Appendix 1 – Mineral Occurrence and Deposit Data.

A1.1. Introduction to Appendix 1 – Mineral Occurrences of the South Nahanni River Region

Mineral occurrences of the Nahanni region are located in Figure 6.1 and the plots shown in this appendix (Figures A-1 (i), (ii), (iii) and (iv), based on data listed in Table A-1.1. These data were compiled in 1986 and 1987 from sources that are cited in Table A-1.1 and listed in the References to the Open File report. They have been provided digitally to the Normin.db database operated by DIAND in Yellowknife. Gordey and Anderson (1993) provide synoptic property descriptions of 31 occurrences in Yukon Territory and 22 on the NWT side of Nahanni map sheet. All of these within the area of Fig. A-1 are described in Table A-1.1.

Expanded and updated synopses of nine of the more important mineral occurrences in the region are also provided for reference purposes. One of these, gemstones associated with the O'Grady complex, were not known in 1987. The nine deposits and occurrences are named in Figure 6.1 and on the plots shown in this appendix (Figures A-1 (i), (ii), (iii) and (iv), and their synopses are located in the following sections:

A-1.2 - CanTung (skarn tungsten),
A-1.3 - Howards Pass (Sedex, shale hosted lead-zinc),
A-1.4 - Lened (skarn tungsten and emeralds),
A-1.5 - Little Nahanni Pegmatite Group (lithium),
A-1.6 - Mawer (carbonate hosted lead-zinc)
A-1.7 - O'Grady Aplite-Pegmatite Complex (gemstones),
A-1.8 - Prairie Creek (vein-, carbonate- and shale-hosted silver-lead-zinc)
A-1.9 - Selena Creek (placer gold)
A-1.10 - Vulcan (Sedex, shale-hosted lead-zinc)

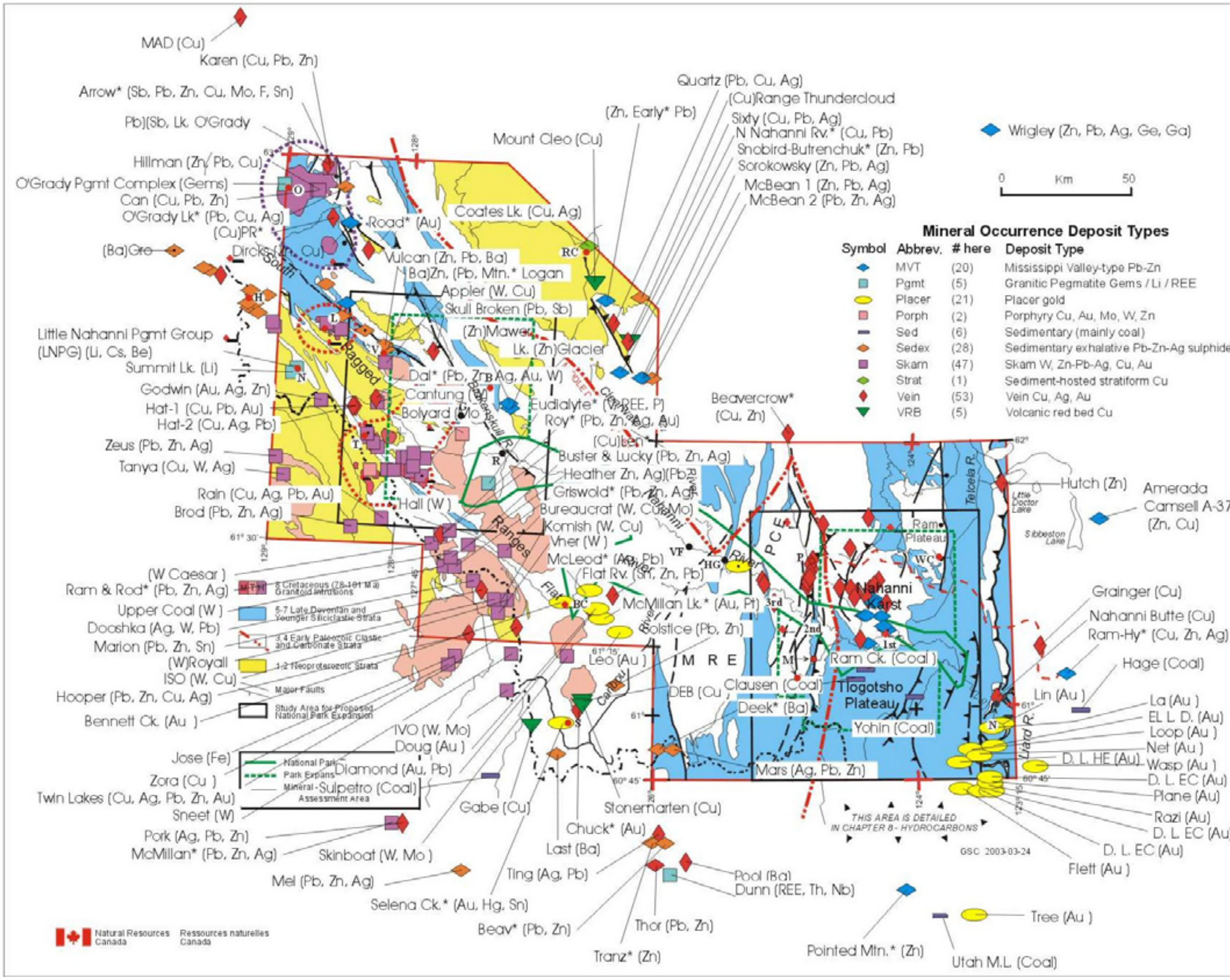

Figure A-1(i). Mineral occurrences of the South Nahanni River region. * = more than one deposit type is present, or occurrence has attributes of more than one type. Red boxes locate detailed areas labelled in Figs. A-1(ii), (iii) and (iv). MRE = Meilleur R. Embayment, PCE = Prairie Creek Embayment, SS = Sombre Salient. Localities (black dots) and mineral sites (red dots) are: 1st, 2nd, 3rd = Canyons of Nahanni R.; B = Broken Skull; BC = Bennett Creek placer gold; G=Glacier L., H = Howards Pass zinc-lead; HG = Hells Gate; L = Lened tungsten; M = Meilleur River hot springs; N = Nahanni Butte community; O = O'Grady gemstones; P = Prairie Creek silver-lead-zinc; R = Rabbitkettle Hot Springs; RC = Redstone copper; S = Selena Creek placer gold; T = Tungsten Mine and Hot Springs; V = Vulcan zinc-lead; VF = Virginia Falls; WC = "Wretched Creek" (inf.) placer gold. Data are in Table A-1.1.

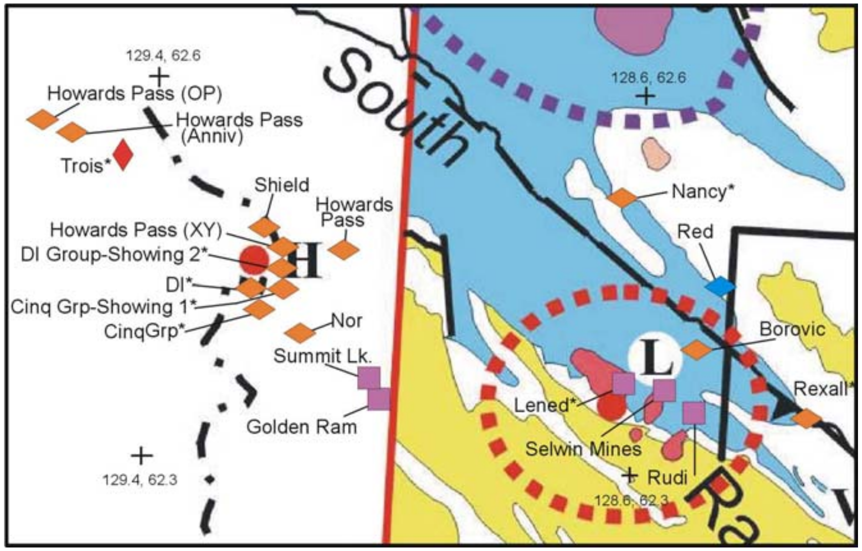

Figure A-1(ii). Labelled showings in the Howards Pass – Lened area. Geological base is expanded from, and caption is as Fig. A-1(i).

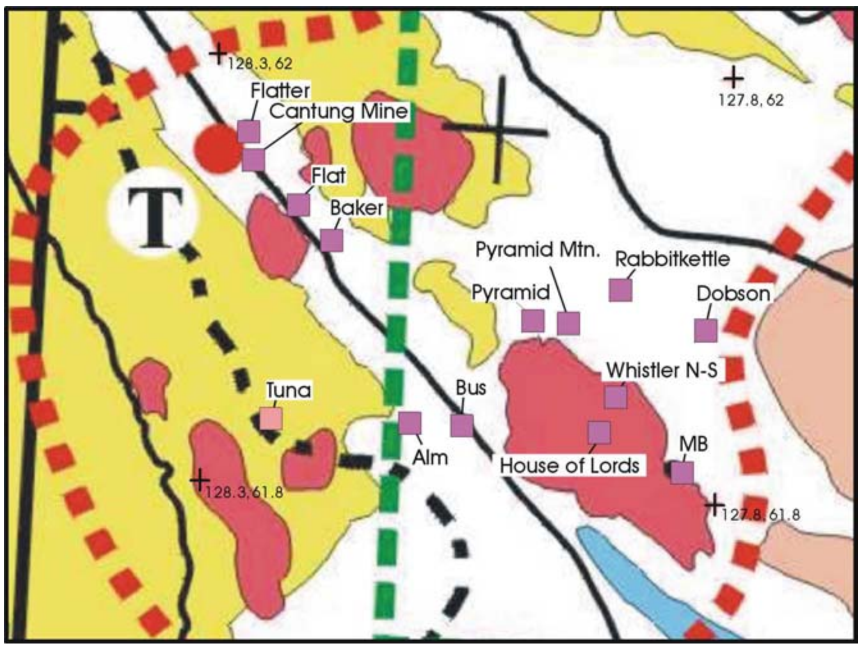

Figure A-1(iii). Labelled showings in the Tungsten area. Geological base is expanded from, and caption is as Fig. A-1(i).

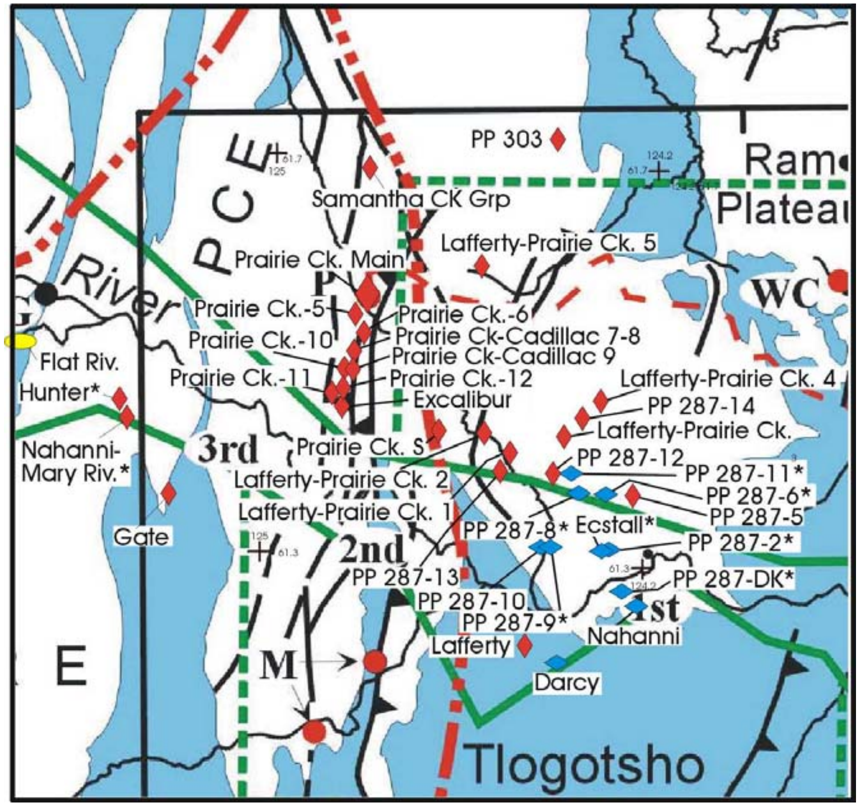

Figure A-1(iv). Labelled showings in the Prairie Creek – Nahanni Karst area. Geological base is expanded from, and caption is as Fig. A-1(i).

Table A-1.1. Partial listing of mineral occurrences in the South Nahanni River area. This table is presented in three ways. First, below is a listing by NTS Map area, based on the original Archer Cathro File of the region. Footnotes explain the abbreviations. This table preserves the original formatting from a 1987 compilation by S.M. Hamilton, in non-proportional (elite) font. Changing to a proportional font will disrupt the columns. An Excel© version exported from a preliminary database is included on CD-ROM (file name: Table A-1.1. Nahanni Mineral occurrences.xls) along with an Excel© sheet of location data that were used in MapInfo© (file name: Table A-1.1. Nahanni Mineral occurrences locations.xls) to produce a mineral occurrence layer for Figure 6.1 and the plots shown in this appendix (Figures A-1 (i), (ii), (iii) and (iv).

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95B /5	ACSE36	Pointed Mtn. Pan Am 1983	060 21 123 57	Zn; gas well (MVT)	Trace Spl in Dev. shales @ 3197 m in shut-in gas well	(A)
95B /6	B2	Tree	060 16 123 25	Au (PLACER)	Lapsed claim	(A)
95B /3,4, 13	B102- B108	Utah M.L. Coal Ex. Lic.	060 15 123 40	Coal	Ft. Liard ~260x10^6 short T subbit. B Sawmill ~170x10^6 short T high vol. C	(A) (A)
95B /11	B1 D1000	Razi, Winnie, Linberg, Lower Liard	060 45 123 21	Au (Placer)	Active claim	(C)
95B 11	B3	Plane	060 46 123 20	Au (Placer)	Active claim	(C)
95B /11	B4	Wasp	060 50 123 00	Au (Placer)	Lapsed claim	(C)
95B /11-14	B11	Dredging Lease EC	060 44 123 25	Au (Placer)	Active lease	(C)
95B /12	B5	Flett	060 44 123 33	Au (Placer)	Active claim	(C)
95B/ 13-14	B7	Loop, Cube	060 53 123 30	Au (Placer)	Lapsed claim	(A)
95B /14	B8	Lin	060 59 123 16	Au (Placer)	Lapsed claim	(C)
95B /14	B9	Net	060 54 123 20	Au (Placer)	Active claim	(C)
95B /14	B10	La	060 58 123 21	Au (Placer)	Active claim	(C)
95B/ 11-14	B11	Dredging Lease EC	060 44 123 20	Au (PLACER)	Active lease	(C)
95B/ 13-14	B12	Dredging Lease GG	060 47 123 20	Au (Placer)	Active lease	(C)
95B/ 13-14	B13	Dredging Lease HE	060 50 123 35	Au (Placer)	Active lease	(C)

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95B/ 13-14	B14	Dredging Lease EL	060 52 123 26	Au (Placer)	Active lease	(C)
95C /3	ACSE37	Beavercrow, SOBC Shell K2	062 02 125 01	Cu, Zn	Trace cpy @ 635 m, spl @ 805 m in SHAL in abandoned well drilled 1963	(A); INAC (1982, p. 83)
95C /5	ACSE71	Meil	060 53 125 44	?	Claims on Ordovician & Devonian SHAL	(C); Lapsed
95C /5	ACSE68	Beav	060 29 125 50	Pb Zn	Geochemical anomalies in Ordovician & Devonian SHAL straddle Beaver Fault	(C); INAC (1983, p. 81; 1985, p. 119-120). Lapsed.
95C /5	ACSE69	Tranz	060 29 125 56	Zn	Zn-rich ferricrete draining Ordovician & Devonian SHAL	(C); INAC (1983, p. 81). Lapsed.
95C /5	ACSE51 CX03	Dunn, Vista, Beaver R.	060 22 125 47	REE Th Cu Nb U	as discontinuous pods within SYEN stock & in peripheral SKRN-like zones	Ballantyne (1977, p.B7), INAC (1981 p.131; 1982, p. 83). Lapsed.
95C /5	ACSE23 CX04	Pool	060 25 125 40	Ba (VEIN)	Vertical Bar VEINs in Manetoe facies	Slaney (1979), INAC (1982, p. 83). Lapsed.
95C /5	ACSE70	Thor	060 24 125 54	Pb, Zn (SEDEX)	Minor, on west side of Late Cretaceous SYEN plug in Ordovician-Devonian LMST.	(C); INAC (1982, p. 83). Lapsed.
95C /12	ACSE53 CX05	Ting, Ginn	060 31 125 53	Ag Pb Mo Th U Zn (VEIN)	Gal-Spl-Mol VEINs in AREN near radioactive zones in Tertiary SYEN.	Harrison (1981), INAC (1981, p. 131), Morin et al. (1980, p. 50), Lord et al. (1983, p. 50). Lapsed.
95C /13	ACSE66	Mars + Rush claims	060 50 125 48	Ba (Ag Pb Zn) (SEDEX)	claims covered Ordovician to Devonian SHAL	INAC (1983, p. 81; 1985, p. 120). Lapsed.
95C /13	ACSE67	Deek claims	060 50 125 55	Ba	claims covered Ordovician to Devonian SHAL.	Lapsed. INAC (1983, p. 81)
95D /6	AC5 D1002	Mel	060 21 127 24	Ba Pb Zn (Ag Cu) (SEDEX)	Up to 16.5 m @ 3.2% Zn + 2.2% Pb + 53.3 % Ba (DDH 11), in sheared Camb-Ord SHAL, PHYL, l. Camb LMST,	Carne (1976). Lapsed.
95D /11	AC26	Sulpetro, Rock River	060 42 127 13	Coal $\sim 50x10^6$ T	>150 m series sub-bituminous Tertiary coal seams, $\sim 56x10^6$ T lignite A to sub-bituminous C coal at <80 m depth	INAC (1982); Wright and Miller (1986).
95D /12	AC6 D1003	McMillan, Quartz Lake	060 31 127 57	Pb Zn (Ag) (SKRN / SEDEX)	Concordant & discordant in Hadrynian upper Grit Unit, GRPH-Pyr ARGL	Sinclair et al., 1976, p. 154-155; YGE 79-80, p. 105-109.
95D /12	AC11	Pork	060 31 127 52	Ag Pb (Zn As)	Sid VEINs + BREX, many small Gar-Slt showings, hydrothermal alteration in limy QZTE of Hadrynian Unit 1.	Sinclair & Gilbert (1975), p. 83-84; Sinclair et al. (1976), p. 155-156
95D /15	AC8	Gabe	060 54 126 54	Cu	Mal + Cpy in mid-Ordovician basalts	Gabrielse and Blusson (1960), p. 16
95D /15	AC9	Last	060 48 126 42	Ba	Blebs in black GRPH argillite	Gabrielse and Blusson (1969), p. 16
95D /15	AC10	Stonemarten	060 59 126 31	Cu	In lower Cambrian BSLT & TUFF	Gabrielse and Blusson (1969), p. 16
95D /15	AC25	Chuck	060 58 126 33	Au As	Geochemical anomalies, lower Cambrian BSLT, DOLM & Camb-Ord Rabbitkettle LMST	

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95D /15	D1, D3-17	Selena Creek, Caribou River	060 57 126 41	Au Ba Hg Sn W (PLACER+?VEIN)	Angular Au+Bar+Cas+Sch+Wlf in HMCS. Lower Cambrian to Mid Ordovician ARGL & LMST cut by Cretaceous granodiorite.	Richards (1989), Sirius/Verdstone (1989), Rowan (1989).
95E /1	AC42	Solstice	061 04 126 16	Pb Zn (SEDEX)	Gal+Spl in Road River Gp limy SHAL	
95E /2 (1973,	AC2 CX2	Skinboat/Rino /E Skinboat L (2 km SE)	061 10 126 39	W Mo (SKARN)	In Qtz+Epi filled FRAC in SKRN, Camb.- Ordovician LMST, BSLT+TUFF cut by GNOD	Padgham et al. (1976, p.111-112?); ? ? p. 117?) Gabrielse et al. p 114).
95E /3	AC31 D1004	IVO	061 02 127 06	W (Mo) (SKARN)	15 pods Sch Msh Mol SKRN, lower Camb. PHYL QZTE LMST DOLM; <.5% WO_3, 1 ddh	INAC (1981a, p. 135))
95E /3	AC33	Hooper	061 14 127 25	Pb, Zn, Cu, Ag (VEIN)	Gal Spl Tet Pho Cpy in CASI & ALTN ARGL; with FRAC & BREX near GOID	INAC (1981A, p.136-137).
95E /3	AC34	Sneet	061 10 127 05	W	Sch panning anomalies; no Sch found in outcrop	
95E /4	AC3	Zora	061 07 127 34	Cu (SKARN)	Minor Cpy in local Gar-Dio-Mag SKRN	
95E /4	AC35	Jose	061 09 127 31	N/A	massive Mag in Dio SKRN, in lower Cambrian LMST near Cretaceous GOID	
95E /5	AC28	Griswold, Rio, Rod, Sud	061 29 127 33	Pb Zn Ag (W) (SKRN+VEIN)	Pho Gal Spl Qtz SKRN in Camb.-Ord. Rabbitkettle LMST near large QZMZ. 14 ddh; <2% Pb, 4% Zn, .04% WO_3, 17g Ag	INAC (1982, p. 90).
95E /5	AC32	Upper Coal	061 29 127 38	W (SKARN)	SKRN up to 10 m wide along contact of silty LMST & GNOD. 0.14% WO_3 over 5m.	INAC (1981A, p.135)
95E /6	AC4 CX5 E20	Twin Lakes/ Ram/Dell/Fox Neil/Sunset	061 16 127 03	Cu Ag Pb Zn Au (VEIN)	15 sulphide showings in FRAC systems in Cambrian DOLO+ARGL+QZTE along GBRO dyke	Skinner (1961, p.46); Gabrielse (1973, p.114); Morin ?et al. (1979, p.75-77; 1980, p.?265). Sevensma (1971); Cukor, (1977)
95E /6	AC5	ISO/Komish	061 22 127 08	<.54%W; <.12%Cu (SKARN)	Dio-Gar-Sch>Cpy in limy ARGL pendant within large Bio GRNT stock	
95E /6	AC6 CX4	Marion/ Coal R.	061 24 127 20	Pb Zn Sn (VEIN)	Pyr+Gal+Spl+Stn+Frk in narrow Qtz- Cal-Sul VEINs in Camb ARGL near stock.	Slaney (1979); Gabrielse et al. (1973, p.114); Evans (1957, p.119- 127); Mulligan (1957, p.75).
95E /6	AC27	Dooshka, Rose	061 26 127 24	Ag W Pb Zn Cu (SKARN)	Sch in Mag-Gar-Dio-Cal-Wol SKRN in thin-bedded limy Ord-Sil SHAL near GOID; 10 m trench: .1% WO3, 5.5g Ag, .2% Pb, .5% Zn, 34 ppb Au	Morin et al (1980, p. 30); INAC (1981A, p.137; 1981B) *
95E /6	AC36	Royall	061 22 127 14	W	SKRN float; lower Cambrian PHYL cut by small unmapped GOID	
95E /6	AC37	Hogie	061 18 127 23	?	"geochemical anomaly" in Paleozoic SHAL at contact of GOID	
95E/6 +95D /15	AC38 CX01	DEB/ Martin/ Grant/ Cliff/ Pat	061 00 126 31	Cu (VRB)	3 showings Cpy+Bor in lower Camb BSLT+TUFF & underlying QZTE+CONG	1 ?
95E /6	AC39 CX03	Komish/ISO	061 22 127 11	<.5% W; Cu (SKARN)	Sch>Cpy in thin SKRN beds in lower Cambrian PHYL phyllites near GOID	Slaney (1979).

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95E /6	AC40	Vner	061 19 127 12	W (SKARN)	Sch-bearing SKRN float from LMST lenses within lower Cambrian PHYL	
95E /7	AC25 CX07	McLeod/McLeod Ck. (6 km ESE of Flat R.)	061 24 126 32	Au (PLACER) Pb (VEIN)	Minor coarse Au, old placer workings. Best Au in fine clay fractions. Gal in 4 m Qtz VEIN (see Diamond AC1).	Gabrielse et al. (1973, p.115); Lord (1951, p.265); Kerr (1934, p.107-111; Gibbins et al. (1977, p.107.
95E /7	CX6 E2	Bennett Ck.(2 km SE Flat R) /Bo/Ci/Li/Wi	061 22 126 43	Au (Placer)	Coarse gold found on old placer workings.	Gabrielse et al. (1973, p. 115); Lord (1951, p.265).
95E /8	AC1	Diamond/ McLeod	061 20 126 28	(Au Pb) (VEIN)	Claims for placer exploration; Gal in Qtz VEIN in Camb-Ord LMST+DOLO+SHAL	Gibbins et al. (1977, p. 107) ?or Laporte et al. (1978, p. 107) ?MIR (NWT) 74-75?
95E /8	AC41	Schimanek	060 16 126 16	placer surface rights?	Ordovician-Devonian SHAL + LMST	
95E /8	CX8	Flat R.- McLeod Ck. (17 km E)	061 24 126 19	Sn, Zn, Pb (VEIN)	Cal VEIN along fault in rusty ARGL.	Gabrielse (1973, p.114); Evans (1957, p.119).
95E /8	CX9	McMillan L./ Ticker	061 19 126 24	Au (Pt??) (PLACER)	Dredging operations in lake sediments; Platinum unconfirmed.	Gibbins (1977, p.178); Gabrielse et al. (1973, p. 115).
95E /8	E12, E14	Leo/ Clark L.	061 16 126 15	Au (Placer)		(A)
95E /8	E23	Doug/ Moose Ck.	061 21 126 27	Au (Placer)		(A)
95E /11 /12	AC9,10 CX10	Buster & Lucky/ BG/ Main Showing/ Snipe Lake	061 34 127 27	Pb Zn Ag (Cu W) (SKARN)	30 Pyx-Gar-Epi SKRN along >3 km of LMST-GNOD contact; Spl>Gal+Pho+Sch in 2 main showings; _5% Pb+Zn & _1 oz Ag.	Skinner (1961 p.46); Cathro (1969, p. 18); Findlay (1969, p. 90-91); Gabrielse (1973, p. 114); GCNL, 17 Aug & 21 Sept, 1982.
95E /11	AC30	Bureaucrat/ Crat	061 33 127 10	W Cu Mo Zn (SKARN) <1.9 % WO_3	Sch Spl Mol in lenses Gar-Dio SKRN in pendant silty LMST; Fsp PORP dyke to east & Cretaceous QZMZ to west.	Hooper (1981)
95E /12	AC11 CX14	Ram & Rod Gps/ Grizzly/ Turner	061 32 127 35	Pb Zn Ag (Cu W) (VEIN & SKARN)	Four SKRN zones plus VEIN system. in both areas.	Gabrielse et al. (1973, p.114); Northern Miner, October 17 1974, p. 24.; Padgham et al. (1975, p. 156).
95E /12	AC12 CX13	Heather	061 31 127 35	Pb Zn Ag Cu W (SKARN)	Zones Gal+Spl+Cpy in Dio-Epi-Gar SKRN At DORT-LMST contact.	Findlay (1967, p. 69)
95E /12	AC13 CX15	Roy/ Rio/ Fox	061 36 127 40	Pb Zn Ag Au (VEIN/SKRN 2)	Gal-Spl-Asp-Pho in VEIN/Fault/SKRN in HNFS limy Cambrian SLTS + Rabbitkettle LMST near QZMZ. 16x10$\underline{4}$ T @ 0.042 Au + 4.59 Ag + 5.2 Pb + 3.1 Zn, _1.6 m wide	Padgham (1978, p. 141); Gabrielse et al. (1973, p. 115); K.M. Dawson (pers. comm. 1986)
95E /12	AC19 CX12	Hall/ Flat River	061 37 127 36	W (SKARN)	Pho & minor Sch in SKRN in Rabbit-kettle LMST at margin of GOID stock.	Gabrielse et al. (1973, p. 115)
95E /12	AC20	Len	061 36 127 40	Cu	Described only as a copper occurence; 1 mile from an intrusion.	
95E /12	AC21 CX16	Caesar/Tung-sten permit 36	061 34 127 44	W (SKARN)	Sch in Pho-rich SKRN in Rabbitkettle LMST at contact of stock.	Slaney (1979)

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95E /13	AC15 CX17	MB / Flat R. (30 km NE Pass Ck.)	061 49 127 50	W, Cu (SKARN) 0.3-0.4 % WO_3.	Sch in Dio-Gar-Act-Ido-Pho-Pyr SKRN ~3x100 m; shallow; in Rabbitkettle Fm. ~1.5 km strat. above CanTung horizon	Blusson (1968, p.35); Gabrielse et al. (1973, p. 115 + map).
95E /13	AC16 CX21	Whistler N & S	061 51 127 54	W, Cu, Zn (SKARN)	2 SKRN - North & South, at contact of PORPH GRNT & LMST.	Gabrielse (1973, p. 114)
95E /13	AC18	Rabbitkettle	061 54 127 54	W (SKARN)	Minor Sch SKRN; north contact of GOID with Rabbitkettle Fm.	Gabrielse et al. (1973, p. 115).
95E /13	AC22	Pyramid/ Cul de Cirque	061 53 127 59	W (Cu Mo Bi Sn) (SKARN)	SKRN at contact of Pyramid Batholith & Cambrian sediments; steep cliff.	8?JP???
95E /13	AC23 CX18	House of Lords/ Simons / Flat River	061 50 127 55	W (Cu) (SKARN) 0.05-0.6 % WO_3 over 1-9 m	2 showings 0.8 km apart: Sch+Pho in Dio-Gar SKRN at QZMZ/Rabbitkettle contact; QZTE+Sch+Cpy in Ga SKRN	Gabrielse (1973, p.115); Blusson (1978, p.36?).
95E /13	AC24 CX20	Pyramid Mtn / Glacier	061 53 127 57	W (SKARN)	Several low grade Dio SKRN bands in in Cambrian LMST, surrounded by ice.	Blusson (1968, p.?); Gabrielse et al. (1973, p. 115 and map)
95E /13	AC43 CX19	Bolyard, Mt. Sydney Dobson	061 59 127 32	Mo (PORPH)	Mo along joint surfaces in PORPH GOID.	Gabrielse et al. (1973, p.115)
95E /13	AC44	Eudialyte	061 48 127 19	V REE PO_4 U Fl	Eud+Flo+Alb+Qtz+Cal in altered sill margins near Hole-in-the-Wall Stock.	
95E /13	AC17	Dobson	061 53 127 49	W (SKARN)	Minor Sch SKRN; NW contact of GOID with Rabbitkettle Fm.	Gabrielse et al. (1973, p. 115)
95F /1	ACSE6	Clausen	061 08 124 25	Coal (SEDIM)	A 1.5 m seam in the Mattson Formation	Harker (1963, Strat. Sect. #3); Alberta Research Council Rept. 66-6, p. 13. ?
95F /1	F1	Ram Creek	061 10 124 20	coal (SEDIM)		(C)
95F /6	ACSE8 CX1	Gate/ Gate 15	061 24 125 04	Pb Cu Zn (VEIN 7)	Gal+Spl+Tet in Qtz-Sid VEIN near or within fault in LMST & DOLO forming a linear gossan bisecting Park boundary.	Kerr (1934, p. 107-111); Padgham et al. (1975, p. 57-58).
95F /6	ACSE9	Hunter	061 29 125 10	Cu (VEIN? 7)	"22 miles S of Virginia Falls copper showing on the south bank...Nahanni R."	Kerr (1934, p. 107-111)
95F /6	CX2	Nahanni - Mary River	061 28 125 09	Cu (VEIN? 7)	Area underlain by SHAL & LMST.	Douglas and Norris (1976b); INAC Mineral Occurrence Map 95F
95F /7	ACSE29 CX6	Excalibur/ Snow Group/ Prairie Ck #12 Zone	061 28 124 49	Ag Pb (VEIN 6)	12 Pb-Zn anom. + Gal-Cpy-Pyr in Qtz-Cal float; S extension Cadillac VEIN. Selected samples <12.3 oz Ag, <15% Pb.	Padgham et al. (1975, p.165; 1976, p. ?; Stannex Minerals Ltd. (1968, 1969, 1970); Thorpe (1972, p. 139); Douglas (1961).
95F /7	CX3	Prairie Ck (south)	061 28 124 34	Cu Pb (VEIN 6)	VEINs in DOLO; See 95F/10, ACSE7	Deposit type based on overlay to INAC Mineral Occurrence Map 95F
95F /7	CX4	Prairie Ck # 10 Zone	061 30 124 49	Pb Zn Ag (VEIN 6)	Gal+Spl in sheared LMST & DOLO. See 95F/10, ACSE7	Thorpe (1972, p.139); Padgham et al. (1975, p.165); Douglas (1961).
95F /7	CX5	Prairie Ck # 11 Zone	061 29 124 49	Pb Zn Ag (VEIN 6)	Gal+Spl in sheared LMST & DOLO. See 95F/10, ACSE7	Thorpe (1971, p.139); Padgham et al. (1975, p.165); Douglas (1961).
95F /7	CX6	Prairie Ck # 12 Zone	061 29 124 49	Pb Zn Ag (VEIN 6)	Gal+Spl in sheared LMST & DOLO. See 95F/10, ACSE7	Thorpe (1972, p.139); Padgham et al. (1975, p.165); Douglas (1961).

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95F /8	ACSE31	Lafferty	061 17 124 23	Cu Pb Zn (VEIN 5)	Gal+Cpy erratic in Qtz VEINs in en echelon FRAC; 76x460 m vertical NE zone.	(A)
95F /8	ACSE44	Darcy/ near First Canyon	061 16 124 20	Pb Cu Zn (MVT 6)	Minor Gal+Cpy+Spl in: 1) Cal-Qtz FRAC; (2) DOLO BREX float from Arnica Fm.	(A)
95F /8	ACSE45 CX17, 18	Ecstall/ Forks/ PP 287 Showings 3&4	061 22 124 15	Zn Pb (Cu) (VEIN+MVT 6)	2 showings, 1 each fork Lafferty Ck; Minor Spl+Gal in vuggy crinoidal DOLO. Arnica Fm 270 & 400 m below Manetoe.	Padgham et al. (1976, p. ?115, 161)
95F /8	ACSE46	Nahanni/ DK	061 19 124 11	Zn Pb (MVT 6)	Spl lenses <20 cm thick in 60 cm bed BREX DOLO; discont. along 760 m 60 m below Manetoe Facies.	Padgham et al. (1976, p. 115)
95F /8 95F.	CX7	Lafferty - Prairie Ck-1	061 27 124 26	Cu (VEIN 7)	In DOLO, LMST or SHAL.	Deposit type based on overlay to INAC mineral occurrence overlay
95F /8 95F.	CX8	Lafferty - Prairie Ck-2	061 28 124 29	Cu (VEIN 7)	In DOLO.	Deposit type based on overlay to INAC mineral occurrence overlay
95F /8 95F.	CX9	Lafferty - Prairie Ck-3	061 28 124 20	Cu Pb (VEIN 7)	In DOLO.	Deposit type based on overlay to INAC mineral occurrence overlay
95F /8	CX10	PP 287 - DK Showing	061 20 124 13	Zn Pb (Cu) (MVT+VEIN 7)	In BREX zones & vugs in DOLO or LMST.	Padgham et al. (1976, p.115).
95F /8	CX11	PP 287 - Showing 10	061 22 124 22	Cu Pb (MVT+VEIN 7)	Area underlain by DOLO, LMST or SHAL.	Padgham et al. (1975, p.161-162).
95F /8	CX12	PP 287 - Showing 11	061 26 124 19	Cu Pb (MVT + VEIN 7)	Area underlain by DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX13	PP 287 - Showing 12	061 26 124 21	Cu (VEIN 7)	Area underlain by DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX14	PP 287 - Showing 13	061 26 124 27	Cu (VEIN 7)	In DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX15	PP 287 - Showing 14	061 29 124 18	Cu (VEIN 7)	In DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX16	PP 287 - Showing 2	061 22 124 14	Cu Pb (MVT+VEIN 7)	Stratabound vug-filling or BREX in DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX19	PP 287 - Showing 5	061 25 124 12	Cu (VEIN 7)	In DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX20	PP 287 - Showing 6	061 25 124 15	Cu (MVT+VEIN 7)	STRAT vug-filling or BREX in DOLO. Pb-Zn suspected.	Padgham et al. (1975, p.161-162).
95F /8	CX22	PP 287 - Showing 8	061 25 124 18	Cu Zn (MVT+VEIN 7)	STRAT vug-filling or BREX in DOLO.	Padgham et al. (1975, p.161-162).
95F /8	CX23	PP 287 - Showing 9	061 22 124 21	Cu (MVT+VEIN 7)	STRAT vug-filling or BREX in DOLO. Pb+Zn suspected.	Padgham et al. (1975, p.161-162).
95F /9	CX24	Lafferty - Prairie Ck-4	061 30 124 16	Cu Ag (VEIN 7)	Area underlain by DOLO.	#28 INAC Mineral Occ. Overlay 95F

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95F /9	CX25	PP 303	061 44 124 22	Cu (VEIN 7)	Underlain by LMST, DOLO or SHAL.	#41 INAC Mineral Occ. Overlay 95F
95F /10	ACSE7 CX27	Prairie Ck/ Cadillac/ Pro Can Resources	061 34 124 47	Ag Pb Zn Cd (Cu Hg W) (VEIN 2)	Lenticular VEINSs <10 m wide within regional fault 2-20 m wide dipping 90° to 60° E in Whittaker Fm. LMST & DOLO. #2 Zone = 2 VEINs; #3 Zone = 3 VEINs in FRAC on E side of shear zone.	Douglas (1961); Douglas and Norris (1976b); E/M-J Mining Activity Digest June 6, 1975, p.10; Jonasson and Sangster (1975); Northern Miner (July 17/75; April 26/76; Sept 3/81;
	CX28 CX29 CX33	#1 Zone #3 Zone #2 Zone			1982 reserves proven + probable in Zone 3: 1.6 million tons averaging 5.4 oz Ag, 11.2% Pb, 12.2% Zn, 0.4% Cu	April 8, 1982); Padgham et al. (1975, p. 162-165); Thorpe (1972, p.130-139).
95F /10	ACSE28	Samantha CK Group	061 42 124 43	Ag Pb Zn Cu (Au) (VEIN 6)	90 m shear zone in Lim gossan in Ord.-Dev. CARB+CLAS; continues N&S. Grabs from trench: 3-8.6 oz Ag, .4-1.5% Cu, 8-80 % Pb, 30-50 % Zn, trace Au	ER, Nov/70 by J.A. Mitchell for Samantha - FFAC ?where did I get this ref?
95F /10	CX26	Lafferty - Prairie Ck 5	061 37 124 30	Cu Pb Zn (VEIN 7)	Area underlain by DOLO.	#40 INAC Mineral Occ. Overlay 95F
95F /10	CX30 CX31	Prairie Ck- Cadillac #7,8	061 31 124 48	Pb Zn Ag Cu (VEIN 7)	Qtz VEIN in deformed LMST & DOLO.	see 95F/10 ACSE7
95F /10	CX32	Prairie Ck- Cadillac #9	061 30 124 48	Pb Zn Ag Cu (VEIN 7)	Qtz VEIN in deformed LMST & DOLO.	see 95F/10 ACSE7
95F /10	CX34	Prairie Ck, #5 Zone	061 33 124 48	Ag Pb Zn Cd (VEIN 7)	Sulphide pods in sheared LMST & DOLO.	see 95F/10 ACSE7
95F /10	CX35	Prairie Ck #6 Zone	061 32 124 47	Ag Pb Zn (VEIN 7)	Sulphide pods in qtz VEIN in sheared LMST & DOLO.	see 95F/10 ACSE7
95F /11	CX36	Flat R mouth	061 32 125 21	Au (PLACER 7)	At mouth of Flat River.	Lord (1951, p.265); Douglas (1961).
95G /2	ACSE3 CX1	Ram-Hy/ Lin/ Pin/ Shell Liard # 2	061 11 122 47	Cu Zn (Ag Ni Cr V) (MVT+VEIN 7)	Cpy+Spl in BREX pods in Qtz+Cal VEINs & disseminated in SHAL+SLTS of Simpson Formation	Thorpe (1972, p. 127); Roed (1970, p. 24-34); Padgham et al. (1975, p. 166).
95G /2	ACSE27	Hage	061 03 122 40	Coal (SEDIM 7)	Coal float in Blackstone River	Hage (1945, p. 30)
95G /3	ACSE2 CX2	Nahanni Butte	061 05 123 19	Cu (VEIN 7)	Azu+Mal in FRAC in sparry DOLO & LMST.	Douglas (1961, p. 26); Hage (1945, p. 31).
95G /4	ACSE5	Yohin	061 04 123 58	Coal (SEDIM 7)	2 seams (2 & 1 m) high volatile B or C bituminous; in canyon; Mattson Fm.	Douglas (1961, p. 13); Hage (1945, p. 30)
95G /7	ACSE4	Grainger	061 17 123 00	Cu (VEIN 7)	Cpy & BREX slate in Qtz VEIN in float & seismic drill cuttings.	Roed (1970); Thorpe (1972, p.129);
95G /14	ACSE56	Hutch	061 53 123 21	Zn (VEIN 7)	Smt in FRAC in LMST+DOLO	(A)
95G /15	ACSE43 CX3	Amerada Cam- sell A-37/ Sibbeston L.	061 46 122 35	Zn Cu (MVT/VEIN 7)	Traces of Cpy+Spl in crystalline DOLO cuttings in dry oil exploration holes in Manetoe Facies.	Douglas (1961; 1962, p.15-17, 31); Thorpe (1972, p. 129).
95L /8	AC15 CX3 1014	Snobird- Butrenchuk/ SB/ N Nahanni R (headwater)	062 14 126 20	Zn Pb (MVT/VEIN? 5)	Spl>Gal in Qtz-Cal-Dol annealed BREX in DOLO+LMST, Sunblood Fm near thrust; 11 drill holes _5-8% Zn+Pb over <30 m (1975); >0.056% Ga, 0.12% Ga (1987)	Laporte (1978, p. 99); Gabrielse et al. (1973); exploration rept. by Murrell (1975) for Cominco Ltd.; Mining Journal March 20, 1987.

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
95L /1	AC2 CX2	McBean - Zone # 1	062 13 126 09	Zn, Pb, Ag, Cu (SEDEX)	Sulphide zone in DOLO.	Gabrielse (1973, p.114); Baragar (1963, p.40).
95L /8	AC18	Early	062 30 126 28	Zn, Pb (MVT?)	in BREX zone in DOLO. Higher grade podiform; is associated with intense fracturing & secondary dolomitization.	(A)
95L	AC17	Quartz	062 25 126 24	Pb, Cu, Ag (VEIN?)	along the Thundercloud Thrust Fault within a zone of faulted & silicified LMST 4 m wide & 200 m long.	(A)
95L	AC14	Mawer	062 06 127 11	Zn (MVT)	Spl in a 13 km long belt in Sunblood Fm. Grade estimated at 3% Zn in 43 m strat. thickness in main showing area.	(A)
95L	AC11 NMI?	Sixty	062 21 126 17	Cu, Pb, Ag (VEIN)	Minor Cpy widespread in Little Dal BSLT. Gal & Te local in Qz-Sid VEINlets cutting QZTE.	Mineral Inventory Cards, EMR
95L	AC03	Broken Skull	062 17 127 47	Pb, Sb (VEIN)	Considerable Zn was noted in float.	Gabrielse (1965, p.28)
95L	AC02	Sorokowsky	062 13 126 10	Zn, Pb, Ag, Cu (MVT)	Py, Spl & Gal replace LMST. Number of small patches of oxide, up to 7 x 18 m, along 1-2 km zone.	(A) Campbell (1962); Gabrielse (1965, p.28); Barager (1963?, p. 40)
95L	CX1	McBean - Zone # 2	062 13 126 05	Pb, Zn, Ag, Cu (SEDEX)	Sulphide zone in DOLO	Gabrielse (1973, p.114); Baragar (1963, p.40)
95L	CX8	Mount Cleo	062 34 126 34	Cu (VRB)	Bornite in basalts.	Redstone Mines Ltd. 1964?. (A)
95L	CX7	Coates Lake, Redstone, Plateau	062 42 126 37	Cu, Ag (STRAT)	Stratiform disseminated sulphides in calcareous SLTSs. Cu continuous for 4-5 miles within 4-7 beds.	Gabrielse (1973, p.113); Kirkham (1974, p.367-382); Chartrand et al. (1989); Coates (1964); Lord (1978, p.103-108); Lustwerk and Wasserman (1989); Lustwerk (1990); (Padgham et al. (1975, p.103-108); Jefferson (1978, p.157); Jefferson and Ruelle (1986); Jefferson and Parrish (1989); Ruelle (1982); Watson (1973).
95L	CX6	Thundercloud Range	062 31 126 12	Cu (SEDEX)	Ma along contact of Rapitan Group & Whittaker Formation.	Gabrielse (1973, p.114).
95L	CX5	N Nahanni R	062 21 126 16	Cu, Pb (?)	Cu disseminated in greenstone, Pb in stringers in QZTE.	(A)
95L	CX4	Glacier L (19 km E of)	062 05 127 10	Zn (?)	In LMST & DOLO.	Laporte (1978, p.99); Gabrielse (1973).
95O /4	ACSE13	Wrigley, Fry Group	063 12 123 33	Zn, Pb, Ag, Ge, Ga (MVT)	Spl + minor Gal disseminated in Headless LMST. Minor Smt+Cer+Hyd. Up to 1m @ 24% Zn / 2m @ 11% Zn	?

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
105H /9	AC33	Brod	061 37 128 22	Pb Zn Ag Cu (SKARN)	Banded sulphides exposed near base of steep bluff on HNFZ-MRBL contact	Craig & Milner (1975, p.119)
105H /9	AC35 CX28	Rain	061 39 128 07	Cu Ag Pb Au (SKARN)	0.3-0.5% Cu + Tr. Au+Ag in irregular lenses dissem Pyr+Pho+Cpy in Pyx SKRN	(A) Green (1966, p. 68-71)
105H /9	AC36	Road	061 42 128 19	Au	Overburden-covered area beside the CanTung Highway.	Green (1968, fig.1)
105H /10	AC42	Tanya	061 48 128 54	Cu W (Ag Pb Zn) (SKARN)	Cpy+Sch+Gal+Spl in Pho lenses & VEINs. WO_3 erratic in ARGL Camb LMST	Craig & Milner (1975, p. 117)
105H /15	AC55	Zeus	061 52 128 58	Pb Zn (Ag Cu W) (SKARN)	Gal+Spl+Sch in 6 m lenses Gar-Dio-Cpy SKRN in limy HNFS Grit unit near stock.	Morin et al. (1977, p. 211)
105H /16	AC59 CX48	Bus, Boundary	061 50 128 03	Cu (W) (SKARN)	Massive Pho with trace Cpy+Sch in Dio-SKRN near LMST-GRNT contact.	(A) Skinner (1961, p.46)
105H /16	AC58	Alm	061 50 128 06	Pb, Zn (SKARN)	Gal-Spl float around edge of glacier.	
105H /16	AC60 CX47	Baker	061 55 128 11	W Cu Zn Fl (SKARN)	3 m-thick tabular Sch+Spl+Pho+Cpy in Pyx-Gar-Flo-Spl-Qtz-Cal-Ido SKRN.	Blusson (1968, p. p.34, 69); Crawford, (1963); Dick (1980) White (1963, p.390); Brown (1961, p.311); Cathro (1969)
105H /16	AC61 no CX	Flat, Ced, Ellen, Wendy	061 56 128 13	W, Cu (SKARN)	Minor showings like main zone of CanTung Deposit.	Blusson (1968)
105H /16	AC62 CX49	CanTung Mine, Canada Tungsten Mine	061 57 128 16	W, Cu, Bi, Zn, Mo (SKARN)	3 SKRN zones in LMST & Sch-bearing "chert" zone: Main, East & Chert. Production Main+E to end 1981: 61.7×10^6 lbs W metal ** get most recent grades and tonnages **	Blusson (1968, p.28-34); Brown (1961 p.311-314); Crawford (1963); Dawson (1978, p.287-9); Dick (1980); Dick and Hodgson (1982); Findlay (1969, p.53-54); Padgham et al.
(1975,						
105H /16	AC62 CX51	CanTung Chert zone	061 57 128 16	W, Cu (SKARN)	Lenses & pods of SKRN within siliceous HNFS. 3.5×10^6 T @ 0.65 % WO_3 (1981)	p.178); The Northern Miner, May 3/73, p.1; Aug 16/73, p.1 & 5; April 4/74, p.16; April 25/74,
105H	AC62 CX52	CanTung E-Zone	061 58 128 16	W, Cu, Zn (SKARN)	Same LMST + SKRN as Main, ~600 m N & ~300 m lower. 3.6×10^6 T @ 1.5 % WO_3 (1981)	p.23; Aug 15/74, p.12; April 10/75, p .1-2; Sinclair (1986); Skinner (1961, p.43-46); Zaw (1976)
105H 105H	AC62 CX53	CanTung Main Zone	061 57 128 16	W, Cu, Bi, Zn, Mo (SKARN)	Pho-Sch-Cpy dissem + massive VEINs in Dio SKRN lens in lower Camb. LMST. ~300 m above intrusion. Original 1.18×10^6 T @ 2.47% WO_3.	
105H 105H	AC63 CX50	Flatter (1.6 km NW AC62)	061 58 128 16	W, Cu (SKARN)	Chl-Cpy-Sch SKRN in MRBL at GRNT contact (>3 minor zones like AC62)	Blusson (1968, p.35).
105H /16	AC82	Tuna	061 50 128 14	W, Mo, Cu (PORPH)	Sch & Mol in Qtz stockwork & Tou BREX.	
105H /16	AC83	Air	061 54 128 06	N/A	3 DDH tested EM conductors in valley floor Ord-Dev Road River Group.	(A)
105I /6	AC17 CX17	Golden Ram, Fern	062 21 129 01	Zn, Pb, Ag (SKARN)	in SKRN-hornfels zones but most of the showings are in float; drilling produced poor results.	(A) Gutrath (1974)
105I /15	AC15 CX5	Rotherham, Cali	062 11 128 52	Li, Cs, Be (PEGM)	in PEGM dykes 6-61 m wide in a zone 4-6 km long. No intrusions have been mapped nearby.	(A)

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
105I /6	AC12 CX12	Howards Pass, XY, Summit Lake	062 28 129 11	Zn, Pb, Ag (SEDEX)	Very large, moderate - to high grade deposit. Reserves have been proven but it is currently not in production.	Morganti (1979); Padgham et al. (1975, p.180-182; 1976, p.141); Gibbins (1977, p.97); Lord (1978, p.109-111); Sinclair et al (1975A, p.89-90; 1975B, p.159-160; 1976, p.211-212); Morin et al (1977,1980)
105I /1	AC60	Appler	062 14 128 09	W, Cu (SKARN)	Sch in SKRN at contact between LMSTs of Rabbitkettle Fm. & granite stock.	
105I /7	AC56	Borovic	062 24 128 30	Ba (SEDEX)	Pods of relatively pure Bar in zone 100 m wide & 4000 m long.	(A)
105I /8	AC54	Rudi	062 21 128 30	W, Cu (SKARN)	Two Sch showings in SKRN within Rabbitkettle Formation near contact of small Qz-monzonite stock.	(A)
105I /15	AC47 CX29	Hillman	062 52 128 43	Zn, Pb, Cu (SKARN)	two small SKRN zones 600 ft apart near the Cretaceous O'Grady stock.	Padgham et al. (1976, p.156-157)
105I /9	AC21	Dircks	062 45 128 28	Zn, Cu (MVT)	Spl & Cpy in Devonian Headless Fm. (Han group).	
105I	CX15	Shield, Pas	062 29 129 13	Pb, Zn, Ag (SEDEX)	Concordant fine grained sulphides in black SHAL.	Slaney (1979); Sinclair (1975, p.160).
105I	CX14	MAD	063 30 129 23	Cu (VEIN)	In graphitic fault zone cutting sedimentary rocks.	Sinclair (1975, p.96-97).
105I	CX13	Howards Pass (6km east of)	062 28 129 05	Pb, Zn, Ba (SEDEX)	in SHAL-LMST-chert sequence.	Padgham et al. (1976, p.146).
105I	CX12	Howards Pass	062 28 129 11	Zn, Pb, Ag, Cu (SEDEX)	Fine-grained sulphides in black SHAL. On border of Yukon & NWT.	Morin (1980, p.69); Lord (1978, p.109-111); Morganti (1979) Gordey (1978, p.43).
105I	CX10	DI Group Show #2	062 27 129 11	Cu, Ag (SEDEX?)	Mal-Azu on SHAL cleavages; Tet in Qtz-Cal lenses in SHAL; </= 7% Zn in calc. SHAL rock samples; Zn in streams & soil	Padgham et al. (1976, p.139).
105I	CX9	Cinq Grp, Show #1	062 26 129 11	Zn, Cu (SEDEX?)	Mal-Azu on SHAL cleavages; Tet in Qtz-Cal lenses in SHAL; </= 7% Zn in calc. SHAL rock samples; Zn in streams & soil	Padgham et al. (1976, p.139).
105I	CX11	DI, Cinq, Show #3	062 26 129 14	Cu, Zn (SEDEX?)	Mal-Azu on SHAL cleavages; Tet in Qtz-Cal lenses in SHAL; </= 7% Zn in calc. SHAL rock samples; Zn in streams & soil	Padgham et al. (1976, p.139).
105I	CX8	Cinq Grp	062 25 129 13	Cu (SEDEX?)	Mal-Azu on SHAL cleavages; Tet in Qtz-Cal lenses in SHAL; </= 7% Zn in calc. SHAL rock samples; Zn in streams & soil	Padgham et al. (1976, p.139).
105I	CX6	Logan Mts., GSC sample DY883	062 17 128 09	Pb Zn (VMS) Ba P U (SEDEX)	Concordant Gal,Spl in black CHRT SHAL above Ordovician basalt; 119, 247 ppm U in SHAL 10 km NW of main sulphides.	Dawson (1979 p.375-376); Bell and Jones (1979 p.397-399).
105I	CX5	Summit L. (31 km SE)	062 11 128 52	Li (PEGM)	Qtz-K-Fsp-Mus-Spd PEGM dykes cutting calcareous Windermere metasediments.	(A)
105I	CX4	Hat-2	062 04 128 23	Cu, Ag, Pb, Zn (VEIN)	Sulphides in discontinuous qtz VEINs in LMST.	Padgham et al. (1976, p.124).

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
105I /15	AC11 CX31	Arrow	062 58 128 39	Sb, Pb, Zn, Cu, Mo, F, Sn (VEIN + SKRN)	The main showing is a 12-20 ft wide well mineralized VEIN cutting LMST. SKRNs occur near the O'Grady Stock.	(A) Padgham et al. (1975, p.184-185)
105I	CX19	Selwin Mines CAC, Rhods	062 22 128 33	W, Cu (SKARN)	Three SKRN zones: North, Central & South; at contact of stock & LMST. (42 Km E of Summit L.)	Gibbins (1977, p.192-193).
105I	CX18	M-showing - Perry R Prj. Lened	062 22 128 37	W, Cu (SKARN)	Several SKRN zones. qtz monzonite cuts slate, LMST, chert.	Padgham et al. (1976, p.128-130); Skinner (1961, p.47); Forster (1979).
105I	CX17	Summit L. (17km E) Alpha, Bravo, Char, Delta, Eho	062 22 129 02	Pb, Zn, Ag (SKARN)	Lenses or VEINlets in altered DOLO & LMST (hornfels). Location is for Fern Zone, Alpha Group.	Gibbins (1977, p.191-192).
105I	CX16	Nor, Summit L.(14 km ENE)	062 24 129 09	Pb, Zn (SEDEX)	Disseminated in grey chert unit, also in Qtz VEIN 10 km SE of Howards pass.	Padgham et al. (1976, p.132).
105I /15	AC71	Godwin	062 05 128 38	Au, Ag, Zn, Cu (SKARN)	SKRN contains lenses of pyrite-Asp- Pho & occasionally Spl & Smt. Maximum value Au = 0.2 oz/ton.	
105I /8	AC66	Red	062 27 128 28	Zn, Pb (MVT)	Spl (2-8% Zn) in 19 BREX <20 m thick in Dev. LMST. Strong Pb geochem soils.	
105I /8	AC63 CX6	Rexall	062 21 128 19	U, PO4 (?) (SEDEX)	Radioactive zones, Road River Gp SHAL. Grab samples < 15.3% P2O5 & 247 ppm U.	Dawson (1979); Bell & Jones (1979)
105I	CX33	PR, PP288	062 46 128 36	Cu (VEIN?)	Small FRAC in metaseds (aureole) near GRNT.	Padgham et al. (1975, p.184).
105I	CX31	O'Grady L. (18 km SE of),	062 58 128 40	Sb, Pb (VEIN)	Gal, Stb in FRAC zone in LMST.	Padgham et al. (1975, p.184-185; 1976, p.187).
105I	CX30	Karen	062 57 128 39	Cu, Pb, Zn, Sb (SKARN).	See INAC mineral occur. overlay 95F.	Laporte (1978, p.95); Padgham et al. (1975).
105I	CX29	Can	062 52 128 44	Cu, Pb, Zn, As (SKARN)	Two SKRN zones, 600 feet apart. Qtz- monzonite cuts carbonates.	Padgham et al. (1976, p.156).
105I	CX24	Oro,Tang, Buc, Mar, Dar.	062 37 129 49	Ba (SEDEX)	Bedded Bar near base of SHAL unit.	Morin (1979, p.92); Sinclair (1975, p.96).
105I	CX23	Anniv	062 34 129 31	Pb, Zn, Ag (SEDEX)	Concordant fine grained sulphide in black SHAL.	Slaney (1979); Morganti (1979).
105I	CX22	Trois	062 32 129 27	Ba, Zn, Cu (VEIN?)	2 sites of Mal & Bar in black SHAL in BREX zone.	Sinclair (1975, p.106).
105I	CX21	Nancy	062 31 128 38	Cu, Zn (SEDEX/MVT?)	Stratabound in DOLO.	
105I	CX20	Vulcan	062 18 128 10	Zn, Pb, F, Ba (altered SEDEX)	Stratiform SHAL-hosted laminated Gal+ Spl+Bar; + massive Bar & Flo.	Mako (1981); 88JP???.

NTS	Nos.[1]	Names	Lat. Long.	Commodities[2] (Deposit status[3])	Descriptions[4,5]	Additional References[6] + sample Nos.[7]
105I	CX2	Dal, Zin, D, Jay, Rio, Leo Moon, Flat R. (headwaters)	062 06 128 13	Pb, Zn, Ag, Au, W (VEIN+SKRN)	Qtz VEINs cross cutting slates: W in SKRN zone. SKRN zone (8 km SE) contains W & minor Pb in phyllites.	Padgham et al. (1976, p.125-126).
105I	CX1	CanTung (16 km N)	062 05 128 12	W (SKARN)	Low grade SKRN deposit. (A)	
105I	CX3	Hat-1	062 04 128 22	Cu, Pb, Au, Zn (VEIN)	Sulphides in discontinuous Qtz VEINs in LMST.	Padgham et al. (1976, p.124).

Footnotes to Table A-1.1. Explanations of abbreviations

1. Showing Identification Numbers

95L/8 etc.	NTS (National Topographic system (see Fig. 4.1)
AC17, AC33SE	Archer Cathro Mineral Inventory numbers are given precedence because the AC compilers were personally familiar with most of the localities, and their inventory is widely distributed.
CX17	Canmindex numbers (Picklyk et al., 1978) take precedence where no AC reference could be found. The AC and CX numbers are unique only within each NTS area; there are two or more of many numbers.
D1001	From Dawson et al. (1984), given for cross-reference.
B1, B9 etc.	Localities staked after 1984 or not listed in AC or CX files are referred to by the number shown on the mineral claim sheet, prefixed by the NTS letter.
6123, 7034	Station number, first digit giving the year (1986 etc) of localities investigated by only this project or communicated privately to GSC.
NMI	Minsys #; index to National Mineral Inventory card number.

2. Element abbreviations

Ag	silver	Mo	molybdenum
As	arsenic	Ni	nickel
Au	gold	Pb	lead
Ba	barium	REE	rare earth elements (e.g. Ce, Hf, Eu)
Ce	cerium	Sb	antimony
Co	cobalt	Th	thorium
Cr	chromium	V	vanadium
Cu	copper	W	tungsten
Hf	hafnium	Zn	zinc

3. Deposit Status = type (from Eckstrand, 1984) & the status of information available on the occurrence as indicated by number, explained below (see also definitions in Table 2). A showing can represent a deposit type even if it is not a deposit itself.

MVT	Mississippi Valley Type; typically Pb-Zn-Cd, stratabound in vuggy, BREX, DOLM & LMST.
PLACER	Heavy mineral (e.g. gold) concentrations in stream or beach sediments.
STRAT	Strata**bound** sediment-hosted sulphide deposit, especially AREN-hosted copper sulphides.
SEDEX	Strati**form** sediment-hosted sulphide deposit, typically Ag-Cd-Pb-Zn or Ni-PGE-Zn in SHAL.
SEDIM	Sedimentary accumulation, e.g. coal
SKARN	Coarse grained, iron-rich, mixture of Ca-Mg-Fe-Al silicates formed by metasomatism related to

Footnotes to Table A-1.1. Explanations of abbreviations (continued)

	GRNT intrusion; commodities include Ag, Au, Cu, Fe, W, Zn-Pb. Also "replacement" deposits.
VEIN	Fissure filled by minerals such as Au, Bar, Cal, Cer, Cpy, Dol, Flo, Gal, Pyr, Qtz, Tet.
VRB	Volcanic red-bed copper (Kirkham, 1984): native Cu and Cu sulphides in mafic volcanic rocks
UNKN	Unclassified, status 9

4. Status Codes (after Picklyk et al. 1978, p. 24 and INAC 1985, p. 117):

1)	Being Produced. The commodity is being extracted for sale.
2)	Reserves, never produced. Reserves or demonstrated resources (i.e. three dimensional data and grade) are reported or can be calculated but the commodity has not yet been produced.
3)	Reserves, was produced. Commodity no longer being produced but measured reserves are documented.
4)	Reserves exhausted. The commodity has been produced and no measured reserves are documented.
5)	Grade, two dimensions. Grade is documented in two dimensions (e.g. length and width) but a third dimension is needed to calculate reserves.
6)	Grade, one dimension. Grade is documented in one-dimension (e.g. a drill hole or trench).
7)	Commodity is present. e.g. geochemical anomaly or outcropping mineral, but insufficient data are available (public) to classify the status.
9)	Work target. A claim has been staked but no public information indicate the presence of a commodity.

4. Mineral abbreviations

ABB	Common name	Formula
Act	actinolite	$Ca_2(Mg,Fe)_5Si_8O22(OH)_2$ amphibole
Alb	albite	$NaAlSi_3O_8$ feldspar
Asp	arsenopyrite	FeAsS sulphide
Azu	azurite	$Cu_3(CO3)_2(OH)_2$
Bar	barite	$BaSO_4$ sulphate
Bou	boulangerite	$Pb_5Sb_4S_{11}$
Bor	bornite	Cu_5FeS_4
Cal	calcite	$CaCO_3$
Cas	cassiterite	SnO_2
Cer	cerussite	$PbCO_3$
Chl	chlorite	$(Mg,Fe+2,Fe+3)_6AlSi_3O_{10}(OH)_8$
Cpy	chalcopyrite	$CuFeS_2$
Dol	dolomite	$CaMg(CO_3)_2$
Dio	diopside	$CaMg(SiO_3)_2$
Epi	epidote	$Ca_2(Al,Fe)_3SiO_{12}(OH)$
Eud	eudialyte	$Na_4(Ca,Fe+2)_2ZrSi_6O_{17}(OH,Cl)_2$
Flo	fluorite	CaF_2
Frk	frankeite	$Pb_5Sn_3Sb_2S_{14}$
Fsp	feldspar	$(K,Na,Ca,Ba,Rb,Sr,Fe)Al(Al,Si)_3O_8$
Gal	galena	PbS
Gar	garnet	$(Ca,Mg,Fe+2,Mn+2)_3(Al,Fe+3,Mn+3,Cr)_2(SiO_4)_3$
Gyp	gypsum	$CaSO_4$
Hyd	hydrozincite	$Zn_5(CO3)_2(OH)_6$
Ido	idocrase/ vesuvianite	$Ca_{10}Mg_2Al_4(SiO_4)_5(SiO_7)_2(OH)_4$

Footnotes to Table A-1.1. Explanations of abbreviations (continued)

Jam	jamesonite	$Pb_4FeSb_6S_{14}$
Lim	limonite	$2Fe_2O_3.3H_2O$
Mag	magnetite	Fe_3O_4
Mal	malachite	$Cu_2CO_3(OH)_2$
Mol	molybdenite	MoS_2
Msh	molybdoscheelite	
Msc	muscovite	$KAl_2(AlSi_3)O_{10}(OH)_2$
Pho	pyrrhotite	$Fe_{1-X}S$
Pyx	pyroxene	$(Ca,Na,Mg,Fe+2)(Mg,Fe+3,Al)Si_2O_6$
Pyr	pyrite	FeS_2
Qtz	quartz	SiO_2
Sid	siderite	$FeCO_3$
Sch	scheelite	$CaWO_4$
Slt	sulphosalts	sulphide in which both a metal and a semi-metal are present e.g. enargite Cu_3AsS_4
Smt	smithsonite	$ZnCO_3$
Spd	spodumene	$LiAlSi_2O_6$
Spl	sphalerite	(Zn,Fe)S
Stb	stibnite	Sb_2S_3
Stn	stannite	Cu_2FeSnS_4
Sul	sulphide	minerals, e.g pyrite, sphalerite
Tet	tetrahedrite	$(Cu,Fe)_{12}Sb_4S_{13}$
Tou	tourmaline	$(Na,Ca)(Mg,Fe+2,Fe+3,Al,Li)_3Al_6(BO_3)_3Si_6O_{18}(OH)_4$ May be gems
Wlf	wolframite	$(Fe,Mn)WO_4$
Wol	wollastonite	$CaSiO_3$

5. Rock-Type Abbreviations

ALTN	alteration, altered
AREN	arenite, sandstone
ARGL	argillite, argillaceous
BREX	breccia, breccias, brecciation, brecciated
BSLT	basalt
CASI	calc-silicate rock
CHRT	chert,
CONG	conglomerate
DOLO	dolostone
FRAC	fractures, fractured
GBRO	gabbro
GNOD	granodiorite
GOID	granitoid, granitic
GRNT	granite
GRPH	graphite, graphitic, carbonaceous
HNFS	hornfels
HMCS	heavy mineral concentrates from stream sediments

Footnotes to Table A-1.1. Explanations of abbreviations (continued)

LMST	limestone
PLAC	placer
PHYL	phyllite
PORP	porphyry
QZMZ	quartz monzonite / monzogranite
QZTE	quartz
SILT	siltstone
SKRN	skarn, replacement
SYEN	syenite
TUFF	tuff, fragmental volcanic rock
VEIN	vein

6. If no other references are provided:
(A) = Archer Cathro or Canmindex inventory refers to assessment file or old mineral claim sheet.
(C) = Taken from mineral claim sheets as of August, 1990.
If no reference at all is cited, the sole source of data is the Archer Cathro or Canmindex file # on left.
Individual assessment files are generally not cited in this table.

7. Abbreviated sample numbers (5020, 6007, 7014 etc.) with analytical data are listed in Appendix 1. First digit indicates year (5=1985, 6=1986, 7=1987); subsequent digits indicate order taken. All samples are archived at GSC under the unique prefixes 85JP, 86JP and 87JP.

A-1.2. CanTung Tungsten Deposit Synopsis

Names: CanTung (CanTung, Canada Tungsten Mine) *Location:* 61º 57'N 128º 15'W; Tungsten, NWT; *NTS:* 105H/16 (CMX No: 00539699); See Appendix A-1.1; 105H/16 and 105H, #AC62, CX49 to CX53 for individual components.

Commodities / Ore Minerals: tungsten, copper and minor zinc / scheelite, chalcopyrite and minor sphalerite; wolframite has not been reported; copper averages about 0.5%; molybdenum is in trace amounts; gold runs 3 g/t and the chalcopyrite concentrate contains at 0.3 oz/ton gold.

Resource Components: 3 ore zones: Main, East and Chert; (i) Main (Pit or WO) Zone (CMX 00539601): 61º 57' 10"N 128º 15' 45"W; 1.18 Mt at 2.4%WO_3; (ii) East (E-) Zone (CMX 00539602): 61º 57' 30"N 128º 15' 45"W; same "zone" as Main Zone, though 600 m N and 300 m lower; original reserves 4 Mt at 1.6% WO_3 and 0.22% Cu, 2001 reserves 0.7 Mt at 1.83 WO_3; (iii) Chert Zone (CMX 00539603): 61º 57' 15"N 128º 15' 40"W; 3.5 Mt at 1.5% WO_3; production plus reserves about 9 Mt at 1.42% WO_3; by 1986 (shutdown) mine produced 31,683 tonnes of tungsten metal.

Geological Setting: *Regional*: scheelite-rich skarns developed within metamorphic aureoles adjacent to two-mica granitic plutons (mid-Cretaceous Selwyn Plutonic Suite) within limestones of Proterozoic and Paleozoic platformal to basinal marine strata that were deposited across the northwesterly trending transition between the Mackenzie Platform (Redstone Arch) and Selwyn Basin. Miogeoclinal sedimentation was halted in the mid-Jurassic with the collision of an island arc terrane and the continental margin, leading to intense folding and faulting during the Columbian Orogeny (Mesozoic) and emplacement of late stage orogenic granitoid plutons/batholiths during the late Cretaceous. *Local:* CanTung ore is in skarn zones within the Cambrian Sekwi Formation carbonates, map units 2 ("Swiss-cheese limestone") and 3 ("Ore-limestone") of Blusson (1968), on the west flank of the Flat Lakes Syncline, and spatially related to the Mine Stock two-mica monzo-granite plutons.

Deposit Geology: Exo-skarn scheelite orebodies are localized in a dolomite-poor marble horizon (Lower Cambrian) adjacent to a peraluminous, biotite-muscovite, monzo-granite pluton (Upper Cretaceous). Pyrrhotite-scheelite-chalcopyrite disseminations and massive veins are in a diopside skarn lens. Skarn development ranges from total replacement to patchy replacement to veins to dissemination; endo-skarn development has not been observed in the Mine Stock, however several small high-grade endo-skarn bodies were noted in granitic and aplitic dykes cutting the Ore Limestone. The skarn is cross-cut by a late lamprophyre dyke exposed in the open pit.

Definitive Characteristics: General: stratiform skarn morphology dominates; thermal aureoles extensive and common; associated intrusions usually granitoid stocks, pegmatite and aplite dykes;
Specific: scheelite is abundant in all skarn facies, except the garnet-pyroxene; strongly correlated with pyrrhorite; shows little textural evidence of dissolution in the course of skarn development.

Genetic Model: Tungsten and associated metals were derived mainly from fluid-rich late phases of the monzo-granite; hydrothermal fluids were released by crystallisation and hydrofracturing following its epizonal intrusion. Skarn formed as a result of infiltration metasomatism during thermal metamorphism that produced pyroxene-hornfels facies. Initial hydrothermal activity at 450 – 500ºC generated simultaneously a zoned array of anhydrous and hydrous reduced skarn facies: garnet-pyroxene, pyroxene ± pyrrhotite, amphibole ± pyrrhotite, and biobite ± pyrrhotite; skarn development persisted during cooling to temperatures as low as 270ºC; skarn formed under confining pressure of ca. 1 ± 0.3 kb (scheelite geobarometry).

Age: Intrusion and subsequent skarn formed at ca. 91 Ma, within a relatively brief interval during the Upper Cretaceous.

Related Deposit Types: quartz-molybdenite-scheelite stockworks.

Exploration Guides: Extensive carbonate units; two-mica pluton - limestone contacts (shallow-dipping) with much of pluton underlying the limestone; roof pendants; structural and stratigraphic traps in carbonate beds (Sekwi units may be a uniquely favourable lithologic combination); extensive hornsfels zone adjacent to plutons; stockwork fracturing along pluton-carbonate contact; alluviual heavy mineral concentrates from major drainages contain abundant scheelite, with accessory minerals garnet, epidote and actinolite; the elements Cu, Mo and Zn generally are associated with tungsten skarns; *Associated Skarn Elements:* Mo-Ni-Pb-Sb-Th-W-Zn; also with As-Au-Ce-Co-Cr-Cu-Hf. airborne magnetic surveys have been used to detect shallow plutons.

References: Archibald et al., 1978; Blusson, 1968; Bowman et al., 1985; Dawson, 1995; Mathieson and

Clark, 1984; Ray, 1998

A-1.3. Howards Pass Lead-Zinc Deposit Synopsis

Names: Howards Pass (XY, Summit Lake)
Location: 62º 28'N 129º 11'W; straddles the Northwest Territories-Yukon border; NTS: 105I/06 (CMX No: 00156100).

Commodities / Ore Minerals: zinc and lead / sphalerite, galena, silver and pyrite, minor chalcopyrite and molybdenite.

Resource Components: Howards Pass deposit contains 473 Mt (113 Mt proven and 360 Mt inferred) grading 5% Zn, 2% Pb and 9 g/t Ag.

Geological Setting: *Regional*: Lead-zinc-silver sulphide minerals are densely disseminated at several horizons within fine clastic Paleozoic rocks; miogeoclinal sedimentation was halted in the mid-Jurassic with the collision of an island arc terrane and the continental margin, leading to intense folding and faulting during the Columbian Orogeny (Mesozoic) and emplacement of late stage orogenic granitoid plutons/batholiths during the late Cretaceous. *Local*: XY sub-basin of the Selwyn Basin; basinal Ordovician carbonate of the Rabbitkettle Formation is conformably overlain by an interbedded Road River Group sequence of pyritic, calcareous, siliceous and carbonaceous Ordovician-Silurian graptolitic mudstones (Duo Lake Formation) and Mid-Late Silurian orange siltstone (Steel Formation).

Deposit Geology: The disc-shaped stratiform sulphide zone is entirely hosted by the Duo Lake Formation; the zone is up to 50 metres thick near the centre of the sub-basin; thickness and grade decrease toward its margins; the lower sulphide sub-unit is primarily hosted in limestone, the upper sub-unit primarily in carbonaceous chert; sulphides are typically fine grained; the deposit is underlain by black carbonaceous cherty mudstone and overlain by black phosphatic carbonaceous chert and cherty mudstone; . mineralization at Anniv, XY and OP ore bodies (strike length of 28 km.) appears to be similar age and identical mineralogy.

Definitive Characteristics: General: sedimentary exhalative sulphides (Sedex) generally conformable to semi-conformable stratiform lens; tabular to lensoidal in shape ranging from a few centimetres to tens of metres in thickness; 3 distinct facies: vent complex, bedded ores and distal hydrothermal; Specific: sphalerite and galena are extremely fine grained and concentrated in fine laminae or recrystallized striped cleavages; calcite and quartz are the dominant minerals hosting the laminated sulphides; no apparent lateral or vertical zonation of Cd/Zn ratios in sphalerite; vertical and lateral Pb-Zn zonation from Pb-rich at the centre grading upward and outward into Zn-rich zones; relatively low Cu and Ag, lack of associated bedded barite, lack of volcanic rocks and a lack of massive pyrite.

Genetic Model: within structurally controlled sedimentary sub-basins related to rift systems; syn-sedimentary deposition of zinc and lead sulphides is considered to be exhalative. formed at relatively low temperatures (less than 220ºC) from metalliferous chloride-bicarbonate brines discharged at the seafloor

Age: Early Silurian; approximately 435 Ma (mid-Llandovery).

Related Deposit Types: stratiform barite; carbonate-hosted sedimentary exhalatives.

Exploration Guides: in sub-basins within rift-cover rather than rift-fill sequences; vertical and lateral Pb-Zn mineral zonation (from Pb-rich at the vent grading upward and outward to Zn-rich zones); hydrothermal evidence such as chert, barite; restricted (carbonaceous) marine sedimentary sequences deposited in epicratonic extensional tectonic setting; associated elements in rocks and stream sediments: Ba-Cd-Cr-Cu-Mo-Ni-Pb-Sb-Zn.

*References***:** Goodfellow and Jonasson, 1986; Gordey and Anderson, 1993; Jonasson, Goodfellow and Lydon, 1995; Morganti, 1979.

A-1.4. Lened Tungsten and Emeralds Deposit Synopsis

Names: Lened (Nip, Toy, Lou, CAC & RUDI plutons)
Location: 62º 22 15"N 128º 37'W; NTS: 105I/07 (CMX 00441000); Plutons at 62º20-25'N, 128º30-40'W (Groat et al. 1995)

Commodities / Ore Minerals: tungsten / scheelite; emerald / beryl.

Resource Components: two tungsten zones have been delineated with grades ranging from <0.4 to 10% WO_3. Werner et al.(1998) report 0.76 Mt @ 1.17% WO_3 and 0.15% Cu. Pegmatites which contain emerald also host scheelite, apatite, stibite, molybdenite, pyrite, fluorite and calcite; about one kilogram of emeralds were collected from float and outcrop in an area of 30 m x 100 m.

Geological Setting: *Regional*: see A-1.3. CanTung Synopsis. *Local*: The Lened tungsten skarns are located within the Cambro-Ordovician Rabbitkettle limestone, structurally overlain by the Neproterozoic Vampire Formation in the hangingwall of the Appler Fault to the south, and in normal fault contact with Devono-Mississippian Earn Group shales to the north. The Lened Pluton and its contact metamorphism transect these structures north of the showing, as do the Cac and Rudi plutons located nearby to the southeast.

Deposit Geology - Tungsten: Lened, CAC and RUDI plutons are small, massive, composite stocks (Dick 1980). Leucocratic granitic aplite and tourmaline-bearing dykes are associated with the pluton. Biotite granite intrusions invade pelitic and calc-silicate hornfels near the CAC and RUDI plutons. They contain muscovite, garnet, andalusite and tourmaline, and some are miarolitic. These peraluminous dikes seem to be characteristic of plutons with extensive tungsten skarns (Anderson, 1982). Tungsten is associated with scheelite-bearing skarn within contact metamorphosed and metasomatised limestone of the Cambro-Ordovician Rabbitkettle Formation; skarn zones dip from 60º – 70º SW, localised within an imbricate fault zone from 2 to 14.5 metres wide.

Deposit Geology – Emeralds: "Emeralds are hosted in a small, skarn-altered limestone lens west of the main Lened tungsten showing. The 40x 15 metre skarn lens is cut by at least 35 significant quartz veins many of which contain green beryl. The location of the skarn appears to have been controlled by a fault that forms the contact between pyritic black shales and rhythmically-bedded limestone, the skarn host. The quartz veins are 2-30 cm wide and extend perpendicularly from the fault zone across the skarn and pinch out in the limestone. The green beryl is concentrated in the quartz-calcite immediately adjacent to the wallrock. The veins are surrounded by a 5-10 cm alteration zone defined by a destruction of the skarn minerals and a halo of pale mica." (Falck et al., 2003); "emerald" veins are associated with phlogopite schist developed at the contact zone between the rare-element pegmatite and black shales of the Earn Group; emeralds are vanadium –rich (Groat and Ercit, 1996).

Definitive Characteristics: General: stratiform skarn dominates over discordant and vein-like skarn; an extensive thermal aureoles are best developed in shelf carbonate-pelite strata around coarse grained, unaltered, porphyritic, felsic, calc-alkaline, grantoid stocks; Specific: pyroxene-garnet-vesuviante-pyrrhotite assemblage most pervasive and carries 0.4 to 1.0% $W0_3$; amphibolite-pyrrhotite and biotite-pyrrhotite-chalcopyrite assemblages locally overprint pyroxene-rich skarns and contain erratic but generally higher grades in excess of 10% WO_3 ; "emerald" veins are vanadium rich and are associated with "contact zone" phlogopite schist.

Genetic Model: Tungsten and associated metals were derived mainly from fluid-rich late phases of the pluton; hydrothermal fluids were released by crystallisation and hydrofracturing of the pluton, then infiltrated calcareous host rock to form prograde skarn deposits; the main period of tungsten mineralization post-dated development of the prograde skarn; subsequent cooling and influx of meteoritic water initiated hydrous retrograde alteration, including pyrrhotite and chalcopyrite.

Age: [see CanTung]

Related Deposit Types: Tin-tungsten and zinc skarn deposits; "emerald" veins are locally associated with tungsten-zinc deposits on a regional scale.

Exploration Guides: skarns enriched in W, Mo, Zn, Cu, Sn, Bi, Be, As; "emerald" veins enriched in Be, Na, Mg, and depleted in Li, Ba, K, Mo and Pb relative to shale outside of mineralized area; carbonate units in shaley strata within thermal aureoles of post-tectonic granitoid intrusions; "emerald" veins locally confined to sedimentary strata;

References: Dawson, 1995; Dick, 1980; Glover and Burson (1986), Gordey and Anderson 1993; Groat and Ercit, 1996; Falck et al., 2003; Marshall et al., 2003, Table 10; Werner et al. (1998).

A-1.5. Little Nahanni Pegmatite Group Lithium Synopsis

Names: Little Nahanni Pegmatite Group (LNPG, Cali, Lica, Rotherham)
Location: 62º 12'N 128º 50'W; 47 kilometres northwest of Tungsten, Northwest Territories; NTS: 105I/02 & 07.

Commodities / Ore Minerals: tantalum, columbium, tin and lithium; traces of beryllium and cesium / spodumene, lepidolite, tantalian rutile, cassiterite, columbite-group minerals.

Resource Components: The pegmatites are divided into "spodumene-bearing" and "spodumene-free";

both types consist of K-feldspar, plagioclase, and quartz, with subordinate muscovite, columbite-tantalite, cassiterite, tourmaline, beryl, lepidolite, and lithiophyllite; accessory minerals are garnet tantalian rutile, cassiterite, columbite-group minerals and apatite; traces of galena, montrebasite, fluorite and helvite also are found; dyke exposure is 500 metres length by 300 metres high by 100 metres wide; estimated 50 million tonnes at 1.2% Li_2O.

Geological Setting: Pegmatites are hosted by the Neoproterozoic Hyland Group on the crest and northeast flank of the Fork Anticline, bounded on the northeast by the March Fault, west of Moose Lake. On the southwest are the Summit Syncline,Steel Creek and Steel Syncline; fold axes trend northwest-southeast, and are doubly plunging, with pegmatites localized at the neutral zone.

Deposit Geology: General: Pegmatites strike northwesterly; dominantly hosted by steeply northeast dipping to vertical and overturned metamorphosed limestone, calcareous sandstone and shale near the top of the Ysezyu Formation but stratigraphically below non-calcareous shales and sandstones of the Narchilla Formation; Specific: The Little Nahanni Pegmatite Group (LNPG) is made up of more than 100 well exposed dykes in an area of 11 x 5 km; the dykes are relatively narrow (<1 to 5 m), but many extend for several kilometres along strike; host strata include slaty, limy, and micaceous argillites, with transitions into cherty argillites, dark grey limestones, and well banded limestones and limy slates

Definitive Characteristics: General: pegmatites are generally granitic in composition; rare-element pegmatites such as these are found in medium grade metamorphic terranes and contain dispersed rare metal-bearing minerals; Specific: The LNPG are peraluminous and belong to the albite-spodumene type of the rare-element class of granitic pegmatites, similar to pegmatites found at Preissac-Lacorne, Québec. All pegmatites contain K-feldspar, plagioclase, quartz, muscovite-to-lepidolite, conlumbite-group minerals, cassiterite, tourmaline, beryl, lithiophilite and garnet. Some dykes bear spodumene, those without contain more lepidolite. Trace minerals include galena, titanium rutile, fluorite, helvite, zeolite-group minerals, microlite, and secondary phospates such as tripoidite. Zoning is complex.

Genetic Model: pegmatites form by primary crystallization from a volatile-rich, siliceous melt; rare-element pegmatites are related to highly differentiated granitic magmas; represent fractionated melts; the lithology of the source rock is a major control of the composition of the pegmatites; undepleted upper crustal host rocks result in the formation of peraluminous granites; crystallization of these melts is under closed-system conditions; phase relations of the lithium aluminosilicates imply relatively low T / moderate P emplacement conditions for the pegmatitic melts (circa 3 to 3.5 kb, 550-650ºC). The spodumene-bearing and spodumene-free pegamatites represent two distinct melts of uncertain origin, possibly from the same magma chamber.

Age: 81 Ma (on columbite;Mauthner et al. 1995)

Related Deposit Types: pegmatites are a transitional phase between granitic intrusions and quartz veins; tin- and tungsten-bearing stockworks and greisens, rare-metal granites.

Exploration Guides: General: rare-element pegmatites typically occur in rocks of medium metamorphic grade, along fault systems and lithological boundaries, or associated with granitoid plutons; primary dispersion aureoles in host rocks include: Li, Rb, Cs, Be, B, etc.; secondary dispersion haloes in overburden and light plus heavy minerals in stream sediments: beryl, spodumene, tourmaline, columbite-tantalite, etc; Specific: the “LNPG” pegmatite dykes are strongly enriched in Li and F, moderately enriched in P, and weakly enriched in B, Mn, Be, Nb and Ta.

References:
Gordey and Anderson, 1993 (showing “F” on geological map); Groat and Ercit, 1996; Groat et al. 1994; Mauthner et al., 1994; Sinclair, 1995; Groat et al., 2003.

A-1.6. Mawer Carbonate-Hosted Lead Zinc

Names: Mawer (Ma)

Location: 62º06’N 127º11’W, NWT; NTS: 095L/03

Commodities / Ore Minerals: zinc / sphalerite.

Resource Components: grade is estimated at 3% zinc over a 43 metre stratigraphic thickness in the area of the main showing.

Geological Setting: shallow-water shelf carbonate platform.

Deposit Geology: Carrière and Sangster (1999) noted that sphalerite appears to replace the host dolomite fragments in dolomite breccia, along a 13 kilometre belt of mid-Ordovician Sunblood Formation dolomite; another typical host rock is zebra dolostone in the same formation. A number of other similar occurrences have been noted within same formation (Fig. A-1.1(i)).

Definitive Characteristics: General: Mississippi Valley-type (MVT) lead-zinc deposits typically consist of galena and sphalerlite as open-space fillings in carbonate breccias; replacement of host rocks is relatively minor, except in high grade zones; Specific: sphalerite concentrations are located just below an orange marker bed, which marks the contact with the overlying Esbataottine Formation; The Esbataottine Formation is overlain by the Whittaker Formation (Ordovician to Silurian, which hosts Prairie Creek vein) which in turn is overlain by the Road River Formation.

Genetic Model: Mississippi Valley-type (MVT)

Related Deposit Types: sedimentary exhalative deposits (Sedex)

Age: Ordovician or later.

Exploration Guides: platformal carbonates adjacent to large sedimentary basins; the presence of unconformities in the carbonate platform; brecciated dolomite with vuggy porosity; usually occur in interconnected clusters;

References: Archer, Cathro and Associates, 1972; Carrière and Sangster, 1999; Dawson, 1984.

A-1.7. O'Grady Aplite-Pegmatite Gemstones

Names: O'Grady Aplite-Pegmatite Complex.
Location: Approximately 62º 53'N 128º 59'W; approximately 100 km NNW of Tungsten, Northwest Territories.
NTS: 105I/15.

Commodities / Ore Minerals: gem tourmaline (elbaite, varieties: rubellite, verdellite and indicolite).

Resource Components: Mineralogy: microcline (locally var. amazonite), quartz and plagioclase (var. cleavelandite), abundant gem tourmaline (elbaite, vars. rubellite, verdellite and indicolite) and less-common danburite, polylithionite-lepidolite, hambergite, titanite, ilmenite and boromuscovite, and rare scheelite, nanpingite and pollucite; the O'Grady pegmatites are thought to be transitional between Li-poor and Li-rich pegmatites.

Associated Mineral Occurrences (spatially but not necessarily genetically associated):
O'Grady Lake /Ra, Stib (18 km E-SE of): antimony, lead anomaly; 62º 52'N 128º 30'W (CMX 01148800); stibnite showing occupies steeply dipping fracture zone within limestone (Sapper Formation); up to 6 m in width and vertical extension up to 21 m; other minerals include boulangerite, jamesonite, galena and arsenopyrite.

O'Grady Lake / Gun, Sand (30 km E-SE of): zinc, lead, copper anomaly; 62º 53'N 128º 31'W (CMX 01148600); mineralization consists of sphalerite and smithsonite in banded limestone; massive sphalerite occurs in nose of small folds adjacent to quartz monzonite (O'Grady Batholith).

Geological Setting: Most pegmatites occur in orogenic belts; type of pegmatite differs with the geological setting; the O'Grady Batholith intrudes folded Cambrian to Triassic strata on the southwestern margin of the Mackenzie Platform carbonate and clastic rocks, near the transition to shales of the Selwyn Basin. Projected underlying strata include intercalated shales, sandstones and carbonates of the Neoproterozoic Vampire Formation and Cambrian Sekwi Formation. .

Deposit Geology: The O'Grady Batholith is a 270 square kilometre alkali-feldspar-rich composite intrusion with mixed S- and I-type granitoid characteristics. It consists of a megacrystic hornblende-quartz-syenite core, a marginal massive equigranular hornblende-biotite granodiorite, and a foliated transitional phase between the core and margin. At about 62º53'N, 128º59'W on the western margin of the batholith is a 5 square kilometre aplite-pegmatite belt of mixed NYF (Nb, Y, F) - LCT (Li, Cs, Ta) geochemical character. This zone comprises common leucocratic 1-3m en-echelon aplite dykelets, and somewhat larger zoned pegmatite and alaskite intrusions, all with abundant tourmaline. The sub-horizontal dykelets are up to 50 m in thickness. "Crystals of coloured tourmaline occur in open pockets called "miarolitic cavities" that are hosted within a large dyke of granite pegmatite/aplite which intrudes a megacrystic syenite. The coloured tourmaline is the Li-bearing mineral species elbaite, whereas black tourmaline, which is abundant only in the main body of the pegmatite/aplite, is the iron-bearing mineral species schorl (Groat et. al., 1995). Other minerals identified from the pockets include smoky quartz, microcline (white and green amazonite), albite (cleavelandite variety), lepidolite, danburite, hambergite, pollucite, ferroaxinite, and stilbite." (Wilson, 1997).

Definitive Characteristics: General: pegmatites are recognized by their granitic composition; rare-element pegmatites, found in medium grade metamorphic terranes, contain dispersed rare metal-bearing minerals. Specific: the aplite-pegmatite complex is of the elbaite subtype of the rare-element class of granitic pegmatite; individual pegmatites show high levels of alkali fractionation: K-feldspars and micas are enriched in Li, Rb and Cs relative to K, and Li and Cs are present (Li- and Cs-micas and pollucite).

Genetic Model: pegmatites form by primary crystallization from a volatile-rich, siliceous melt; rare-element pegmatites are related to highly differentiated granitic magmas; represent fractionated melts; the lithology of the source rock is a major control of the composition of the pegmatites; undepleted upper crustal rock types produce peraluminous granites; crystallization of these melts is under closed-system conditions; preliminary geochemical modelling indicates that the aplite-pegmatite complex is derived directly from the host syenite; the pegmatites are commonly miarolitic, indicative of melt saturation in water. Assimilation by the pegmatites of mafic elements such as nickel and vanadium is useful for gemstone formation.Selwyn Basin shales are locally rich in such elements, especially in and around Nick type deposits, thus providing an alternative to mafic rocks as a source for these prospective elements.

Related Deposit Types: pegmatites are a transitional phase between granitic intrusions and quartz veins; tin- and tungsten-bearing stockworks and greisens (granitic rock altered by late-stage gases) associated with rare-metal-enriched granites. Other associations include skarns and antimony-base-metal bearing veins such as those surrounding O'Grady Batholith.

Age: At the younger end of Early to Mid-Cretaceous (78-101 Ma)

Exploration Guides: General: pegmatite fields including large pegmatite bodies associated with high-level granitoid intrusions; rare-element indicators include columbite, beryl, spodumene, lepidolite, coloured tourmaline, nanpingite, etc; geochemical enrichment in: Li, Rb, Cs, Be, B, V.

*References**:*** Gordy and Anderson, 1993; Groat Groat and Ercit, 1996; Sinclair, 1995; Wilson, 1997; Wilson, 1999; Ercit et al., 2003.

A-1.8. Prairie Creek Vein- Carbonate- Shale-Hosted Silver-Lead-Zinc

Names: Prairie Creek Lead-Zinc-Silver (Cadillac Mine, Cadillac Exploration)
Location: 61º 33' 35"N 124º 47' 30"W; 500 kilometres west of Yellowknife, Northwest Territories and 338 kilometres north of Fort Nelson, British Columbia; NTS: 095F/10; CMX 00534999; see Appendix 1.1; 95F/10, #ACSE7, ACSE28 and ACSE29, CX3 to CX9 and CX26 to CX35 for individual components.

Commodities / Ore Minerals: lead, zinc, silver and copper / galena, sphalerite, lesser pyrite and tennanitite-tetrahedrite.

Resource Components: a total of 19 zones over a 32 kilometre strike length; geological resource of Zone 3 estimated (1998) at 11.8 Mt grading 12.5% zinc, 10.1% lead, 161 g/t silver and 0.4% copper over strike length of 2.1 kilometres; Zones 7 and 8 also contain reserves.

Geological Setting: Dolomitized and karsted Lower Paleozoic carbonates of the Sunblood, Whittaker and Delorme formations, and basinal limestones, dolostones and shales of the Road River Group, associated with northerly trending faults at the transition between the Mackenzie Platform and the Prairie Creek Embayment of Selwyn Basin; The Nahanni Karst Terrane lies to the east of the mine site on Prairie Creek, which flows into Nahanni River.

Deposit Geology: An extensive system of near-vertical, sulphide-bearing quartz-carbonate veins associated with a north-south trending fault structure in carbonate rocks of the Whittaker Formation. Main ore targets are quartz vein massive sulphide ("QVS") and stratiform massive sulphide ("SMS")."QVS" consists of lead-zinc-copper sulphides with very significant silver grades; "SMS" mineralization consists of zinc-lead-iron sulphides with moderate silver and minor amounts of copper; also lower grade sulphides are concentrated in Mississippi Valley Type ("MVT") colloform sulphides in vuggy dolostones.

Definitive Characteristics: General: sulphide-rich veins form massive lenticular bodies in fractures or fault zones, or stockworks in clastic metasedimentary terranes; characterized by mineralogy; *Specific*: veins are best developed in the Whittaker Formation and Road River Formation, and least developed in the

Cadillac Formation; 1994-1995 drilling results include 30% of resources in stratiform shale-hosed base metal sulphides (Jones, 1997, p. 96).

Genetic Model: clastic metasediment-hosted vein and associated stratiform Sedex deposit; deep-seated hydrothermal fluids channelled along deep crustal faults. Northerly trending faults at the platform-basinal facies transition may be re-activated growth faults.

Related Deposit Types: silver-lead-zinc carbonate replacement, manto deposits and carbonate-hosed lead-zinc.

Exploration Guides: late major crustal faults cutting clastic metasedimentary terranes; favourable terranes are part of lead-zinc metallogenic province containing sedimentary-exhalative lead-zinc deposits.

*References***:** Beaudoin and Sangster 1996; Canadian Zinc Corporation, 1999; Jones, 1997, p. 95-97; Morrow and Cook, 1987.

A-1.9. Selena Creek Placer Gold Synopsis

Names: Selena Creek Placer Gold Deposit

Location: 60º55'N 126º40'W, Northwest Territories; 160 kilometres northeast of Watson Lake British Columbia; NTS: 095D/15; see Appendix 1.1; 95F/10, #D1

Commodities / Ore Minerals: gold (placer)

Resource Components: 0.16 troy ounces per cubic yard (values range from 0.023 to 0.627 troy ounces per cubic yard); eleven test pits returned values ranging from 0.119 to 0.508 troy ounces per cubic metre of free metallic gold.

Geological Setting: *Regional*: the area lies within the Hyland Plateau; main rock types are miogeoclinal strata, ranging in age from mid-Lower Cambrian to Middle Ordovician; youngest rocks are Cretaceous intrusions. Paleogeographically, the region is interpreted as the Meilleur River Embayment of the Selwyn "shale" basin, but the shaley rocks are mainly Neoproterozoic and are overlain by Cambrian-Ordovician dolomites and limestones; *Local*: the moderately to steeply dipping west limb of the NS-trending Caribou Anticline exposes a homoclinal sequence of shallow water calcareous strata ranging from mid-Lower Cambrian Sekwi Formation to Middle Ordovician Sunblood Formation. Cretaceous granodiorite at the headwaters of Selena Creek, on about the axis of the Caribou Anticline, has a contact-metamorphic aureole.

Exploration History: other than regional mapping (Gabrielse and Blusson, 1969), there is no recorded exploration activity until the discovery of placer gold by Eric Scholtes in 1984. His claims were optioned by a Sirius Resource Corp. - Verdstone Gold corp joint venture, sampled by Dynamin Engineering Ltd. (Richards, 1989), and a series of press releases issued in 1989. No further reports are available and the occurrences have not been sampled by this study.

Deposit Geology: placer native gold in sandy horizons through to coarser gravels with small boulders; the depth limit of the pay streak was not reached in the reported test pits.

Definitive Characteristics: placer gold is quite coarse and jagged,; there was an abundance of scheelite and minor amounts of iron nodules and pyrite crystals in the sluice concentrates; cassiterite has been noted in the heavy mineral concentrates; wolframite also noted in samples. Associate geochemical tracers include silver, arsenic, mercury, tin and copper.

Genetic Model: placer, with coarseness and jagged texture suggesting that gold is proximal to a potential granite-related hydrothermal source, possibly Carlin type gold or gold-rich skarn. More general lode gold deposit types applicable to this region are "Disseminated and replacement gold" of Poulsen (1995), and gold rich skarns (Dawson, 1995b).

Related Deposit Types: the contact between the granodioritic intrusion and the calcareous horizons represent a good geological environment for vein-skarn- and replacement-type precious metal deposits, as well as skarn tungsten of Cretaceous age, about 110 Ma.

Age: Recent

Exploration Guides: anomalous silver, arsenic, mercury, tin (stibnite) and copper; abundant heavy minerals magnetite, chromite, ilmenite, hematite, pyrite, zircon, garnet and rutile; gold nuggets have decreasing silver content downstream and upward suggesting source upstream and at depth; highest gold values occur at the base of gravel deposits.

*References***:** Gabrielse and Blusson, 1969; Richards, 1989; Rowan, 1989.

A-1.10. Vulcan Sedex Lead-Zinc-Barite Synopsis

Names: Vulcan Sedex Sulphide-Barite-Fluorite Deposit
Location: 62º 18'N, 128º 10'W; NTS: 105I/08; CMX 01162900; see Appendix 1.1; 105I, #CX20

Commodities / Ore Minerals: zinc and lead / sphalerite-galena-barite-fluorite.

Resource Components: more than 50 galena-pyrite-fluorite-barite showings are best exposed along 2.5 kilometre "Vulcan" trend; two main types: (i) stratiform fine grained sphalerite and pyrite lenses up to 10 m thick interbedded with chert and shale, with spatially associated massive barite-fluorite; (ii) fluorite-galena veins transecting strata.

Geological Setting: The Vulcan property is underlain by the transitional Siluro-Devonian Sapper Formation, comprising light to dark grey argillaceous lime mudstone to wackestone with common black chert nodules and crinoids (index fossil Gasterocoma) that overlie the dolomitic Cambrian-Silurian Haywire Formation. To the northeast are shallow-water Mackenzie Platform (fossiliferous grainstones and packstones with local bioherms); to the southwest are deep-water Ordovician-Lower Devonian shaley limestones, shales and siltstones of the Road River Group. The Devono-Mississippian Earn Group (gunsteel-weathering siliceous shales and siltstones) overlies all of these and all are intruded and contact metamorphosed by the nearby Appler Cretaceous quartz-monzonite pluton.

Deposit Geology: generally conformable to semi-conformable stratiform lenses are hosted in carbonaceous shales of the Sapper Formation, are tabular to lensoidal in shape, range from a few centimetres to tens of metres in thickness, and comprise: (1) sphalerite-bearing massive pyritic sulphide and (2) laminated and brecciated pyrite-sphalerite-galena. Late galena-bearing massive barite-fluorite veins transect the stratigraphy.

Definitive Characteristics: General: 3 distinct stratiform to stratabound galena-sphalerite-barite facies: vent complex, bedded ores and distal hydrothermal; Specific: three major types of sulphide facies constitute the "Vulcan" trend: massive sulphide (fine grained pyrite with varying amounts of sphalerite, galena and interstitial quartz), shale-hosted sulphide (laminated to breccia-matrix sphalerite and galena) and massive barite-fluorite assemblages (50 – 99% coarse crystalline barite with subordinate fluorite and galena);

Genetic Model: Sedex; Tectonic setting was extensional, located at a carbonate-shale facies transition, syngenetic sedimentary sulphides were deposited from heated, metal-rich basinal brines that vented along normal faults, formed massive barite in sinter mounds and flowed into paleotopographic lows (brine pools) under anoxic conditions; cooling of the brine pools caused initial precipitation of fine grained barite, continued percolation of the brines through the barite zone caused recrystallisation of barite and the deposition of interstitial fluorite and galena; also producing some "epigenetic carbonate-hosted" characteristics in footwall limestones. Late fluorite-galena veins may also have formed during folding and/or intrusion of the mid-Cretaceous Appler pluton.

Age: Late Silurian-Early Devonian (Pb-isotope data are consistent with limits determined by biostratigraphic relationships).

Related Deposit Types: stratiform barite; carbonate-hosted sedimentary exhalatives.

Exploration Guides: Look for platform-to-basin facies changes associated with restricted anoxic (graphitic) marine sedimentary sequences, deposited in epicratonic extensional tectonic setting; rift-cover or rift-fill sequences; vertical and lateral Pb-Zn mineral zonation (from Pb-rich at the vent grading upward and outward into Zn-rich zones); evidence of hydrothermal activity such as barite, disseminated sulphides, chert and barite-lead-zinc veins; Associated Sedex Elements:Ba-Cd-Cr-Cu-Mo-Ni-Pb-Sb-Zn.

References: Brophy et al., 1983 (cited by Gordey and Anderson, p. 122 and ref listed p. 110); Carne and Cathro, 1982; Gordey and Anderson, 1993; Lydon, 1995; Mako and Shanks, 1984.