olive grey slaty argillite up to 0.2 feet thick. Slaty	17	14,739

Unit	Description	Thickness Unit	(feet) From Base
	argillite contains cleavage, the orientation of which is close to that of bedding. Outcrop fair. Strike: 074, Dip: 30 S.E.		
91	Covered, talus consists of pencil to platy weathering slate, weathering dark grey with a purplish tinge. Rest of talus is from units above.	80	14,722
90	Chert, like that of unit 89 except that exposure is poor to nil. Unit forms a moderate slope on ridge.	117	14,642
89	Chert, medium grey, rare laminae light grey to white, mostly thin bedded, aphanitic, contains faint fracture cleavage at high angle to bedding, weathers medium to dark grey with greenish or bluish tinges on close observation. Outcrop excellent, unit forming a prominent cliff on ridge. Bedding surfaces are often phyllitic and rarely indented with current cast appearing structures. Strike 060, Dip: 25 S.E. Sample: 4ONCD 89.	104	14,525
88	Covered, lower quarter of unit consisting mostly of slaty argillite talus, medium olive to bluish olive, weathering light buff grey to off-white. Rest of unit is chert debris from unit above.	181	14,421
87	Slaty argillite transitional to argillite, medium olive often with a purplish tinge, weathering medium olive to medium purplish olive, thin bedded to laminated, weathering into pencils as well as plates. Outcrop fair to poor, unit forms low mound. Bedding is obscure and easily confused with different fracture cleavage orientations.	57	14,240
86	Slaty argillite, medium dull red with rare medium olive bands up to one foot thick, weathering medium dull red, very fissile, laminated, outcrop fair. Strike: 008, Dip: 15 S.E.	25	14,183

Unit	Description	Thickness Unit	(feet) From Base
	<p>The section was carried to this point from about 1½ miles northwest at unit 85. A fault is believed to separate unit 85 from a chert outcrop that is correlated with unit 89. Unit 85 is correlated with the last lithic sandstone interval below unit 86.</p>		
85	<p>Largely covered, outcrop is lithic sandstone, medium olive grey, thin to medium bedded, weathering mostly medium brownish grey. One talus band at top of unit weathers medium orange to orangy olive, thin bedded and fissile. Most of talus is blocky to cobbly weathering. Unit forms roughly level portion of ridge.</p>	160	14,158
84	<p>Lithic sandstone, light to medium olive grey, thin to medium bedded, medium grained, weathering medium orange grey with a slight spheroidal weathering tendency. Unit forms rounded minor summit of ridge, outcrop fair.</p>	69	13,998
83	<p>Lithic sandstone, mostly medium olive grey, rarely dark olive grey, medium grained, rarely fine grained. Slightly foliated, thin bedded, moderately fissile, weathering light brownish orange. A few interbeds of slaty argillite up to 1.0 feet thick; medium olive, weathering light to medium brownish olive and a 3.0 foot interval of argillite, light olive, weathering light brownish olive, at the bottom of unit, pencil weathering. Unit is recessive and forms a level spot on ridge, outcrop poor.</p>	70	13,929
82	<p>Lithic sandstone, medium to light pea green, medium grained, thin to medium bedded, weathering mostly medium orangy grey to dull orange. A few intervals up to 10 feet thick of slaty argillite and platy weathering sandstone, slaty argillite is mostly medium olive, weathering light orange. olive and sheeny, sandstone is laminated, medium grey, weathering light buff, forming rare intervals up to 2 feet thick that grade abruptly to slaty argillite. Lithic sandstone is most resistant and stands out as sub-intervals. Uppermost lithic sandstone interval is chunky weathering but relatively resistant.</p>	288	13,859

Unit	Description	Thickness Unit	(feet) From Base
81	Lithic sandstone, medium to light pea green, medium grained, thin to medium bedded, weathering medium orangy grey. Slight tendency to spheroidal weathering throughout unit, outcrop fair, unit forming a slight hump on ridge. Strike: 118, Dip: 45 S.W.	90	13,571
80	Lithic sandstone, medium to light pea green, medium grained, thin to medium bedded, weathering light to medium orange grey. The more thick bedded intervals form slight humps on ridge. A few intervals of slaty argillite, up to 11 feet thick, mostly medium olive, weathering light to medium brownish olive, laminated, very fissile and recessive, rarely dull red. Middle part of unit in thin bedded sandstone is recessive. Outcrop fair.	305	13,481
79	Lithic sandstone, medium grey to olive grey, medium grained, rare coarse grains and granules, thin to medium bedded, rarely thick bedded, weathering light orange grey. Outcrop fair, unit forms a slight hump or ridge. Strike: 090, Dip: 605 Sample: 4ONCD 79	57	13,176
78	Covered, talus is light to medium orange olive, to grey orange lithic sandstone blocks and plates. Lower half of unit forms major saddle on ridge.	270	13,119
77	Lithic sandstone, light to medium pea green, thin to medium bedded, medium grained, weathering light to medium orange grey, slightly to moderately fissile. In upper half of unit are a few intervals of slaty argillite and very fissile lithic sandstone up to 5 feet thick; slaty argillite is medium olive, rarely dull red, fissile, sandstone is mostly purplish to reddish brown and has a narrow gradational contact with the slaty argillite. Lower half of unit has very poor to no outcrop but talus is all lithic sandstone like upper half. Outcrop in upper half is fair to good. Attitude near verticle throughout unit.	420	12,849
76	Lithic sandstone, light to medium grey, thin to medium bedded, rarely thick	370	12,429

Unit	Description	Thickness Unit	(feet) From Base
	<p>bedded, medium grained, weathering medium orange brown to dull greyish brown, rare cross bedding indicating beds upright. In lower half of unit are minor interbeds of slaty argillite, medium olive, weathering light olive, laminated, very fissile, and rare intervals up to 5 feet thick of fine grained lithic sandstone, medium olive, weathering light olive, thin bedded to laminated. Unit forms a major summit on ridge, outcrop fair to poor. Dip increases from about 30 S.W. up abruptly to 126 at 90 at top. Strike constant.</p>		
75	<p>Covered, talus mostly pebbly and platy weathering lithic sandstone, weathering light to medium orange brown. Possible minor fault indicated by quartz vined breccia talus. Small portion of sandstone talus is slightly sheeny on bedding surfaces.</p>	39	12,059
74	<p>Lithic sandstone, with interbedded slaty argillite, sandstone is light grey to light greenish grey, thin to medium bedded, slightly to moderately fissile, light brownish orange weathering, medium grained, slaty argillite forms intervals up to 10 feet thick, commonly 1 to 2 feet thick, medium olive to medium dull red, weathering light olive brown to dull red, very fissile, laminated, outcrop poor, unit slightly resistant Strike: 113, Dip: 35 S.W.</p>	62	12,020
73	<p>Covered, talus from 0 to 55 feet is lithic sandstone, medium pea green to greyish pea green, thin to medium bedded, slightly fissile, weathering dull orange grey. Rest is pebbly and platy weathering lithic sandstone, and light brownish olive to dull red weathering slaty argillite. Sandstone weathers pale orange grey. Much of this debris is from unit above. Lower third of unit forms part of major saddle.</p>	164	11,958

Unit	Description	Thickness Unit	(feet) From Base
72	Staly argillite, dull medium red, rarely light olive, laminated, very fissile, weathering dull medium red. Outcrop poor, unit forming the flat bottom of major saddle on ridge. Sample: 4ONCD 72	50	11,794
71	Covered with some frost heaved outcrop consisting in the ratio $\frac{1}{4}:\frac{1}{2}:\frac{1}{4}$ stratigraphically upwards of slaty argillite, medium olive, weathering light brownish olive, lithic sandstone, moderately fissile, thin to medium bedded, mostly light orange brown weathering, platy to blocky weathering, lithic sandstone, weathering light greyish orange and into pebble sized chunks, forming flat base to moderate slope of rest of unit.	377	11,744
70	Lithic sandstone, medium dingy green, to greyish green, medium to thick bedded, slightly fissile, sandstone contains slaty argillite chips up to 1 cm. across. Unit weathers dull orange brown to dull grey, outcrop fair to poor. Sample: 4ONCD 70	125	11,367
69	Covered, with a little very poor outcrop of fissile lithic sandstone, thin to medium bedded, weathering light orange brown to dull brown grey. Talus is mostly pebble sized sandstone fragments weathering light to medium brownish grey. Unit forms minor saddle on ridge.	175	11,242
68	Lithic sandstone, medium dingy green, medium to thick bedded, rarely massive, medium grained, commonly slightly fissile, rare argillite intervals up to 1 foot thick that are light olive weathering, medium olive grey, pencil weathering. Unit weathers dull orange brown to dull brown grey, forms major summit on ridge. Strike: 120, Dip: 65 S.W. at top of unit.	143	11,067
67	Lith sandstone, light pea green to light grey, thin to medium bedded, medium grained, beds slightly fissile, a few intervals of slaty argillite up to	125	10,924

Unit	Description	Thickness	(feet)
		Unit	From Base
	5 feet thick, medium olive weathering, light orange olive, rarely dull red. Unit weathers light orange grey.		
66	Lithic sandstone, light pea green to light grey, mostly massive bedded, medium grained, weathering dull grey to orange grey, outcrop good. Unit forms slight hump on ridge and cups anticline of fold pair in unit below. Strike: 132, Dip: 35 S.W.	30	10,799
65	Slaty argillite mainly, dull red and light olive, laminated, very fissile and often pencil weathering, weathering dull red and light orange olive. Minor intervals of lithic sandstone up to 5 feet thick, thin to medium bedded, slightly fissile, light to medium pea green, weathering dull orange grey to grey. Unit repeated in a small anticline-syncline pair that plunges shallowly to the south-east. Unit forms a slight saddle in ridge, outcrop fair to poor.	64	10,769
64	Lithic sandstone, medium grained, mostly light to medium pea green, medium to thick bedded, rarely massive, often fissile and finer grained where most fissile. Weathers medium to light orange grey. Fairly common intervals of slaty argillite up to 10 feet thick, mostly 3 to 5 feet thick, very fissile, laminated, mostly medium olive, weathering light to medium olive with an orange tinge, rarely dull red. At 140-145 and 528-535 are intervals of coarse grained lithic sandstone, the coarsest grains being quartz, weathering dull grey, medium bedded. Strike throughout unit is about 130 with dips of about 45 S.W. changing to 90-70 N.E. in two small fault blocks. These faults are near verticle and strike approximately north-south with a suggested dip slip component of less than 50 feet. Outcrop fair, unit forming an elevated ridge crest. Sample: 4ONCD 64 of upper coarse grained interval.	585	10,705

Unit	Description	Thickness	(feet) From Base
63	Lithic sandstone, medium pea green, mostly massive bedded, medium grained with rare slaty argillite chips, up to 1 cm. across, weathering medium brown grey. A few intervals of fissile and slightly finer grained lithic sandstone, also a few intervals of slaty argillite up to 2 feet thick, medium olive, weathering medium olive, very fissile, in lower half of unit. Outcrop fair to poor, unit forming slight buttress on ridge.	150	10,120
62	Covered, large blocks of talus from unit above on steep slope.	65	9,970
61	Lithic sandstone, medium grey to medium olive, medium to thick bedded, slightly to moderately fissile, mostly medium grained with rare slaty argillite chips, dark grey, up to 2 cm. across, weathering mostly medium orange grey to brown grey. Outcrop poor on steep talus slope, very rare slaty argillite intervals up to 0.5 feet thick. Strike: 098, Dip: 45 S.W. at center of unit. Sample: 4ONCD 61 of sandstone.	120	9,905
60	Covered, grass and talus, mainly cobble sized chunks of light orange grey weathering lithic sandstone. Upper half of unit is steep slope containing talus from unit above. Rest of unit forms part of major saddle on ridge.	271	9,785
59	Lithic sandstone, light olive grey, thin to medium bedded, medium grained, weathering dull brownish orange. Outcrop poor to nil, unit mostly talus in form of slabs and slightly rounded cobbles. Unit forms a slight hump on middle of saddle. A few loose chunks of quartz granule conglomerate near top. Strike: 120, Dip: 75 S.W. at bottom of unit.	180	9,514
58	Mostly covered with a little very poor outcrop, lithic sandstone, mostly medium to thick, slightly fissile beds. Talus consists of large blocks from unit above in upper part of unit. Lower half is dull orange brown to grey brown weathering lithic sandstone debris and light olive slaty argillite debris.	515	9,334

Unit	Description	Thickness Unit	(feet) From Base
57	Lithic sandstone, medium grey with a purplish tinge grading slowly into light to medium pea green, medium grained, rarely coarse grained, thick to medium bedded, slightly fissile. Unit forms a slight hump on ridge, outcrop good. Unit weathers medium purplish grey to medium orange grey to grey brown. Strike: 104, Dip: 70 S.W. Sample: 4ONCD 57 of purplish tinged sandstone.	68	8,819
56	Lithic sandstone, medium to light olive grey, medium grained, rarely coarse grained, beds thick to medium, unit weathers light orange grey. A few interbeds of slaty argillite up to 10 feet thick, mostly dull red weathering, very fissile, outcrop fair to good.	110	8,751
55	Lithic sandstone, light pea green to light olive grey, mostly massive to thick bedded, medium grained, with scattered coarse grains. 21 feet to 26 feet is a bed of quartz granule conglomerate with a lithic sandy matrix. Most beds are slightly fissile not parallel to bedding. Unit weathers light to medium orange olive to greyish brown. Outcrop fair to poor. More quartz conglomerate seen in talus near top of unit. Unit forms a minor blocky summit on ridge and talus is very chunky. Sample: 4ONCD 55 of quartz conglomerate.	428	8,641
54	Covered, talus mostly similar to that of unit below. Upper quarter of unit consists of talus from unit above.	182	8,213
53	Lithic sandstone, light olive to light pea green, massive bedded, slightly foliated, medium grained, weathering dingy dark brown, highly vined with quartz, outcrop good, bedding obscure, talus very chunky.	63	8,031
52	Lithic sandstone, light to medium olive grey, mostly thick to massive bedded, in part slightly fissile, a few intervals up to 10 feet thick of slaty argillite, very fissile, medium olive and dull red, weathering light olive and dull red, sheeny, laminated. Sandstone weathers medium orange grey. Unit forms a sharp, blocky ridge crest, outcrop mostly good, a few loose fragments found near top of unit	272	7,968

Unit	Description	Thickness Unit	(feet) From Base
	containing argillite clasts up to 3 cm. long. Strike: 093, Dip: 45 S.W. near top.		
51	Lithic sandstone, light olive grey, mostly massive bedded with rare thin bedded intervals, medium grained, the more massive beds are slightly fissile, fissility not parallel to bedding, a few intervals of dark grey slaty argillite up to 3 feet thick, weathering medium brownish grey to brown olive, very fissile. Outcrop fair to good, unit forming a prominent summit or ridge. Strike: 106, Dip: 70 S.W. at middle of unit. Sample: 4ONCD 51 of sandstone from thin beds.	153	7,696
50	Covered, talus mostly blocks of lithic sandstone weathering light orange olive and slaty argillite, weathering light olive. At 43 feet to 53 feet is a band of dull red weathering slaty argillite. Upper third of unit is steep slope with talus mostly medium grey brown weathering slaty argillite and blocky lithic sandstone.	116	7,543
49	Lithic sandstone, medium to dark olive to dingy green, medium grained, quartzitic texture, medium to thick bedded, weathering dark grey, isolated poor outcrop. Strike: 044, Dip: 35 S.E.	29	7,427
48	Covered, talus mostly chunky lithic sandstone and rarely slaty argillite, unit weathers dull orange olive to olive brown.	14	7,398
47	Lithic sandstone, light grey to light olive grey, medium to thick bedded, medium grained, weathering dull brownish grey to dull brown olive, outcrop fair.	13	7,384
46	Covered, talus mostly platy weathering lithic sandstone weathering light orange olive.	78	7,371
45	Lithic sandstone, medium olive grey, mostly thin bedded, rarely medium bedded, moderately fissile throughout, medium	62	7,293

Unit	Description	Thickness Unit	(feet) From Base
	grained, rare slaty argillite intervals up to 0.5 feet thick and fine grained sandstone intervals up to 1 foot thick. Unit forms small buttress on ridge weathering light rusty orange to grey brown, outcrop fair to good. Strike: 095, Dip: 75 S.W.		
44	Lithic sandstone, light to medium olive to olive grey, medium to thick bedded, slightly fissile in part, very rare intervals of light olive brown weathering slaty argillite up to 2 feet thick, Sandstone weathers light orange grey to light brownish grey, outcrop poor to nil, talus contains a large amount of thin bedded, fine grained lithic sandstone, medium to dark dingy green, weathering light orange olive, dip steepens toward top of unit.	223	7,231
43	Lithic sandstone, with a quartzitic texture, light grey to light olive grey, medium to thick bedded, rare thin bedded intervals, weathering light grey to white. Outcrop poor to fair, talus blocky. Strike: 067, Dip: 20 S.E. Sample: 4ONCD 43	57	7,008
42	Lithic sandstone, mostly medium olive grey to dingy green, mostly medium to thick bedded, rarely massive, medium grained commonly moderately fissile in thinner bedded intervals as well as finer grained. Rare intervals of slaty argillite up to 5 feet thick, light to medium olive grey, laminated, weathering dull rusty olive to medium olive, sandstone weathers light orange brown to grey brown, unit forms a low hump on ridge, outcrop fair to good. Strike about 095 but dip varies between 20 and 70 S.W. throughout unit. Sample: 4ONCD 42 of sandstone from bottom of unit in unfissile bed.	395	6,951
41	Lithic sandstone and slaty argillite interbedded; sandstone is medium to fine grained, medium to light olive grey, thin to medium bedded, weathering dull rusty brown; slaty argillite is light to medium olive grey, laminated in intervals of up to 0.5 feet, very fissile, weathering rusty orange and olive grey, outcrop good, unit forming small buttress on ridge. Strike: 097, Dip: 60 S.W.	40	6,556

Unit	Description	Thickness Unit	(feet) From Base
40	Lithic sandstone, medium to fine grained, medium to dark dingy green, rarely massive bedded, mostly thick to medium bedded and slightly to moderately fissile. The most fissile beds are generally the finest grained, weathers mostly dull rusty to brown grey. Lower two thirds of unit contains a few intervals of slaty argillite up to 10 feet thick, medium olive grey to medium grey, highly fissile, laminated, weathering light olive to medium rusty grey, outcrop fair, sandstone beds often have phyllitic bedding surfaces. Sample: 4ONCD40 of fine grained sandstone with coarser quartz grains.	240	6,516
39	Lithic sandstone, medium olive, medium to fine grained, thick to thin bedded, rarely slightly fissile where fine grained, rare slaty argillite intervals up to 1 foot thick, unit weathering dull orange to brownish grey. Outcrop fair.	70	6,276
38	Slaty argillite, mostly dull red, very fissile, mostly laminated, weathering dull red and sheeny, a minor interval of medium olive, light olive weathering slaty argillite at top of unit. Within red slaty argillite are rare lenses of dull red lithic sandstone up to 3 feet thick, weathering dull red. Outcrop fair. Sample: 4ONCD 38-1 of red slaty argillite. Sample: 4ONCD 38-2 of red sandstone.	120	6,206
37	Lithic sandstone, quartzitic texture, medium olive grey, medium grained, subrounded quartz grains apparent, mostly thin to medium bedded becoming thick bedded in upper half of unit. Lower thin beds show rare convolute bedding. Infrequent intervals of fissile sandstone up to 3 feet thick, also infrequent intervals of slaty argillite up to 3 feet thick, very fissile, thin bedded to laminated, medium olive grey, weathering light olive grey in upper half of unit. These intervals are generally recessive. Rest of unit weathers dull rusty orange to brownish grey and forms small hump on ridge. Strike: 112, Dip: 65 S.W. at center. Sample: 4ONCD37 of sandstone.	400	6,086

Unit	Description	Thickness Unit	(feet) From Base
36	Covered, mostly slightly fissile lithic sandstone talus.	52	5,686
35	Lithic sandstone and infrequently impure quartzite; sandstone medium grained, occasional slaty argillite chips, medium to thick bedded, moderately fissile, weathering medium rusty orange. Impure quartzite is not fissile. Also recessive intervals of fine grained lithic sandstone up to 5 feet thick, dark olive grey, thin bedded, weathering dull brownish olive and into pencils. Base of unit formed by a resistant 10 foot bed of slightly quartzitic lithic sandstone, outcrop poor to nil. Sample: 4ONCD 35 of fine grained sandstone.	227	5,634
34	Covered, mostly blocky lithic sandstone talus, light olive grey weathering argillite, sandstone weathering light rusty orange to light rusty olive at top. Forms shallow saddle on ridge.	170	5,407
33	Lithic sandstone, medium dingy green, beds mostly thick to massive, medium grained, unit weathering medium brown grey, rarely light grey, rusty brown on bedding surfaces. Rare intervals of argillite, medium olive grey, weathering brown olive, up to 5 feet thick. In top 200 feet of unit are intervals up to 10 feet thick of slightly to moderately fissile lithic sandstone, fine grained to aphanitic, and quartzitic, fine grained material is dark dingy green, thick to medium bedded; aphanitic material is light olive to olive grey, medium to thin bedded. A small shallow fold repeats about 80 feet of beds at top of unit. Fold plunges east at approximately 30 feet. Strike: 075, Dip: 50 S.E. near top of unit. Sample: 4ONCD 33 from near top. Sample: 4ONCD 33-2 of fine grained lithic sandstone. Note: Bottom 1300 feet of unit is estimated thickness from air photo assuming 45° dip.	1575	5,237

Unit	Description	Thickness Unit	(feet) From Base
32	Lithic sandstone, and argillite interbedded, sandstone is mostly dark dingy green, medium to fine grained, medium to thick bedded, beds moderately fissile, weathering dull rusty orange. Argillite is medium to light olive in thin bedded intervals up to 5 feet thick, weathering medium olive to buff orange. Outcrop good.	35	3,662
31	Argillite, dull red, thin bedded, very fissile, weathering dull grey red. This interval graded abruptly into medium to dark olive to olive grey argillite weathering medium olive, fissile, thin bedded, about half way through unit. Outcrop poor to good, unit forming level notch on ridge.	39	3,627
30	Lithic sandstone, mostly medium dingy green, mostly massive bedded, with a few beds up to 20 feet thick. Infrequently beds are medium to thick and where so are commonly slightly fissile. Rare argillite intervals up to 1 foot thick. Unit weathers dull grey to dull rusty orange, outcrop fair, unit forms a buttress on ridge. Strike: 090, Dip: 45 S. at top of unit.	230	3,588
29	Lithic sandstone, dark to medium dingy green, mostly thick to medium bedded with rare massive beds. A few beds are slightly fissile, rare argillite interbeds are up to 1 foot thick, medium olive to olive grey, thin bedded. Unit is slightly more recessive than unit 28. Weathers dull grey brown to dull rusty orange, outcrop fair to poor.	265	3,358
28	Lithic sandstone, medium brownish green to medium grey, massive bedded, medium grained with rare quartz grains up to	220	3,093

Unit	Description	Thickness Unit	(feet) From Base
	<p>0.5 cm. In frequent argillite intervals up to 3 feet thick, thin bedded, medium olive grey, weathering medium olive to olive grey, and into pencils. Sandstone weathers a dull brownish grey. At 180 feet is a pillow lava layer about 1 foot thick. Strike: 065, Dip: 35 S.E. at middle of unit. Sample: 4ONCD 28-1 of lava. Sample: 4ONCD 28-2 of sandstone.</p>		
27	<p>Covered, talus from unit above and argillite talus.</p>	95	2,873
26	<p>Argillite, light to medium olive to olive grey, thin bedded to laminated, fissile, weathering light olive grey, outcrop poor. Very rare inter-bedded thin beds of lithic sandstone, fine grained, and chert, medium grey.</p>	23	2,778
25	<p>Covered, talus from units above. Lower part of unit forms shallow saddle above buttress.</p>	165	2,755
24	<p>Argillite, dark to medium olive grey, thin bedded, fissile, with very rare interbeds of chert, medium grey, faintly laminated, argillite weathering light olive grey light rusty brown. Phyllitic partings and bedding surfaces common. Outcrops fair to nil, unit forms top of buttress. Strike: 110, Dip: 30 S.W.</p>	92	2,590
23	<p>Argillite and inter-bedded chert; argillite medium grey to medium olive grey, fissile, thin bedded, containing fracture cleavage close to bedding attitude. Chert forms thin beds and is less abundant than argillite, black to medium grey to medium olive grey, aphanitic, some interbeds are faintly laminated. Contains fracture cleavage at high angle to bedding. Argillite weathers medium grey to medium olive grey, rarely off-white, chert weathers mostly medium grey. Outcrop fair to good, unit forms buttress. Sample: 4ONCD 23.</p>	80	2,498

Unit	Description	Thickness	(feet)
		Unit	From Base
22	Covered, talus from unit above, steep.	34	2,418
21	Argillite, black to dark grey, to dark olive grey, thin bedded, fissile, rare finely crystalline quartz veins parallel to bedding, weathers dark grey to dark olive grey. Outcrop fair to poor. Strike: 095, Dip: 20 S.W. Sample: 4ONCD 21	27	2,334
20	Covered, talus from units above on steep slope, rare chunks of dull orange weathering, black limestone.	175	2,307
19	Covered, forms deep saddle, on north side talus is mixture of slaty argillite, argillite, and lithic sandstone with infrequent chert. On south side talus is from units above.	100	2,132
18	Lithic sandstone, like that of unit 15, medium to thick bedded, weathering light grey. Unit carried to summit of ridge. It is assumed to continue on south side to form a rubble covered dip slope. Additional estimated thickness from air photo is 300 feet. Unit top is assumed to be represented by break in slope at bottom of dip slope.	325	2,032
17	Lithic sandstone, mostly medium to dark dingy green, medium to thick bedded, slightly fissile, weathering dull rusty brown. Into beds of argillite and less commonly slaty argillite. Argillite is very fissile, light to medium olive grey, weathering brownish olive and commonly into pencils. Slaty argillite is dark olive, weathering dark greyish olive, very fissile. Outcrop fair to poor.	122	1,707
16	Lithic sandstone, like that of unit 15 except that bedding becomes thick to medium in upper quarter of unit. Also argillite, medium to dark olive to olive grey, thin bedded to laminated, fissile, weathering dark olive, forms intervals up to 5 feet thick infrequently. A few intervals of fine grained lithic sandstone up to 1 foot thick. Unit is sparsely vined with quartz. Unit weathers dull greyish brown to rusty	500	1,585

Unit	Description	Thickness Unit	(feet) From Base
	brown, outcrop fair to good. Strike: 050, Dip: 35 S.E. near bottom of unit. Strike: 074, Dip: 45 S.E. at top of unit. Sample: 4ONCD 16-1 of argillite. Sample: 4ONCD 16-2 of sandstone.		
15	Lithic sandstone, medium dingy green, to light buff green, containing rare coarse grains of quartz and feldspar, massive bedded, outcrop poor to nil. Talus contains abundant argillite, dark green, weathering into pencils but outcrop not seen. Unit weathers dull greyish brown.	115	1,035
14	Covered, talus from unit above.	28	970
13	Chert, light grey, weathering light grey to white, medium bedded, aphanitic, interbedded with argillite, light to medium olive grey, in thin to medium beds showing some cross bedding, weathering medium to dark olive and brownish olive. Rare interbeds of limestone up to 0.5 feet thick, fine grained, dark grey, weathering dingy orange. Contact between this unit and next higher unit is likely a near vertical fault. Sample: 4ONCD 13 of limestone.	52	942
12	Covered, talus mainly argillite and slaty argillite.	60	890
11	Chert, thin to medium bedded, light grey, weathering light grey, aphanitic, very faintly laminated, minor interbeds of slaty argillite, thin bedded to laminated, light to medium olive grey, and argillite, light grey. Outcrop fair.	15	830
10	Interbedded chert, slaty argillite and argillite containing minor quartz viewing, in beds mostly thin to laminated. Chert is light grey, weathering light grey, aphanitic, and is rarely slightly argillaceous with faint laminae and crossbedded. Slaty argillite is very fissile, light olive grey, weathering light olive grey, rarely rusty on bedding surfaces. Argillite shows abundant cross bedding, is light to medium grey to olive grey, weathering olive grey to brownish olive, and is least abundant of lithologies.	120	815

Unit	Description	Thickness	(feet)
		Unit	From Base

Unit is thought to be repeated by a fold pair, axes of which appear to be parallel to strike of average attitude. Sample: 4ONCD 10 of argillite.

9	Similar to unit 7 with thin to medium beds of chert and minor interbeds of slaty argillite. Slaty argillite is laminated, and very fissile. Rare thick beds of lithic sandstone resembling unit 8. Outcrop poor. Strike: 121, Dip: 20.	81	695
8	Lithic sandstone, medium green grey with a rusty enclosing weathered layer, fine grained except for a few medium sub-rounded quartz and feldspar grains, thick bedded, slightly fissile in part, weathering light green grey. Unit contains numerous quartz veins, forms a prominent bed. Sample: 4ONCD 8.	6	614
7	Chert, light grey to light and medium olive, medium to thick bedded, weathering light grey, aphanitic, with minor thin to medium interbeds of slaty argillite, light olive grey with a micaceous sheen on bedding surfaces. Also rare thin to medium interbeds of argillaceous chert showing cross-bedding, light grey to light olive, weathering pale olive grey. Rarely chert appears recrystallized. Outcrop fair to poor. Sample: 4ONCD 7 of argillaceous chert.	95	608
6	Slaty argillite and chert in thin to medium interbed, slaty argillite medium olive grey, fissile in part, weathering medium to dark olive to olive grey, containing cross bedding showing beds upright. Chert is light to medium grey, rarely olive, often with phyllitic bedding surfaces, aphanitic, weathering light grey to white. A fracture cleavage permeates unit, in slaty argillite it is distinctly more acute to bedding than in chert. A tight fold repeats about 5 feet of beds. Rare thin to medium beds of limestone, medium	73	513

Unit	Description	Thickness Unit	(feet) From Base
	to dark grey. finely crystalline, weathering dull buff orange to orange grey. Chert increases in proportion in upper half of unit. Exposure fair to good. Strike: 085. Dip: 20 S.E. Sample: 4ONCD 6 of chert.		
5	Covered, talus from units above	110	440
4	Slaty argillite and limestone in thin to laminated interbedded intervals, slaty argillite is dark olive grey, slightly fissile, limestone is medium to dark grey, finely crystalline to aphanitic, weathering dark grey to dark grey brown with rusty tinges on limestone beds. Very small tight folds and crenulations common. Sample: 4ONCD 4.	23	330
3	Covered, grass and talus.	123	307
2	Slaty argillite, medium to dark olive grey to olive brown, weathering medium olive grey, beds thin to laminated, moderately fissile, a few near isoclinal folds with axial planes parallel bedding, also a few kind bands. Light sheen on bedding surfaces. Strike: 126, Dip: 25 S.W. Sample: 4ONCD 2.	14	184
1	Covered, mostly grass with a few frost boils containing slaty argillite, pale olive grey, platy weathering.	170	170

Unit	Description	Thickness Unit	(feet) From Base
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Section started at top of limestone talus band that is thought to be equivalent to limestone sampled at 327NC. Also lithic sandstone is found immediately below.

- Photos: 1D-10, 11 Panorama north from 4ONCD 51
 1D-12 South from 4ONCD 51
- 6-28, 29 duplicate of 1D-10, 11
 6-30 duplicate of 1D-12
- 2D-1 north-east showing units 63 and 64
 6-32 duplicate of 2D-1
- 6-33 east showing second part of 4ONCD
 6-34 west showing end of first part of 4ONCD at grey lens of chert.
- 2D-2, 3 Panorama duplicating 6-34
 2D-4, 5, 6, 7, 8, Panorama east to south including duplicate of 6-33.

Section 117C4 (16PM)

Neruokjuk Formation, British Mountains

Unit No.	Lithologies	Thickness (ft.)	ft. above base (ft)
13	<p>Unit observed at a series of helicopter stops and samples taken at numbered localities 20 to 25 (see photo). Strikes of 110° to 120° were consistent but dips varied from vertical to 20° in either direction. Dips to southwest dominant. Whole unit is more recessive than underlying beds and is estimated to be about 60 per cent argillitic rocks. Bottom 300 feet are interbedded red, green and yellowish-green argillites with interbedded thin quartzites as at top of Unit 12. Middle part of section is interbeds of brecciated, light grey chert and red and green argillite, weathering black to light grey and partially altered to chert? Youngest exposed beds in the section appear to be a monotonous sequence of red, green and grey argillites to shales, silty in part and interbedded with thin bedded grey-green quartzites, fine-crystalline, uniformly textured and weathering light orange-grey (130°, 20SW). From a distance the upper half of the unit appears to be a series of 4 or 5 repeats with red weathering argillite at base overlain by light grey weathering chert and in turn by quartzite. At locality 25 is a gentle anticline with dark grey-black chert in the core, flanked on the south by light grey chert and green argillite. To the north anticline suspected to be in fault contact with more than 25 feet of light grey-green, medium-grained quartzite weathering light grey. This same stratigraphic and structural picture prevails more or less at locality 23. Locality 24 is dominantly reddish brown, red weathering argillite interbedded with green argillites flanked by quartzites. Thickness estimated to be over 1000 feet but not likely over 2000 feet. Locality 21 comprises interbedded green argillites, cherty argillite breccia and chert as at locality 23, and grey-green, fine-crystalline quartzite. Locality 20 at top of section is about 80 per cent grey-green, fine-crystalline thin-bedded, orange-grey weathering quartzite with interbeds of argillite, mostly red. Thickness rounded to make total section an integral number of thousands of feet.</p>	1530'	13,000'

Unit No.	Lithologies	Thickness (ft.)	Ht. above base (ft.)
12	<p>Unit described from ridge traverse and consists of the following lithologies sampled at 14 stops from the top down: Quartzite - grey-green, fine-crystalline, very dense, weathering reddish in part, mostly thin- to medium-bedded, but with some beds up to 10 feet thick, severely jointed and fractured, with fissure filling by vein quartz and druzy quartz and limestone. Argillite-slate-phyllite, usually yellowish green, locally grading laterally to maroon, locally silty to sandy, strong secondary cleavage, contorted and with dip reversals. Sandstone, a normal equivalent of the quartzite and apparently gradational with it. This unit is characteristically thin-bedded and identified by rounded talus pebbles up to 2 inches in diameter. It usually weathers reddish grey with black lichen. Associated with the sandstone is a fine pebble-conglomerate with well sorted, well rounded, ellipsoidal quartz (and chert?) grains about $\frac{1}{2} \times \frac{1}{8}$ inches, floating in a fine-grained sandstone and quartz matrix. Samples 1-4 is a 400-ft. sequence with attitude 125, 40°SW. Argillites are common in any low spot on the ridge, quartzites and sandstone in the higher parts. Dips vary on either side of the vertical. From a distance, the sequence is monotonous, southwest-dipping. Unit measured with pogo stick, and with approximate dip of 45°SW, thickness is estimated</p>	3400'	11470'
11	<p>Unit only observed from the air. It appears to be the same kind of sequence as at the base of Unit 12 - dominantly quartzites with minor argillites. Consistent attitude as at base of Unit 12. Thickness estimated</p>	400'	8070'
10	<p>Quartzite, dark grey to black, fine crystalline, medium bedded, fractured and veined with white quartz. Interbeds are altered argillites? and occasional quartzites as in Unit 9. Forms cliff exposure on line of section, but not on prominent ridge to east. Attitude 115°, 40°SW. Thickness estimated</p>	100'	7670'
9	<p>Unit only observed briefly at base and from the air. It consists dominantly of quartzite, grey-green, fine crystalline, with floating coarse grains, mostly medium bedded, weathering medium to dark grey, and forming prominent ridge. Occasional argillaceous interbeds, strike and dip constant with that in Unit 10. Estimated thickness</p>	1200'	7570'

Unit No.	Lithologies	Thickness (ft.)	Ht. above base (ft.)
8	Lithology is mixed quartzites and argillites and may be a fault repeat of Unit 6. Structural relations are not obvious, but dip reverses at small notch below main ridge.		
7	Medium grey, fine grained, medium bedded quartzite (125°, 55°S), weathering brownish grey in lowest 500 feet; upper 1500 feet interbedded medium grey, fine grained quartzite and dark blue-black chert.	1970'	6370'
6	Interbedded highly contorted argillite-phyllite in medium grey, fine crystalline, medium bedded, pale brown-grey weathering quartzite; occasional inclusions of meta-phyllite. Quartzite contains 1/8" eyes of cloudy quartz? plus rare sulphide veinlets. Rocks are jointed and in part veined with white quartz. Attitude: 150°, 65°SW. Unit has gradational upper and lower contacts.	150'	4400'
5	Slate-phyllite, massive, green and maroon	245'	4250'
	Phyllitic argillite to slate, green dominant with reds and greys, some folding and quartz veining. 400 feet above base attitude is 150°, 45°SW. 450 feet above base section is offset eastward to creek bottom where better exposure can be found upwards in the succession. At 610 feet is good outcrop of banded green and maroon argillite, slaty to phyllitic, forms waterfall in creek. Here attitude of bedding is 120°, 35°SW&NE, with minor repetitions by small isoclinal folding. Green is dominant color and cleavage is parallel to bedding in nearly all cases. Beds altered towards chert are fractured perpendicular to bedding. Green and maroon sequence is reminiscent of Airport Lake Section (107B3). 850 feet above base is green phyllite with interbeds of medium grey, fine-crystalline quartzite 1' to 1 1/2' thick, weathering light grey and jointed perpendicular to bedding. Attitude 120°, 45°SW.	860'	4005'
	Limestone, dark grey, very fine crystalline, brecciated and veined with white calcite, slightly silicic, weathering medium grey.	100'	3145'

Unit No.	Lithologies	Thickness (ft.)	Ht. above base (ft.)
4	Argillite, phyllitic, green, purple, red and grey; very siliceous 25 feet above base. Numerous shears and small folds throughout	85'	3045'
	Mostly covered. Some limestone and argillite rubble	330'	2955'
	Limestone, dark grey, very fine grained, fractured and veined with white calcite, siliceous, yellowish grey weathering.	90'	2625'
3	Argillite-phyllite, sericitic, variegated green, red and yellow; minor limestone interbeds. Unit as a whole weathers yellowish grey. Fault repeating part of succession 260' above base. Bedding attitude 140°, 80°SW.	390'	2535'
	Limestone, black, fine- to cryptocrystalline, with sub-conchoidal fracture, medium bedded, yellowish grey weathering, cliff forming. 55' above base bedding attitude is 100°, 25°SW.	190'	2145'
2	Phyllite, grey-green, blue-green weathering; bedding attitude 120°, 60°SW	300'	1955'
1	Limestone, dark grey, fine crystalline, silty; occasional intervals shaly to argillaceous	90'	1655'
	Covered	315'	1565'
	Limestone, dark grey silty, bedded	225'	1250'
	Covered	150'	1025'
	Covered. Some rubble of yellowish grey limestone	390'	695'
	Limestone, dark grey, very fine to fine crystalline, thoroughly brecciated & red weathering at base, with white vein quartz common; yellowish grey weathering above.	425'	505'
	Argillite-phyllite, dark grey to green-grey to orange-brown, silty in part, weathering rusty grey, cleaved. Bedding attitude 140°, 35°SW	50'	80'

(5)

Unit No.	Lithologies	Thickness (ft.)	Ht. above base (ft.)
	Limestone, dark grey, very fine to fine crystalline, medium bedded, forming small cliff, interbedded with thin bedded, silty limestone. Limestone weathers medium grey, is badly fractured and abundantly veined with white calcite. Bedding attitude: 105°, 50°SW	30	50

Note base of section appears to be a southwest-dipping thrust fault repeating the limestones of Unit 1. True thickness of Unit not known.

Section 117D2

The following partial section of the Upper Cretaceous Series on Yukon Coastal Plain was measured on the right bank of Trail River at west longitude 138°32', north latitude 69°02'. It is positioned on NAPL vertical air photo A13383-159 by the following Cartesian coordinates with respect to the centre of the photograph: X=+7.72cm, Y=-9.37cm. Its base is at river level. Shales within it are dated as Late Cretaceous (Senonian) according to W.W. Brideaux (See Unit 3 below).

Unit	Description	Thickness (feet)	
		Unit	From base
6	Sandstone and shale: sandstone, light grey, fine-grained, platy to blocky weathering, in beds 1 inch to 4 feet thick; interbedded with shale, dark grey, fissile, in beds ½ inch to 12 inches thick. Unit is about 60% sandstone, 40% shale. No samples at this point. Beds are essentially flat-lying.	6	155
5	Sandstone and shale: interbedded and acutely deformed by folding and faulting. Axial surfaces of folds commonly dip 45° south. Folds bounded and truncated by reverse faults dipping 20° to 70° south. Both folds and faults suggest differential northward transport of the unit with respect to nearly flat lying beds above and below. No samples here.	34	149
4	Conglomerate, poorly sorted but with textural layering quite apparent; flat-lying. Phenoclasts subangular to subrounded, comprising banded medium and dark grey chert, green chert, light and medium grey quartzite, soft, medium grey shale, medium grey quartz-chert fine and medium grained sandstone, and coarse-grained biotite granite. Sparse pale yellowish brown weathering, dark grey, coarsely recrystallized limestone. Large channels up to 130 feet across and 15 feet deep.	47	115
3	Shale, dark grey, fissile, with thin pale yellowish grey and rusty brown weathering bentonitic layers up to ½ inch thick. 570NC2MF (GSC loc. C18162)* from bottom one foot of unit. 570NC3MF (GSC loc. C18163) from top one foot of unit.	11	68

Unit	Description	Thickness (feet)	
		Unit	From base
2	Conglomerate, poorly sorted but with textural layering quite apparent as in Unit 4. Phenoclasts of chert and quartzite, subangular* to subrounded, commonly 1 inch to 3 inches maximum observed dimension but with occasional tabular blocks of medium grey, rusty weathering, conglomeratic sandstone up to 2 feet thick and 8 feet long. Flame structure in some of the blocks suggest indigenous origin for some blocks.	53	57
1	Conglomerate, very poorly sorted, with angular to subangular to subrounded clasts commonly 3 to 6 inches maximum observed dimension. Some tabular sandstone blocks measure up to 4 feet long and one foot thick. Base of exposure.	4	4

*Upper Cretaceous, Senonian