

LEGEND

**LOWER JURASSIC
ROSSLAND GROUP**

- R** Undifferentiated metasedimentary and metasedimentary rocks
- Rv** Metabasic rocks - amphibole porphyry, gneiss, argillite, metabasite (ELSE COMPLEX/OLD STRUCTURE/Paradeep)

**UPPER TRASSIC (CARNIAN TO NORIAN)
SLOCAN GROUP**

- S** Metasedimentary rocks - undifferentiated (S), quartzite (Sq), argillite and gneiss (Sg), (Sg), (Sg), (Sg)
- Sl** Limestone

**PERMIAN AND/OR TRASSIC
KASLO GROUP**

- Kv** Metabasic rocks - andesite flows, tuff and breccia

**PALEOZOIC AND TRASSIC
NEW LAKES BELT**

- N** Gneiss, schist, amphibolite and ultramafic rocks

FIRE MIDDLE JURASSIC

- ms** Metasedimentary rocks intruded by orthogneiss and pegmatite sills and dykes

INTRUSIVE ROCKS

TERTIARY (?)

- Ta** Andesite and basalt dykes
- Tr** Rhyolite dykes

**TERTIARY (PALEOCENE TO EOCENE)
LADYBIRD GRANITE**

- Peg** Limestone (both quartz monzonite to granite with emery quartz - garnet) Muscovite rich in Slocan Lake fault zone

**LATE CRETACEOUS
MULVEY GNEISS**

- IKgn** Metasedimentary rocks - hornblende augen granodioritic gneiss with leucocratic veins

MIDDLE JURASSIC

ROSSLAND GROUP SUBVOLCANIC EQUIVALENTS

- N7** Felsic porphyry dykes
- N6** Laminar gneiss
- N5** Quartz monzonite
- N4** Biotite granite to granodiorite
- N3** Hornblende potassium feldspar porphyritic granite
- N2** Potassium feldspar porphyritic granite
- N1** Diorite/monzonite

EARLY JURASSIC

- Rf** Felsic porphyry
- Rq** Quartz latite porphyry

SYMBOLS

Contacts: defined, approximate, assumed

Fault: defined and approximate, dip or down-dip side

Mylonite: small inside areas of shear

Uplift: small blue zone, base set on hinge-point

Valley shear zone: half circle on upper plate

Building - undetermined taking direction

Foliation

Axial plane

Dyke attitude

Quartz vein attitude

Ven surface trace

Mineral inclusions (B = biotite, M = mineral)

Ridgeline

Construction field box

Isotopic age determination sample location

Area of outcrop

Top

Park boundary

Abbreviations: and = andesite, g = garnet, sl = sillstone

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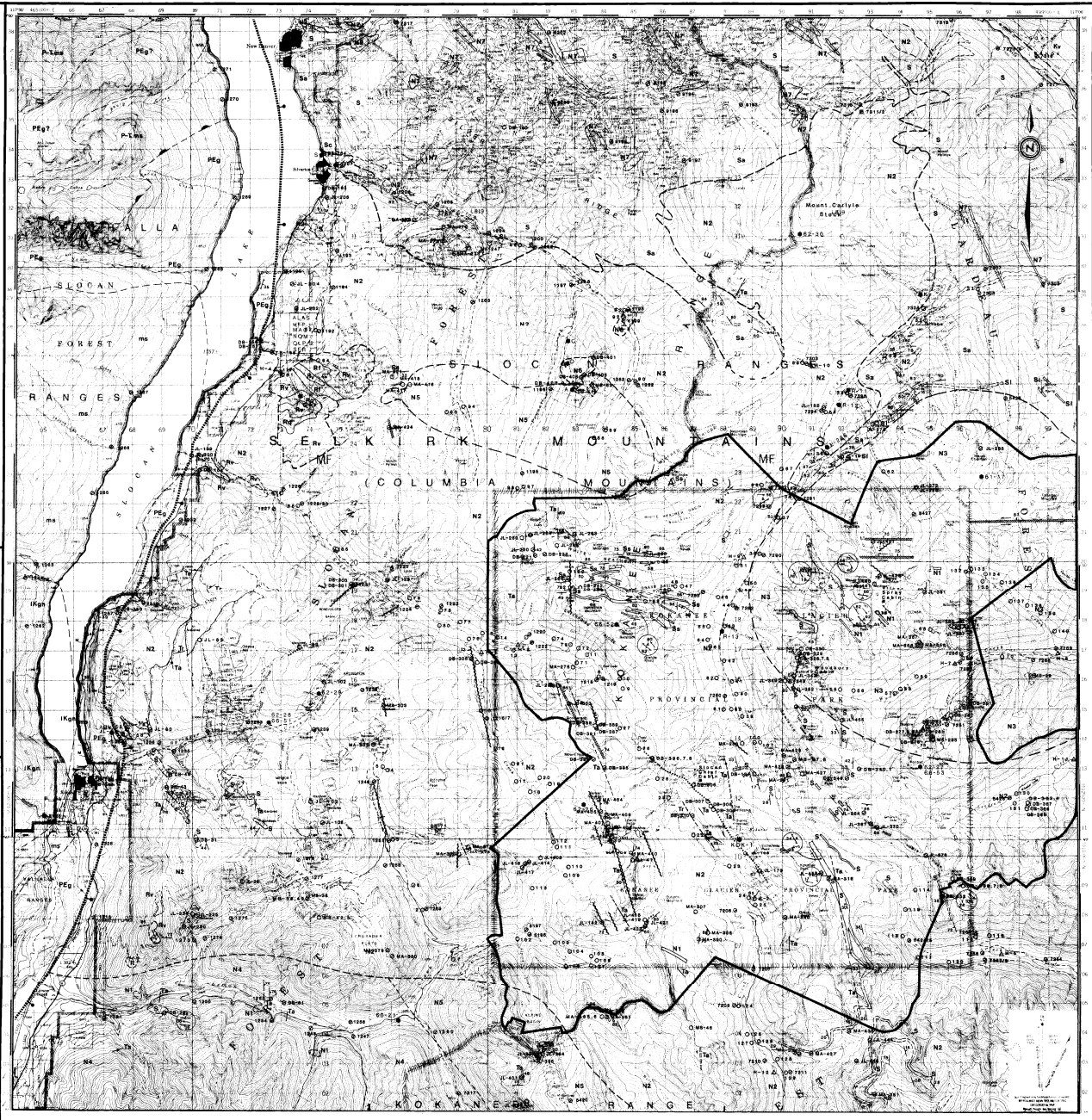
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 Province of British Columbia
 Ministry of Energy, Mines and Petroleum Resources
GEOLOGICAL SURVEY BRANCH
 OPEN FILE 1988-110
**GEOCHEMICAL SAMPLE LOCATIONS FOR KOKANEE GLACIER
 PROVINCIAL PARK AND SURROUNDING AREA**
 NTS 257/11, 14
 Compilation by D.A. Brown and J.M. Logan
 Results tabulated on Open File 1988-110

SYMBOLS

Regional geochemical survey (1958-1977) areas and/or sample locations

Heavy metal sample location (collected in 1987)

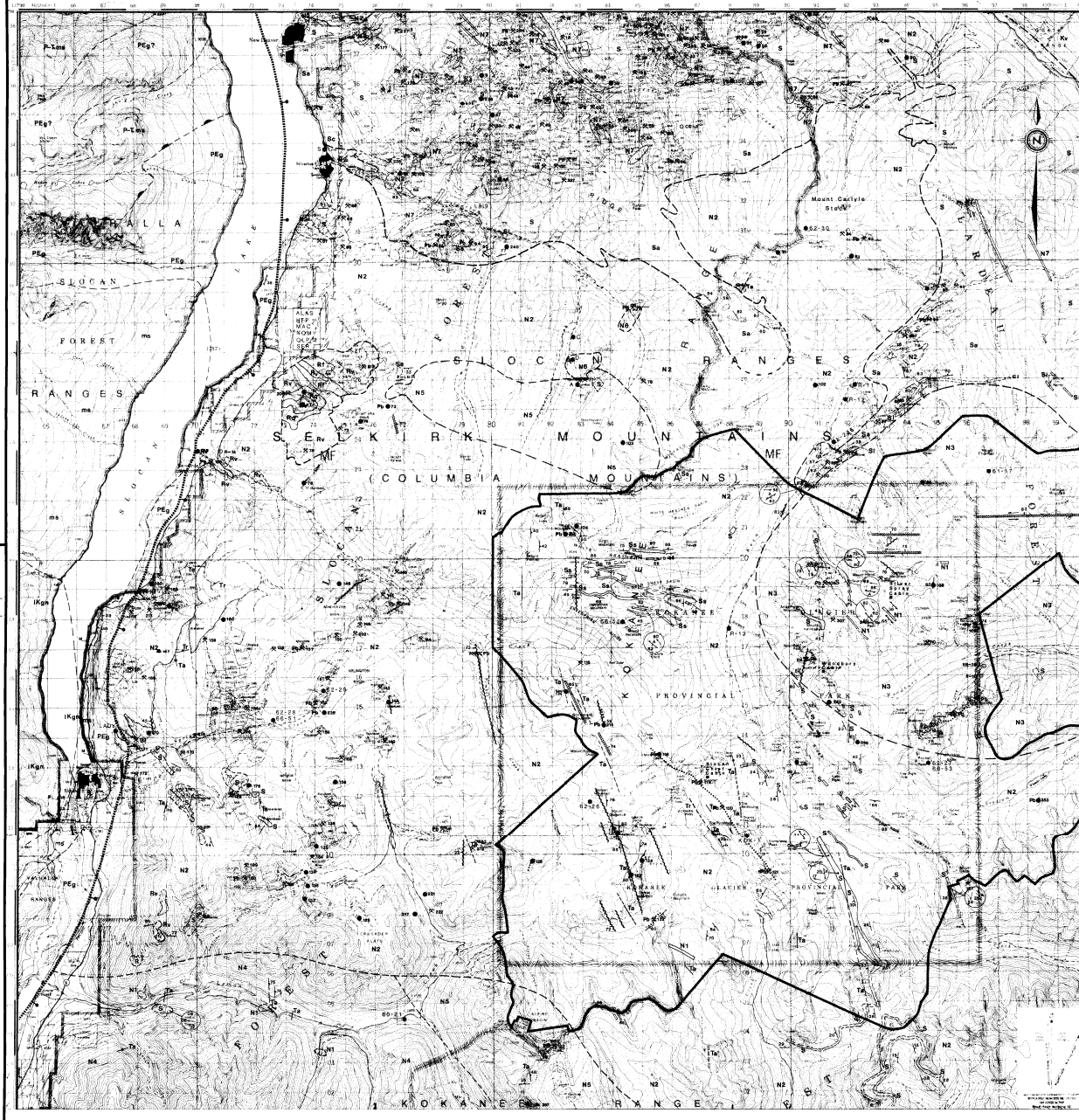
Stream sediment sample location (collected in 1987)

Rock mass sample location

Rock geochemical sample location

ROCK GEOCHEMICAL RESULTS - 1987.

STATION	EASTING	NORTHING	ROCK	Au ppb	Ag ppb	Cu ppm	Zn ppm	Pb ppm	As ppm	Sb ppm	Co ppm	Mn ppm	Fe %	U ppm
7-2	489035	550860	MRLZ	820	940	1200	630	413	<10					
7-26	471889	550297	VEIN	2	1	36	2.4	0.10	<10					
7-52	473981	551535	MRLZ	30	1280	215	5.70	11.47	<10				2.5	2.0
7-53	467592	551454	GRNT	<20	<0.5	1	3	66	<30				7.2	2.3
7-54	467658	551436	ALRZ	<20	1	13							6.5	<1.0
7-81	467731	551403	VEIN	170	1500	240	32	34	<10				58.4	11.0
7-83	470276	551470	VEIN	<20	1.75	308	1.26	4.0	<10					
7-88	473732	551712	MRLZ	4.0	4300	3.62	0.80	<10						
7-89	473724	551712	MRLZ	4.3	4000	5800	1.30	4.34	<10					
7-102	474040	551540	VEIN	1.8	2300	317	1350	830	<10					
7-105	474501	551585	GRNT	60	119	4	55	6	<10					
7-108	474469	551153	VEIN	1.9	66	11	250	20	<10				18.9	1.5
7-125	476778	551938	MRLZ	974	2300	2470	7.80	12.97	<10					
7-128	480585	552048	GRNT	<20	6.5		45	<10					1.0	2.0
7-147	484180	551075	VEIN	2.4	490	45	0.26	0.30	<10					
7-168	488750	551020	VEIN	420	28	112	3.90	1.56	<10					
7-170	483000	550950	GRNT	20	282	42	0.28							
7-170	483000	550950	VEIN	510	2300	2050	9.10	3.93	<32					
7-170	483000	550950	ALRZ	50	445	330	1.63	0.8	<10					
7-187	491320	552320	CKOK	60	117	520	310	<10					68.3	7.2
7-191	497200	552360	VEIN	100	410	1250	8.10	9.49	<10					
7-198	467177	551384	SLSN	<20	<0.5	15	69	380	<10				22.6	5.8
7-200	469988	552360	VEIN	970	23.0	72	40	88	<42					
7-201	469988	552360	GRNT	<20	0.5	2	13	24	<10					
7-201	469988	552360	VEIN	<10	<0.5	12	12	25	<10				3.9	<1.0
7-204	474346	552941	VEIN	150	8	13	26	55	<10					
7-204	474346	552941	GRNT	<20	<0.5	21	143	60	<10					
7-230	469730	550789	SKRN	<20	1.3	94	240	292	3200					
7-234	470001	550897	SKRN	<20	8.0	140	2.62	0.71	<10					
7-234	470001	550897	GRNT	12.7	34150	12	3.7	45	6.5	5.3				
7-235	470128	550895	MRLZ	30	320	563	7.80	21.40	<10					
7-240	483304	550263	HRFL	<20	<0.5	63	38	230	<10					
7-240	483304	550263	VEIN	1.0	1750	527	21.6							
7-250	481554	550247	HRFL	<20	0.5	23	29	290	<10					
7-253	481270	552088	VEIN	40	5.8	14	190	430	<10					
7-263	481422	552030	ALRZ	<20	5.9	29	11	12	<10					
7-283	482938	552050	ALRZ	<20	5.9	25	147	1920	<10					
7-286	482779	551950	VEIN	<20	<0.5	21	25	240	<10					
7-287	484482	552520	GRNT	3	79	11	3	21	<10					
7-273	494570	552549	VEIN	110	29	60	0.56	808	<10					
7-273	494570	552549	GRNT	<20	<0.5	34	2	34	<10					
7-275	493088	552467	VEIN	220	490	1	18	1.48	<10					
7-288	496804	552384	VEIN	60	16	10	720	420	<10					
7-288	496804	552384	GRNT	1	3	19	835	<10						
7-303	482737	551518	ALRZ	<20	1	3	18	835	<10					
7-304	490370	551930	VEIN	31	3	20	0.16	0.22	<10					
7-342	490408	551675	VEIN	40	8	16	680	942	<10					
7-352	490373	551579	HRFL	60	29	103			<10					
7-352	490373	551579	VEIN	240	100	16	0.23	0.12	<10					
7-355	490448	551585	VEIN	240	100	16	0.23	0.12	<10					
7-367	493000	551174	VEIN	140	3	108	16		<10					
7-370	493215	551100	ALRZ	<20	2	7	5	42	<10					
7-370	493215	551100	GRNT	40	3	3	4	1	<10					
7-381	494801	551895	VEIN	50	9	12	67	99	<10					
7-381	494801	551895	LAMP	70	5	10	95	420	<10					
7-381	494801	551895	GRNT	620	750	344	86	7.6	<10					
7-386	495055	551770	VEIN	1.1	60	26	577	1.24	<10					
7-386	495055	551770	GRNT	40	11	14	69	627	<10					
7-389	495760	551774	VEIN	30	1	12	43	23	<10					
7-389	495760	551774	GRNT	12	12	1	221	10	<10					
7-394	491915	550339	VEIN	5.0	7	<2	0.68	0.6	<10					
7-395	481782	550333	VEIN	19.8	1	<2	138	47	176					
7-401	481727	550366	GRNT	40	3	700	1	1	<10					
7-401	481727	550366	VEIN	1.0	0.5	4	30	10	<10					
7-404	481420	550165	VEIN	2.9	8	<2	0.86	0.9	<10					
7-404	481420	550165	GRNT	1.6	1	3.0	1.0	0.3	<10					
7-408	481841	550957	VEIN	390	510	105	14.4	0.33	<10					
7-414	481393	550983	VEIN	1.6	140	29	0.34	288	<10					
7-414	481393	550983	GRNT	8.6	0.16	47	11	1	<10					
7-414	481393	550983	ALRZ	500	9	0.10	41	<10						
7-418	485342	550785	ALRZ	100	55	11	0.30		<10					
7-418	485342	550785	VEIN	0.10	1.0	14.50	3.70	1.5	<10					
7-421	485356	550783	ALRZ	2.0	390	70	2.80	1.80	<15					
7-423	492455	551978	ALRZ	110	8	13	28	120	<10					
7-423	492455	551978	GRNT	40	1	3	6	20	<10					
7-439	493282	551950	VEIN	<20	1	3	2	20	<10					
7-444	493302	551936	VEIN	48.0	0.14	0.50	0.30	0.10	<10					
7-444	493302	551936	GRNT	49.0	0.70	1.13	1.60	3.40	<10					
7-444	493302	551936	HRFL	<20	3	21	43	148	<10					
7-455	491250	551475	HRFL	60	7	93	58	305	<10					
7-455	491250	551475	VEIN	2.5	9	60	55	10	<10					
7-465	489825	551284	GRNT	<20	0.5	20	7	12	1.5					
7-465	489825	551284	VEIN	<20	0.5	185	23	200	<10					
7-465	489825	551284	ALRZ	<20	0.5	26	33	63	<10					
7-465	489825	551284	HRFL	<20	0.5	24	15	16	<10					
7-465	489825	551284	SKCK	<20	0.5	30	63	63	<10					
7-474	485400	551097	VEIN	4.0	104	1	0.28	0.3	<10					
7-474	485400	551097	GRNT	2.5	102	80	50	10	<10					
7-474	485400	551097	ALRZ	170	9.5	32	30	125	<10					
7-474	485400	551097	GRNT	20	60	60	<10	<1.0	<1.2					
7-474	485400	551097	ALRZ	<20	0.5	22	22	29	<10					
7-474	485400	551097	HRFL	<20	0.5	22	29	<10	<1.0					
7-474	485400	551097	SKCK	<20	0.5	22	29	<10	<1.0					
7-474	485400	551097	GRNT	<20	0.5	22	29	<10	<1.0					
7-474	485400	551097	ALRZ											



- LEGEND**
- STRATIFIED ROCKS**
- LOWER JURASSIC
ROSSLAND GROUP
[R] Undifferentiated meta-sedimentary and metasedimentary rocks
[Rv] Metasedimentary rocks - undifferentiated (S, quartzite, feldspar, argillite and fossiliferous ELBE FORMATION (Squamish Metabasalts))
- UPPER TRIASSIC (CARMAN TO NORDAN)
SLOCAN GROUP
[S] Metasedimentary rocks - undifferentiated (S, quartzite, feldspar, argillite and gneiss) (S, pelitic sandstone (S))
[S1] Limestone
- PERMIAN AND/OR TRIASSIC
KASLO GROUP
[Kv] Metasedimentary rocks - argillite, feldspar, soft and blocky
- PALEOCENOIC TRIASSIC
NINJA KAMES BELT
[N]fels, actinolite, amphibole and ultramafic rock
- PRE-MIDDLE JURASSIC
[m] Metasedimentary rocks (metasediments and gneiss) and granitic gneiss
- INTRUSIVE ROCKS**
- TERTIARY (?)
[T] Andesite and basalt dykes
[Tt] Hydrothermal dykes
- TERTIARY (PALEOCENE TO EOCENE)
[P] LACROIX GRANITE
[P] Leucocratic biotite quartz monzonite to granite with amorphous quartz + garnet. Alkaline feldspar in Slocan Lake zone
- LATE CRETACEOUS
WISKEY GNEISS
[W] Metasedimentary rocks - hornblende and granite gneiss with biotitic veins
- MIDDLE JURASSIC
Nelson-Faulting Suite
[N] Faulted porphyry dykes
[NE] Lophynite
[NS] Quartz monzonite
[NS1] Metasedimentary rocks - argillite, feldspar, soft and blocky
[NS2] Hornblende and biotite porphyritic granite
[N2] Plagioclase and biotite porphyritic granite
[N1] Diorite amphibolite
- EARLY JURASSIC
ROSSLAND GROUP SUBVOLCANIC EQUIVALENTS
[R] Faulted porphyry
[Rv] Quartz dike porphyry

LEAD-ISOTOPE ANALYSES COMPILED FOR KOKANE GLEACIER PROVINCIAL PARK AND SURROUNDING AREA (2011)

DEPOSIT AND/OR SAMPLE NUMBER	NAME	EASTING	NORTHING	HTYPE	LOGIC/DIAGNOSTIC	UNSATURATED RATIO	206Pb/207Pb	206Pb/208Pb	207Pb/208Pb	208Pb/206Pb	208Pb/207Pb
02E7NF-100	SMUGGLER	487650	551130	K-SPAR	VEN	17.500	15.480	0.100	38.187	0.000	
02E7NF-109	SLOCAN CHEF	488800	551025	K-SPAR	VEN	17.780	15.520	0.100	38.264	0.000	
02E7NF-110	BLACKBURN	488800	551025	K-SPAR	VEN	17.710	15.520	0.100	38.177	0.000	
02E7NF-111	MULLY GIBSON	488200	550880	K-SPAR	VEN	17.530	15.480	0.100	38.165	0.000	
02E7NF-112	MULLY GIBSON	488200	550880	K-SPAR	VEN	17.530	15.480	0.100	38.165	0.000	
02E7NF-113	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-114	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-115	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-116	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-117	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-118	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-119	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-120	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-121	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-122	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-123	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-124	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-125	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-126	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-127	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-128	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-129	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	
02E7NF-130	WATTS HORSE	487650	551130	K-SPAR	VEN	18.070	15.520	0.100	39.242	0.000	

Province of British Columbia
 Ministry of Energy, Mines and Petroleum Resources
 GEOLOGICAL SURVEY BRANCH
 OPEN FILE 1998-110
MINERAL OCCURRENCES AND LEAD ISOTOPE DATA FOR KOKANE GLEACIER PROVINCIAL PARK AND SURROUNDING AREA
 NTS 02F/11, 14
 Compiled by J.M. Logan

NOTES

- 1. Analysis normalised to Broken Hill lead standards values of Richards et al. (1981).
- 2. Analysis normalised to Fishback et al. (1981), corrected for instrumental fractionation of Godelin et al. (in preparation).

ABBREVIATIONS

- AMS = argillite, BATH = batholith, DAG PV = dyagmatic porphyry, Gdn = granite, Hb POR Dn = hornblende porphyritic granite, K-SPAR = potassium feldspar porphyry, LAMP = lamprophyre, LET = limestone, METAULC = metacarbonate, NEI = Nelson, NEI, P, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ