POLYMETALLIC VEINS Ag-Pb-Zn±Au I05

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Modified for Yukon by A. Fonseca
Refer to preface for general references and formatting significance.
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IDENTIFICATION

SYNONYMS: Clastic metasediment-hosted silver-lead-zinc veins, silver/base metal epithermal deposits.

COMMODITIES (BYPRODUCTS): Ag, Pb, Zn (Cu, Au, Mn).

EXAMPLES **(Yukon): United Keno Hill (105M 001), Porcupine Vein (105M 008), Yukeno (105M 018), Mt. Keno (105M 016), Hart (105B 021), Logjam (105B 038), Plata (105N 003), Tintina (105G 006)**;
(British Columbia - *Canada/International*):

- Metasedimentary host: Silvana (082FNW050) and Lucky Jim (082KSW023), Slocan-New Denver-Ainsworth district, St. Eugene (082GSW025), Silver Cup (082KNW027), Trout Lake camp; *Hector-Calumet and Elsa, Mayo district (Yukon, Canada); Coeur d'Alene district (Idaho, USA); Harz Mountains and Freiberg district (Germany); Příbram district (Czechoslavakia).*
- Igneous host: Wellington (082ESE072) and Highland Lass - Bell (082ESW030, 133), Beaverdell camp; Silver Queen (093L002), Duthie (093L088), Cronin (093L127), Porter-Idaho (103P089), Indian (104B031); *Sunnyside and Idorado, Silverton district and Creede (Colorado, USA), Pachuca (Mexico).*

GEOLOGICAL CHARACTERISTICS

CAPSULE DESCRIPTION: Sulphide-rich veins containing sphalerite, galena, silver and sulphosalt minerals in a carbonate and quartz gangue. These veins can be subdivided into those hosted by metasedimentary rocks and another group hosted by volcanic or intrusive rocks. The latter type of mineralization is typically contemporaneous with emplacement of a nearby intrusion.

TECTONIC SETTINGS: These veins occur in virtually all tectonic settings except oceanic, including continental margins, island arcs, continental volcanics and cratonic sequences.

DEPOSITIONAL ENVIRONMENT/GEOLOGICAL SETTING:

- Metasedimentary host: Veins are emplaced along faults and fractures in sedimentary basins dominated by clastic rocks that have been deformed, metamorphosed and intruded by igneous rocks. Veins postdate deformation and metamorphism.
- Igneous host: Veins typically occur in country rock marginal to an intrusive stock. Typically veins crosscut volcanic sequences and follow volcano-tectonic structures, such as caldera ring-faults or radial faults. In some cases the veins cut older intrusions.

AGE OF MINERALIZATION: Proterozic or younger; mainly Cretaceous to Tertiary in British Columbia. **Polymetallic veins of the Keno Hill district in Yukon are related to, but distal from, mid-Cretaceous intrusions.**

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HOST/ASSOCIATED ROCK TYPES: These veins can occur in virtually any host. Most commonly the veins are hosted by thick sequences of clastic metasedimentary rocks or by intermediate to felsic volcanic rocks. In many districts there are felsic to intermediate intrusive bodies and mafic igneous rocks are less common. Many veins are associated with dykes following the same structures. **Most deposits and prospects of the Keno Hill District, Yukon are hosted in the Mississippian Keno Hill Quartzite.**

DEPOSIT FORM: Typically steeply dipping, narrow, tabular or splayed veins. Commonly occur as sets of parallel and offset veins. Individual veins vary from centimetres up to more than 3 m wide and can be followed from a few hundred to more than 1000 m in length and depth. Veins may widen to tens of metres in stockwork zones.

TEXTURE/STRUCTURE: Compound veins with a complex paragenetic sequence are common. A wide variety of textures, including cockade texture, colloform banding and crustifications and locally druzy. Veins may grade into broad zones of stockwork or breccia. Coarse-grained sulphide minerals as patches and pods, and fine-grained disseminations are confined to veins.

ORE MINERALOGY [Principal and *subordinate*]: Galena, sphalerite, tetrahedrite-tennantite, *other sulphosalts including pyrargyrite, stephanite, bournonite and acanthite, native silver, chalcopyrite, pyrite, arsenopyrite, stibnite*. Silver minerals often occur as inclusions in galena. *Native gold and electrum in some deposits.* Rhythmic compostional banding sometimes present in sphalerite. Some veins contain more chalcopyrite and gold at depth and Au grades are normally low for the amount of sulphide minerals present**. High grade veins in the Silver King zone of United Keno Hill mine, Yukon consist of native silver, ruby silver and galena, whereas lower grade veins in Bellekeno zone consist of siderite-galena-sphalerite.**

GANGUE MINERALOGY [Principal and *subordinate*]:

- Metasedimentary host: Carbonates (most commonly siderite with minor dolomite, ankerite and calcite), quartz, *barite, fluorite, magnetite, bitumen*.
- Igneous host: Quartz, carbonate (rhodochrosite, siderite, calcite, dolomite), *sometimes specular hematite, hematite, barite, fluorite.* Carbonate species may correlate with distance from source of hydrothermal fluids with proximal calcium and magnesium-rich carbonates and distal iron and manganese-rich species.

ALTERATION MINERALOGY: Macroscopic wall rock alteration is typically limited in extent (measured in metres or less). The metasedimentary rocks typically display sericitization, silicification and pyritization. Thin veining of siderite or ankerite may be locally developed adjacent to veins. In the Coeur d'Alene camp a broader zone of bleached sedimentary rocks is common. In volcanic and intrusive hostrocks the alteration is argillic, sericitic or chloritic and may be quite extensive.

WEATHERING: Black manganese oxide stains, sometimes with whitish melanterite, are common weathering products of some veins. The supergene weathering zone associated with these veins has produced major quantities of manganese. Galena and sphalerite weather to secondary Pb and Zn carbonates and Pb sulphate. In some deposits supergene enrichment has produced native and horn silver.

ORE CONTROLS: Regional faults, fault sets and fractures are an important ore control; however, veins are typically associated with second order structures. In igneous rocks the faults may relate to volcanic centers. Significant deposits restricted to competent lithologies. Dikes are often emplaced along the same faults and in some camps are believed to be roughly contemporaneous with mineralization. Some polymetallic veins are found surrounding intrusions with porphyry deposits or prospects.

GENETIC MODELS: Historically these veins have been considered to result from differentiation of magma with the development of a volatile fluid phase that escaped along faults to form the veins. More recently researchers have preferred to invoke mixing of cooler, upper crustal hydrothermal or meteoric waters with rising fluids that could be metamorphic, groundwater heated by an intrusion or expelled directly from a differentiating magma. Any development of genetic models is complicated by the presence of other types of veins in many districts. For example, the Freiberg district has veins carrying F-Ba, Ni-As-Co-Bi-Ag and U.

COMMENTS: Ag-tetrahedrite veins, such as the Sunshine and Galena mines in Idaho, contain very little sphalerite or galena. These may belong to this class of deposits or possibly the five-element veins. The styles of alteration, mineralogy, grades and different geometries can usually be used to distinguish the polymetallic veins from stringer zones found below syngenetic massive sulphide deposits. **The Keno Hill silver district, Yukon has over 65 polymetallic veins and prospects within an area 26 km long by 6.4 km wide.**

ASSOCIATED DEPOSIT TYPES:

- Metasedimentary host: Polymetallic mantos (M01).
- Igneous host: May occur peripheral to virtually all types of porphyry mineralization (L01, L03, L04, L05, L06, L07, L08) and some skarns (K02, K03).

EXPLORATION GUIDES

GEOCHEMICAL SIGNATURE: Elevated values of Zn, Pb, Ag, Mn, Cu, Ba and As. Veins may be within arsenic, copper, silver, mercury aureoles caused by the primary dispersion of elements into wallrocks or broader alteration zones associated with porphyry deposit or prospects.

GEOPHYSICAL SIGNATURE: May have elongate zones of low magnetic response and/or electromagnetic, self potential or induced polarization anomalies related to ore zones.

OTHER EXPLORATION GUIDES: Strong structural control on veins and common occurrence of deposits in clusters can be used to locate new veins.

ECONOMIC FACTORS

TYPICAL GRADE AND TONNAGE : Individual vein systems range from several hundred to several million tonnes grading from 5 to 1500 g/t Ag, 0.5 to 20% Pb and 0.5 to 8% Zn. Average grades are strongly influenced by the minimum size of deposit included in the population. For B.C. deposits larger than 20 000 t the average size is 161 000 t with grades of 304 g/t Ag, 3.47 % Pb and 2.66 % Zn. Copper and gold are reported in less than half the occurrences, with average grades of 0.09 % Cu and 4 g/t Au. **The Keno Hill district, Yukon has the largest polymetallic vein deposits in the Canadian Cordillera, with a geological resource (pre-mining) of 5,816,423 tonnes.**

ECONOMIC LIMITATIONS: These veins usually support small to medium-size underground mines. The mineralization may contain arsenic which typically reduces smelting credits.

IMPORTANCE: The most common deposit type in British Columbia with over 2000 occurrences; these veins were a significant source of Ag, Pb and Zn until the 1960s. They have declined in importance as industry focused more on syngenetic massive sulphide deposits. Larger polymetallic vein deposits are still attractive because of their high grades and relatively easy benefication. They are potential sources of cadmium and germanium. **Keno Hill was an important mining district in Yukon for more than six decades (1924 to 1989).**

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I05 - Polymetallic veins Ag-Pb-Zn-Au - BC and Yukon deposits

Deposit	country	tonnes	Au (g/t)	Ag (g/t)	Cu %	Pb %	Zn %
VIRGINIA	CNBC	20 060	1.0	2,950	0.00	4.40	2.19
HOWARD	CNBC	20 091	11.0	81	0.00	5.27	1.71
SUNRISE	CNBC	20 527	0.0	295	0.00	14.83	4.95
PORCUPINE VEIN	CNYT	24 339		1,426		8.6	2.61
RICHMOND	CNBC	36 650	0.0	681	0.00	6.34	2.08
NOBLE FI	CNBC	39 812	0.0	376	0.00	5.45	3.99
YUKENO	CNYT	40 092		554		6.96	10.67
IVANHOE	CNBC	40 293	0.0	353	0.00	5.87	0.82
TEDDY	CNBC	44 005	5.0	161	0.00	7.90	6.80
SURPRISE	CNBC	44 384	0.0	1,348	0.00	12.63	7.97
DUNWELLE	CNBC	46 689	7.0	220	0.03	1.80	2.38
EMERALD	CNBC	49 142	1.0	348	0.02	6.73	9.69
CENTER	CNBC	51 460	8.0	57	0.00	1.88	0.92
MAMIER	CNBC	55 340	33.0	141	9.00	0.00	112.00
SKYLARK	CNBC	57 913	3.0	593	0.04	0.41	0.15
ATLIN	CNBC	57 982	0.0	638	0.00	5.00	5.00
RUTH-HOP	CNBC	60 605	0.0	1,271	0.00	16.55	2.65
BOSUN	CNBC	63 222	0.0	1,098	0.00	7.76	4.98
LOGJAM	CNYT	69 854	3.0	392			
ENTERPRI	CNBC	71 304	4.0	109	0.07	1.46	0.33
CRONIN	CNBC	73 048	1.0	388	0.12	7.04	7.25
MINTO	CNBC	80 650	7.0	20	0.01	0.07	0.00
GALENA	CNBC	84 098	0.0	209	0.00	3.40	5.52
SPOKANE	CNBC	85 360	0.0	53	0.00	5.02	1.83
HIGHLAND	CNBC	89 228	0.0	118	0.00	10.50	0.43
DUTHIE	CNBC	93 862	2.0	631	0.02	4.84	4.76
HART	CNYT	97 000	0.0	1,025	0.00	0.00	0.00
WAGNER	CNBC	99 901	0.0	418	0.00	8.79	3.78
HEWITT	CNBC	108 554	0.0	550	0.00	1.59	2.49
ESTELLA	CNBC	109 518	0.0	58	0.00	4.73	8.98
SILVER	CNBC	111 400	6.0	382	0.00	0.17	0.39
TEDIER	CNBC	138 210	1.0	78	0.59	1.81	2.70
PAYNER	CNBC	140 604	0.0	837	0.00	12.36	2.34
VICTOR	CNBC	149 425	1.0	864	0.00	14.55	9.52
SPIDER	CNBC	153 465	3.0	391	0.06	8.09	8.56
MOLLY	CNBC	160 185	0.0	551	0.00	3.34	2.07
TREASURE	CNBC	160 987	0.0	858	0.00	4.83	5.01
UNION	CNBC	171 165	10.0	251	0.01	0.10	0.17
GROUSE	CNBC	181 443	0.0	20	0.53	0.00	4.50
ARLINGTON	CNBC	182 826	11.0	62	0.00	0.75	0.65
RAMBLERO	CNBC	189 564	0.0	560	0.00	5.56	1.40
CORK	CNBC	193 244	0.0	86	0.00	3.06	4.84
SILVER	CNBC	205 033	2.0	1,158	0.10	3.88	5.99
JOHNNY MT	CNBC	205 397	13.0	19	0.49	0.00	0.00
CHAPUT	CNBC	257 471	4.0	7	0.00	0.03	0.02
ZONE3T	CNBC	258 847	0.0	12	0.18	1.69	4.80
SILVER	CNBC	277 050	0.0	579	2.99	0.25	0.00
VANROI	CNBC	284 705	0.0	304	0.00	2.84	2.67
YMIROI	CNBC	327 647	10.0	44	0.00	1.46	0.25
SILVERSM	CNBC	355 047	0.0	656	0.33	9.07	3.36
WOLFER	CNBC	392 200	0.0	305	0.00	0.12	0.59
HIGHLAND	CNBC	396 927	0.0	67	0.00	5.55	1.31
HORN SILVER	CNBC	433 177	1.0	294	0.01	0.08	0.09
RUTH	CNBC	450 122	0.0	180	0.01	3.47	4.37
WHITEWATER	CNBC	471 063	0.0	231	0.00	2.96	4.91
SILVANA	CNBC	490 784	0.0	467	0.00	5.49	5.04
NORTH	CNBC	536 569	11.0	52	0.08	1.12	3.35
FIREWEED	CNBC	580 544	0.0	342	0.00	1.34	2.22
SNOWFLAKE	CNBC	660 697	0.0	91	0.00	2.26	1.15
STANDARD	CNBC	745 418	0.0	373	0.00	5.31	6.62
PORTER-I	CNBC	853 729	1.0	733	0.97	3.07	1.94
ZETA	CNYT	980 000		558			
LUCKY JIM	CNBC	1 065 798	0.0	17	0.00	0.35	7.49
GROUSE	CNBC	1 100 003	0.0	19	0.40	0.00	2.00
BEAVERDEL	CNBC	1 198 829	0.0	877	0.00	0.93	1.16
DUNDEE	CNBC	1 245 334	10.0	140	0.00	5.78	6.00
VINEEE	CNBC	1 300 000	2.0	36	0.11	3.12	0.76
ST.EUGENE	CNBC	1 475 266	0.0	124	0.00	7.66	0.98
SILVER Q	CNBC	1 907 643	3.0	304	0.02	0.04	5.87
DOLLY VARDEN	CNBC	2 161 314	0.0	435	0.00	0.38	0.02
UNITED KENO HILL	CNYT	5 816 423	1	63	1.76	2.46	4.6

I05 - Polymetallic veins Ag-Pb-Zn-Au - Yukon MINFILE

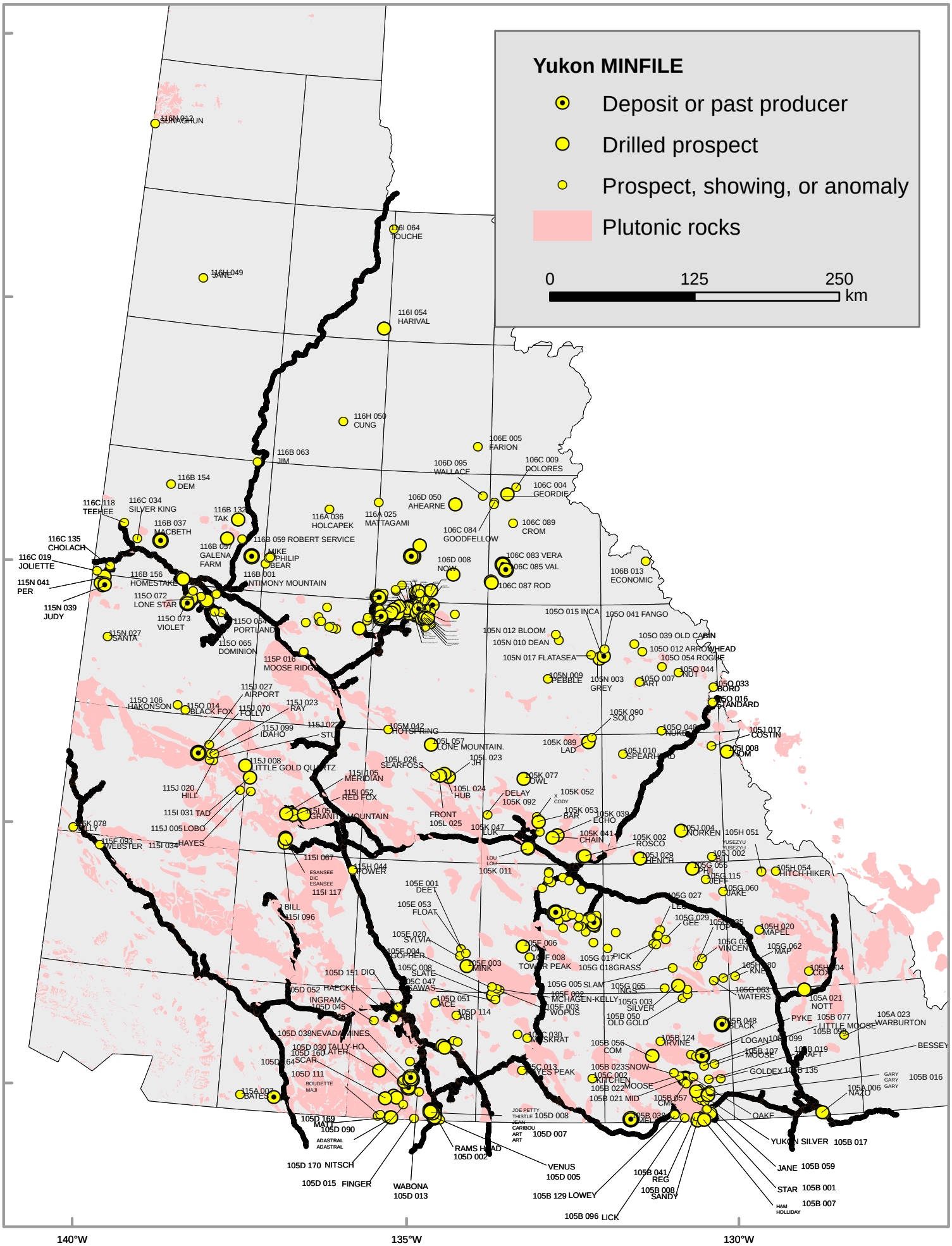
MINFILE	NAMES	STATUS
105B 007	DALE	UNDERGROUND PAST PRODUCER
105D 005	VENUS	UNDERGROUND PAST PRODUCER
105D 009	BIG THING, ARCTIC, CARIBOU, SUGARLOAF HILL	UNDERGROUND PAST PRODUCER
105D 038	UNION MINES, EXPORT, IDAHO HILL, LOST MINES	UNDERGROUND PAST PRODUCER
105F 053	KEY, KEY 3, SILVER RIDGE	UNDERGROUND PAST PRODUCER
105M 001	UNITED KENO HILL	UNDERGROUND PAST PRODUCER
105M 003	DUNCAN	UNDERGROUND PAST PRODUCER
105M 008	COMSTOCK, PORCUPINE VEIN	UNDERGROUND PAST PRODUCER
105M 010	VANGUARD	UNDERGROUND PAST PRODUCER
105M 014	MAYBRUN	UNDERGROUND PAST PRODUCER
105M 016	RUNER, MT. KENO	UNDERGROUND PAST PRODUCER
105M 018	FORMO, YUKENO	UNDERGROUND PAST PRODUCER
105M 020	PADDY	UNDERGROUND PAST PRODUCER
105M 024	CREAM AND JEAN	UNDERGROUND PAST PRODUCER
105M 032	MT HALDANE, LOOKOUT	UNDERGROUND PAST PRODUCER
105M 062	SEGSWORTH, CARIBOU HILL	UNDERGROUND PAST PRODUCER
105M 069	GAMBLER	UNDERGROUND PAST PRODUCER
106D 038	MCKAY HILL	UNDERGROUND PAST PRODUCER
115J 027	BOMBER, HELICOPTER, AIRPORT	UNDERGROUND PAST PRODUCER
105M 034	COBALT	OPEN PIT PAST PRODUCER
105N 003	PLATA	OPEN PIT PAST PRODUCER
105O 015	INCA	OPEN PIT PAST PRODUCER
115A 003	KANE, MARY, JOHNS, CHRISTMAS, SUPRISE, MOWHAK, TUF	OPEN PIT PAST PRODUCER
115N 039	LERNER, LUBRA, JUDY, GOLDEN CRAG	OPEN PIT PAST PRODUCER
115N 040	CONNAUGHT, MOSQUITE CREEK	OPEN PIT PAST PRODUCER
105B 021	HART, BASTILLE, MID, CMC, BRX	DEPOSIT
105B 038	LOGJAM, KP, MEL, MAC	DEPOSIT
105B 099	LOGAN	DEPOSIT
105F 057	KETZAKEY, KEY 18B	DEPOSIT
106C 083	VERA	DEPOSIT
106D 021	PESO	DEPOSIT
105A 005	WATSON	DRILLED PROSPECT
105A 006	NAZO	DRILLED PROSPECT
105A 021	NOTT	DRILLED PROSPECT
105B 001	STAR, LORD	DRILLED PROSPECT
105B 008	HOLLIDAY, RANSON, SWITCHBACK, SHIPMENT,	DRILLED PROSPECT
105B 016	KODIAK, PUNCHO, CARIBO, MAYO, HI-BOY, DEC	DRILLED PROSPECT
105B 017	HARDTACK, KODIAK, DEE, HI, YUKON SILVER, ROXY, ORO	DRILLED PROSPECT
105B 056	ZAK, COM	DRILLED PROSPECT
105B 098	QB, LITTLE MOOSE	DRILLED PROSPECT
105B 102	FREER, HOLLIDAY, LUCKY	DRILLED PROSPECT
105B 133	SCHELLENBURG, LIZ, BESSEY	DRILLED PROSPECT
105C 008	SLATE	DRILLED PROSPECT
105D 026	PORTER, FLEMING, EMPIRE	DRILLED PROSPECT
105D 037	GOLD REEF	DRILLED PROSPECT
105D 102	ROSSBANK, RESORT	DRILLED PROSPECT
105D 121	TENNEY	DRILLED PROSPECT
105D 156	ROOTS, ART	DRILLED PROSPECT
105D 160	LATER	DRILLED PROSPECT
105D 164	SCAR	DRILLED PROSPECT
105D 202	BEE	DRILLED PROSPECT
105E 003	LOON, BEAVER, MINK	DRILLED PROSPECT
105F 006	IOLA	DRILLED PROSPECT
105F 022	GRAYLING, CONE, RAM	DRILLED PROSPECT
105F 054	LAPRAIRIE, LAP 10, STRIKE 8A	DRILLED PROSPECT
105F 055	HOEY, F2 ZONE, GALENA	DRILLED PROSPECT
105F 056	STUMP, A-1 ZONE	DRILLED PROSPECT
105F 074	PINNACLE, H, PEAK	DRILLED PROSPECT
105F 120	BOBBY	DRILLED PROSPECT
105G 003	BLUEBERRY, SILVER	DRILLED PROSPECT
105G 055	PHIL	DRILLED PROSPECT
105I 008	NOM	DRILLED PROSPECT
105J 004	NORKEN	DRILLED PROSPECT
105K 002	WOP, URSULA, DAN, TIN, ROSS, ROSCO, BOB	DRILLED PROSPECT
105K 011	LYN, PELLY RIDGE, PUG, JO, TELE, LOU, BUIE, KEY	DRILLED PROSPECT
105K 039	CUB	DRILLED PROSPECT
105K 041	ABRAHAM	DRILLED PROSPECT
105K 051	ACTION, JRV	DRILLED PROSPECT
105K 053	MUR, JRV	DRILLED PROSPECT
105K 077	OWL	DRILLED PROSPECT
105K 089	LAD, ANDREW	DRILLED PROSPECT
105L 023	MUIR, JH	DRILLED PROSPECT
105L 024	HUB	DRILLED PROSPECT
105L 025	FRONT, PINE	DRILLED PROSPECT
105M 004	GOLDEN QUEEN	DRILLED PROSPECT
105M 011	HOMESTAKE	DRILLED PROSPECT
105M 017	WERNECKE, RAILROAD	DRILLED PROSPECT
105M 021	EAGLE	DRILLED PROSPECT
105M 025	NORD	DRILLED PROSPECT
105M 026	GERLITZKI	DRILLED PROSPECT
105M 027	TITAN	DRILLED PROSPECT
105M 028	SHANGHAI, NORHT LIMB	DRILLED PROSPECT
105M 046	MOON	DRILLED PROSPECT
105M 052	MT HINTON	DRILLED PROSPECT
105M 063	IRON CLAD	DRILLED PROSPECT
105M 070	HAVRENAK	DRILLED PROSPECT
105M 072	BELEY	DRILLED PROSPECT
106C 004	GEORDIE	DRILLED PROSPECT
106C 087	ROD	DRILLED PROSPECT
106D 008	NOW, WON	DRILLED PROSPECT
106D 016	RAMBLER	DRILLED PROSPECT
106D 022	BARKER	DRILLED PROSPECT
106D 039	GREY COPPER HILL	DRILLED PROSPECT
106D 050	AHEARNE	DRILLED PROSPECT
106D 081	LUCKNOW	DRILLED PROSPECT
115I 031	TAD	DRILLED PROSPECT

I05 - Polymetallic veins Ag-Pb-Zn-Au - Yukon MINFILE

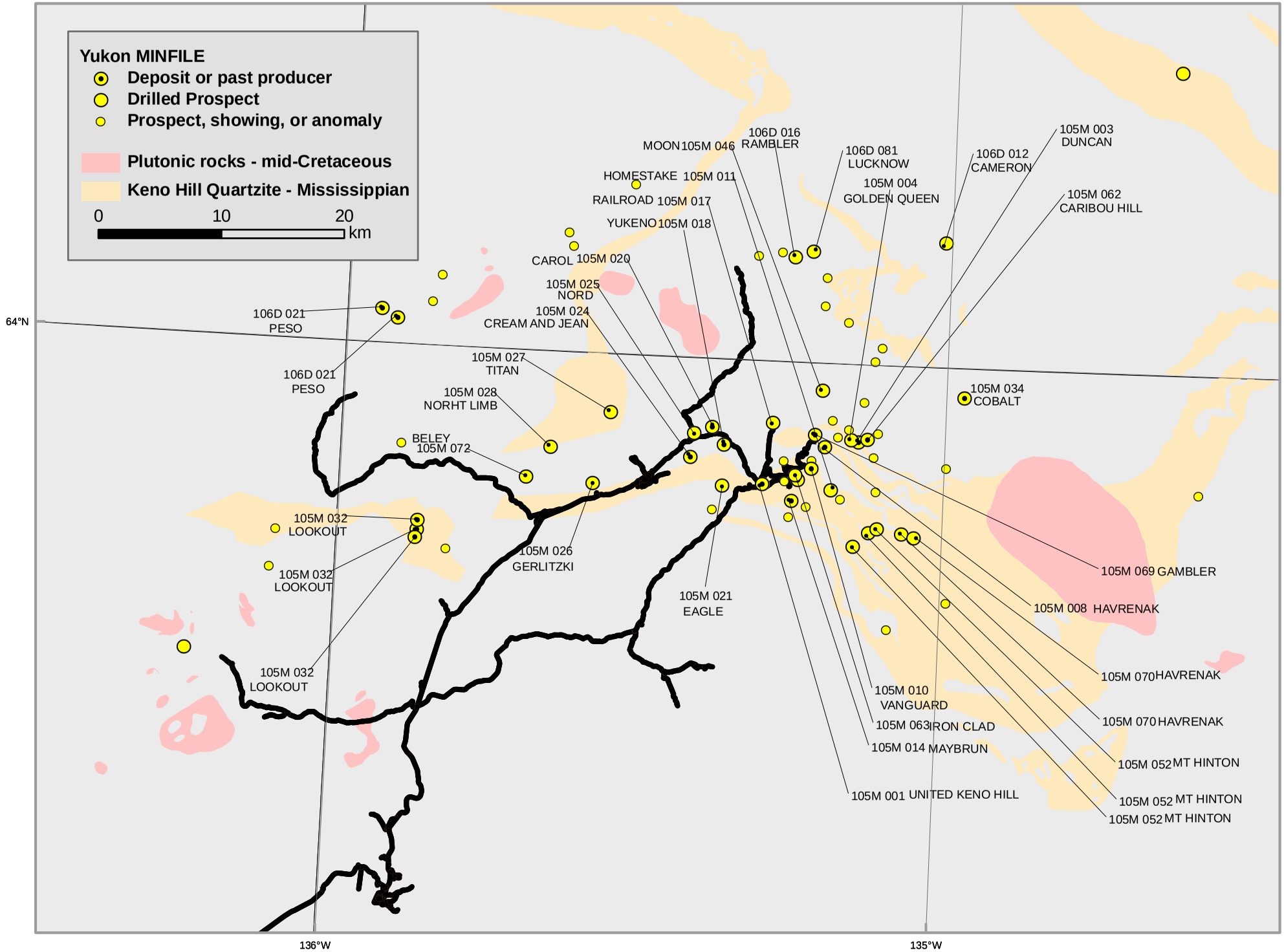
MINFILE	NAMES	STATUS
115I 034	FROG, PROSPECTOR MOUNTAIN	DRILLED PROSPECT
115I 052	RED FOX	DRILLED PROSPECT
115I 057	GRANITE MOUNTAIN	DRILLED PROSPECT
115I 067	ESANSEE, TAWA	DRILLED PROSPECT
115I 096	RUSK, J BILL	DRILLED PROSPECT
115I 105	MERIDIAN	DRILLED PROSPECT
115N 041	PER	DRILLED PROSPECT
115P 003	SCHEELITE DOME PROJECT, HAWTHORNE	DRILLED PROSPECT
116B 001	INDEX, ANTIMONY MOUNTAIN	DRILLED PROSPECT
116B 057	SPOTTED FAWN, LITTLE TWELVE MILE, GALENA FARM	DRILLED PROSPECT
116B 132	BLACKSTONE	DRILLED PROSPECT
116B 156	TYNDALL, HOMESTAKE, SUNDAY	DRILLED PROSPECT
116I 054	HARIVAL	DRILLED PROSPECT
105B 059	FAG, LUCKY STRIKE	PROSPECT
105B 124	SILVER CREEK, IRVINE, SOURCE	PROSPECT
105D 002	LULU, RAMS HEAD	PROSPECT
105D 051	ACE	PROSPECT
105D 098	DONKEY	PROSPECT
105D 114	TEXEL, ABI	PROSPECT
105D 115	WORBETTS	PROSPECT
105D 144	EVIEW	PROSPECT
105F 003	WOPUS	PROSPECT
105F 004	GOPHER	PROSPECT
105F 014	SONNY	PROSPECT
105F 016	SHARON	PROSPECT
105F 024	TYRO	PROSPECT
105F 035	AMBROSE	PROSPECT
105F 040	CANUSA	PROSPECT
105F 052	MT. MISERY	PROSPECT
105F 122	WHYTE	PROSPECT
105G 001	MONT	PROSPECT
105G 027	LEO	PROSPECT
105G 115	JEFF, ANDY	PROSPECT
105K 052	MYE, JRV	PROSPECT
105L 026	SEARFOSS	PROSPECT
105M 005	SILVER BASIN	PROSPECT
105M 012	CHRISTINE	PROSPECT
105M 031	STREBCHUK, JOUMBIRA	PROSPECT
105O 033	KELVIN, BORD	PROSPECT
105O 041	FANGO	PROSPECT
105O 054	ROGUE	PROSPECT
106C 009	DOLORES	PROSPECT
106D 017	RUSTY	PROSPECT
106D 023	MEILECKE	PROSPECT
106D 063	NAT, LUCKY BEAR	PROSPECT
115A 007	BATES, IRON CREEK	PROSPECT
115K 078	CHAIR, ICE, BILLY, RAIN	PROSPECT
115O 071	BOX CAR	PROSPECT
115P 008	EAST RIDGE, BOULDER CREEK, SNARK, TEE	PROSPECT
115P 056	MAY CREEK, ORE	PROSPECT
115P 057	QUEST	PROSPECT
116A 012	HAMILTON, LORRIE, MIKE	PROSPECT
116A 036	HOLCAPEK	PROSPECT
116C 118	FORTYMILE, ROSE, QUEEN OF NORTH, GOLDEN GATE	PROSPECT
105A 023	WARBURTON	SHOWING
105B 002	STERLING, JRS, BIMBO, LEE, SILVER, HG, RF, OLIE	SHOWING
105B 005	ANNE, RANCH, CAT, JANE	SHOWING
105B 006	LENA, BEVERLY, ED, TYIN, BOB, REG, B, BESSY, C, SPE	SHOWING
105B 012	SHILSKY, DOT, JAKE, A	SHOWING
105B 018	KERNS, EAST, ALCAN, BEAVER, OWL, BOB, CUB, MARS	SHOWING
105B 019	BRODHAGEN, BILLY, GLADYS, JOHNY, CRAFT, MEISTER	SHOWING
105B 041	POULIN, CAT, REG	SHOWING
105B 048	MOOSELICK, BLACK, RUTH	SHOWING
105B 050	OLD GOLD, LIARD	SHOWING
105B 057	ROY, BUC, BOY	SHOWING
105B 058	BINGY, CABIN CREEK	SHOWING
105B 060	DEATH, RAY	SHOWING
105B 096	LICK	SHOWING
105B 107	MOOSE, PIGSKIN	SHOWING
105B 122	ABBOTT, LENA	SHOWING
105B 129	LOWEY	SHOWING
105C 002	KITCHEN	SHOWING
105C 047	SAWAS	SHOWING
105D 007	THISTLE	SHOWING
105D 013	WABONA	SHOWING
105D 045	INGRAM	SHOWING
105D 111	BOUDETTE, NAIAD	SHOWING
105D 151	DIO, DUST	SHOWING
105D 169	MATT	SHOWING
105D 170	NITSCH	SHOWING
105D 173	MAJI	SHOWING
105E 001	LIVINGSTON, FLOAT	SHOWING
105E 020	SYLVIA	SHOWING
105E 053	DEET	SHOWING
105F 002	MOBS, MCHAGEN-KELLY	SHOWING
105F 008	TOWER PEAK	SHOWING
105F 039	MCNEE	SHOWING
105F 041	CYR	SHOWING
105F 043	LAPIE	SHOWING
105F 058	MAGUNDY	SHOWING
105F 066	CONNELL	SHOWING
105F 069	KIRWAN	SHOWING
105F 070	DROC	SHOWING
105F 083	FOX	SHOWING
105F 090	SPURT	SHOWING
105G 005	SLAM	SHOWING
105G 010	HILLER	SHOWING
105G 011	AXE	SHOWING

I05 - Polymetallic veins Ag-Pb-Zn-Au - Yukon MINFILE

MINFILE	NAMES	STATUS
105G 017	PICK	SHOWING
105G 018	GRASS	SHOWING
105G 021	ZIELINSKI	SHOWING
105G 029	GEE	SHOWING
105G 035	TOP	SHOWING
105G 039	VINCENT	SHOWING
105G 062	MAP	SHOWING
105G 063	WATERS	SHOWING
105H 020	MAPEL	SHOWING
105H 080	KNEIL	SHOWING
105J 002	BILL	SHOWING
105J 010	SPEARHEAD	SHOWING
105J 017	COSTIN	SHOWING
105K 047	WANN	SHOWING
105K 090	SOLO	SHOWING
105K 092	GALWAY, PARAGON, BEYON, DELAY	SHOWING
105L 057	LONE MOUNTAIN.	SHOWING
105L 064	JASPY	SHOWING
105M 002	FAITH	SHOWING
105M 006	NABOB, LAURASIA, RUM TUM	SHOWING
105M 007	MONUMENT	SHOWING
105M 009	APEX	SHOWING
105M 013	MO	SHOWING
105M 015	HOGAN	SHOWING
105M 042	HOTSPRING	SHOWING
105M 047	MT. ALBERT	SHOWING
105M 048	MCKIM	SHOWING
105M 050	NERO	SHOWING
105M 053	AVENUE	SHOWING
105M 055	YONO	SHOWING
105M 057	GUSTAVUS	SHOWING
105M 061	CHRISTAL, DOROTHY	SHOWING
105M 073	BEMA	SHOWING
105N 010	DEAN	SHOWING
105N 012	BLOOM	SHOWING
105O 007	ART	SHOWING
105O 012	ARROWHEAD	SHOWING
105O 016	STANDARD	SHOWING
105O 039	OLD CABIN	SHOWING
105O 048	NUKE	SHOWING
105O 059	SCRONK	SHOWING
106B 013	ECONOMIC	SHOWING
106C 084	GOODFELLOW	SHOWING
106C 089	CROM	SHOWING
106D 013	STAND-TO	SHOWING
106D 030	LUCKY STRIKE, QCQUESTON PASS	SHOWING
106D 037	WHITE HILL	SHOWING
106D 091	DAVIDSON	SHOWING
106D 093	ZAHN	SHOWING
106D 095	WALLACE	SHOWING
115H 044	POWER	SHOWING
115I 043	COMBO	SHOWING
115I 117	DIC	SHOWING
115J 005	PRIDE, VEE, LOBO, LILYPAD	SHOWING
115J 022	RUDE CREEK, GRUBSTAKE, READY BULLION, DISCOVERY	SHOWING
115J 023	NORDEX, CAPE, RAY, PASS	SHOWING
115J 070	MARQUERITE, SUN, ARM, CARLO, FOLLY, FREDS, MAR	SHOWING
115J 099	IDAHO	SHOWING
115N 027	SANTA	SHOWING
115O 014	BLACK FOX	SHOWING
115P 002	SEATTLE	SHOWING
115P 007	SPRAGUE, MAHTIN	SHOWING
115P 010	RIDGE, STERLING	SHOWING
115P 016	MOOSE RIDGE	SHOWING
115P 024	BOULDER	SHOWING
116A 021	PHILIP	SHOWING
116A 025	MATTAGAMI	SHOWING
116A 033	BEAR, AREA ONE, CIRQUE LAKE	SHOWING
116B 063	CHAPMAN, BOO, JIM, DIDLO	SHOWING
116C 019	MILLER	SHOWING
116C 034	JOLLY, SILVER KING, SILVER QUEEN	SHOWING
116C 135	CHOLACH	SHOWING
116H 050	CUNG	SHOWING
116I 064	TOUCHE	SHOWING
105B 051	RAINBOW, LIARD	ANOMALY
105B 077	PYKE, COM	ANOMALY
105B 109	OAKE	ANOMALY
105B 135	GOLDEX	ANOMALY
105C 016	MOOSE HILL	ANOMALY
105C 030	MUSKRAT	ANOMALY
105D 154	INTO	ANOMALY
105M 022	FISHER	ANOMALY
105M 033	LAYSIER	ANOMALY
105N 017	FLATASA	ANOMALY
106D 014	FORBES	ANOMALY
106D 029	LYNX	ANOMALY
115F 093	WEBSTER	ANOMALY
115J 020	HAXE	ANOMALY
115O 074	LEOTTA	ANOMALY
115O 079	FORK	ANOMALY
115P 001	JAYBEE	ANOMALY
116B 059	ROBERT SERVICE	ANOMALY
116N 012	SUNAGHUN	ANOMALY
105B 023	SNOW, SAB	UNKNOWN
105D 052	HAECKEL	UNKNOWN
105H 004	COX	UNKNOWN
105M 065	NADAR	UNKNOWN
105N 009	PEBBLE	UNKNOWN
115P 035	CLEMENT	UNKNOWN



Map of Yukon showing polymetallic vein occurrences and the distribution of plutonic rocks



Map of the Keno Hill region, central Yukon showing polymetallic vein occurrences, plutonic rocks and the Keno Hill Quartzite