

INTRODUCTION

New geochemical data from re-analysis of archived stream sediment samples have been assessed using weighted sums modeling (WSM) and catchment basin analysis as described in the methodology report that accompanies this map (Mackie et al., 2015). In addition to a series of maps displaying WSM results, a catchment map of stream water pH has also been constructed.

SAMPLING AND ANALYSIS PROGRAMS

Stream sediment and water samples from the Klutane Lake area (NTS 115F and part of 115G) were collected at a reconnaissance scale in 1986 as part of the Canada-Yukon Mineral Resource Development Cooperation Agreement (Geological Survey of Canada, 1987). Field descriptions and initial geochemical data for 1005 sites were released in Geological Survey of Canada (GSC) Open File 1362. New geochemical data from the re-analysis of archive sample material from 699 sites were released in Yukon Geological Survey (YGS) Open File 2012-15 (Jackman, 2015). The reader is referred to these reports for detailed descriptions of sampling techniques, analytical procedures and quality control measures.

MINERAL OCCURRENCES

A variety of types of base and precious-metal mineralization are known to occur in the Klutane Lake area as shown in Table 1 (Yukon MINFILE, 2015). The most significant deposits are classed as Cu-Ni-PGE (Wellgreen and Canalask deposits), Cu-Mo porphyry (Rockslide and Raft prospects), Cu skarn (Arm and Az prospects) and quartz vein Au (Berdahl prospect). The adjacent map area to the east (Ashihik Lake) contains several quartz vein-related Au occurrences (Morn, Shut and Lib prospects) that form a trend that projects towards the southeast corner of the Klutane map area supporting the prospectivity of the region for this type of mineralization.

STREAM WATER pH

As indicated in Figure 1, stream water pH shows a bimodal distribution with peaks at approximately 6.5 and 7.5. The two populations broadly correspond to sample catchments containing dominantly felsic-intermediate intrusions (relatively low pH) and mafic-ultramafic intrusions, mafic-felsic volcanic and sedimentary rocks (relatively high pH), respectively. Stream samples with mineral occurrences in the corresponding catchment are not notably acidic suggesting any response from oxidation of near-surface sulphides related to these occurrences has been diluted or neutralized.

Figure 1: Stream water pH

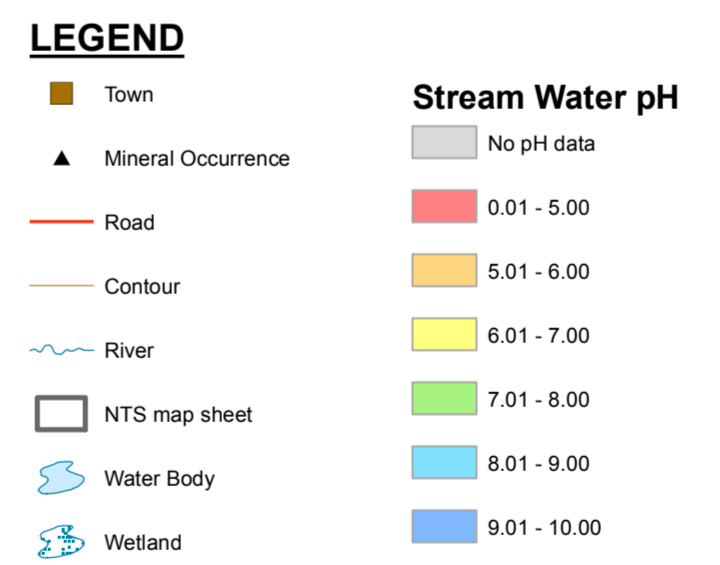
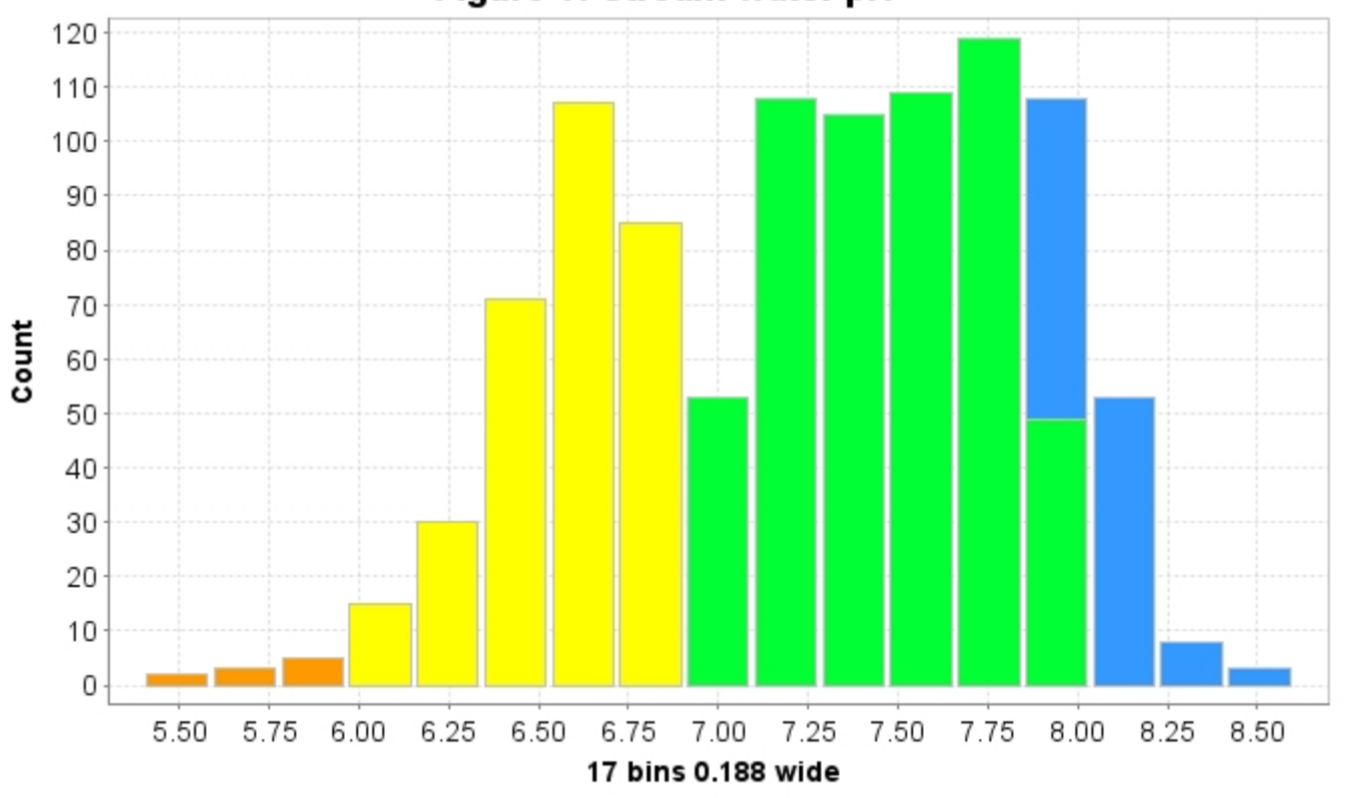


Table 1: List of Mineral Occurrences for NTS map sheet 115F and 115G (Yukon MINFILE, 2015)

Number	Name	Type	Status	Commodities
115F 030	SHARPE	Porphyry Cu-Mo-Au	Showing	Copper, Gold, Molybdenum, Silver
115F 031	CALLOPINS	Porphyry Cu-Mo-Au	Showing	Molybdenum
115F 032	ICE FIELD	Porphyry Mo (Low F-Type)	Anomaly	Copper, Molybdenum
115F 034	GARLIK	Porphyry Cu-Mo-Au	Prospect	Copper, Molybdenum, Platinum, Palladium, Gold
115F 038	HANNIKS	Unknown	Unknown	
115F 037	KOCHERN	Unknown	Unknown	
115F 038	LIBERTY	Vein Cu-Ag-Quartz	Showing	Copper, Gold, Lead
115F 039	OSBEC	Unknown	Anomaly	
115F 041	CATS AND DOGS	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Copper, Gold, Nickel, Palladium, Platinum
115F 042	MEMCO	Skarn Cu	Showing	Copper
115F 043	PECHAVANDE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper, Nickel
115F 044	SEVENSNA	Ultramafic Mafic Gabbro Cu-Ni-PGE	Anomaly	
115F 045	CANALASK	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Cobalt, Platinum, Palladium, Nickel, Molybdenum, Copper
115F 047	EPIC	Ultramafic Mafic Gabbro Cu-Ni-PGE	Prospect	Cobalt, Platinum, Nickel, Palladium, Platinum, Copper
115F 048	ARM	Skarn Cu	Drilled Prospect	Copper, Gold
115F 049	SANPETE	Skarn Cu	Prospect	Copper
115F 050	MEMIDAY	Skarn Cu	Drilled Prospect	Wollastonite
115F 051	AZ	Skarn Cu	Drilled Prospect	Copper, Gold, Silver
115F 053	RAJ	Unknown	Anomaly	
115F 054	MEMORR	Coal	Showing	Coal
115F 055	MCKELLAN	Coal	Showing	Coal
115F 056	RABBIT	Vein Cu-Ag-Quartz	Drilled Prospect	Copper, Silver
115F 057	LEP	Skarn Cu	Drilled Prospect	Copper, Silver, Zinc
115F 059	WHITE RIVER	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper, Silver
115F 060	SHARE	Volcanogenic Subvolcanic - type not determined	Drilled Prospect	Copper
115F 061	KULESAN	Vein Cu-Ag-Quartz	Showing	Copper
115F 067	CANYON MOUNTAIN	Porphyry Cu-Mo-Au	Showing	Copper, Gold
115F 063	WEEBSTER	Vein Polymetallic Ag-Pb-Zn-Au	Anomaly	Arsenic, Gold, Silver, Zinc, Lead, Copper
115F 073	HAWLAY	Unknown	Anomaly	
115G 001	ME TALLINE	Sediment hosted bedded Gypsum	Anomaly	Copper, Gypsum
115G 002	STONE	Coal	Prospect	Coal
115G 003	CONDON	Ultramafic Mafic Gabbro Cu-Ni-PGE	Prospect	Cobalt, Nickel, Platinum, Zinc, Copper, Gold
115G 004	MALLER	Porphyry Cu-Mo-Au	Anomaly	Molybdenum
115G 005	DICKSON	Ultramafic Mafic Gabbro Cu-Ni-PGE	Prospect	Cobalt, Nickel, Platinum, Copper, Nickel, Platinum
115G 006	DESTRUCTION	Ultramafic Mafic Gabbro Cu-Ni-PGE	Prospect	Cobalt, Nickel, Platinum, Copper
115G 007	COPPER JOE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Unknown	
115G 008	SQUIBBLE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Unknown	
115G 009	WINDGAP	Coal	Prospect	Coal
115G 010	DUNN	Ultramafic-hosted asbestos	Showing	Asbestos, Silver, Gold
115G 011	HOGE	Coal	Prospect	Fluor Carbon
115G 012	AMPHITHEATRE	Coal	Showing	Coal
115G 013	WAGE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Anomaly	Copper, Gold, Silver
115G 014	AMP	Porphyry Cu-Mo-Au	Anomaly	Copper
115G 015	CORAK	Porphyry Cu-Mo-Au	Drilled Prospect	Copper, Molybdenum
115G 016	GLEN	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Cobalt, Nickel, Gold
115G 017	BURWASH	Volcanogenic Massive Sulphide (VMS) Beash Cu-Zn	Drilled Prospect	Gold, Zinc, Silver
115G 018	LAKLOTT	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper, Gold, Silver
115G 020	VUG	Unknown	Unknown	
115G 021	DULE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper
115G 022	VERSILICE	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper
115G 023	CALLINAN	Unknown	Unknown	
115G 024	WELLGREEN	Ultramafic Mafic Gabbro Cu-Ni-PGE	Deposit	Copper, Osmium, Cobalt, Ruthenium, Rhodium, Platinum, Palladium, Nickel, Indium, Gold
115G 025	ARWAYS	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper, Nickel, Platinum, Palladium, Gold
115G 026	MCKEETTER	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Copper, Nickel, Platinum, Palladium, Gold
115G 027	SWEDDE JOHNSON	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Copper, Nickel, Platinum, Palladium, Gold
115G 028	CEMENT	Coal	Showing	Coal
115G 029	ST. ELIAS	Vein Mo	Showing	Molybdenum
115G 033	SEXSMITH	Ultramafic Mafic Gabbro Cu-Ni-PGE	Drilled Prospect	Copper, Platinum, Gold
115G 035	NOX	Unknown	Anomaly	
115G 052	BOITARD	Unknown	Anomaly	
115G 062	DONKEX	Unknown	Anomaly	
115G 063	ELEVEN THIRTY	Skarn W	Showing	Tungsten
115G 064	KENNEDY	Skarn W	Showing	Tungsten
115G 065	TINCLIP	Ultramafic-hosted asbestos	Drilled Prospect	Asbestos
115G 066	NUNTAEA	Ultramafic-hosted asbestos	Anomaly	Asbestos
115G 067	DOOPACK	Unknown	Anomaly	
115G 068	BROOKS	Skarn Mo	Showing	Molybdenum
115G 069	TALBOT	Porphyry Cu-Mo-Au	Showing	Copper
115G 070	RAFT	Porphyry Cu-Mo-Au	Drilled Prospect	Copper, Molybdenum, Tungsten
115G 071	ROCKSLIDE	Porphyry Cu-Mo-Au	Drilled Prospect	Copper, Molybdenum, Tungsten
115G 072	NORTH STAR	Porphyry Mo (Low F-Type)	Anomaly	
115G 073	BEE	Porphyry Mo (Low F-Type)	Anomaly	
115G 074	ALASKITE	Porphyry Mo (Low F-Type)	Anomaly	Copper, Molybdenum
115G 075	TRINELLE	Porphyry Cu-Mo-Au	Anomaly	Copper, Molybdenum
115G 076	DWARF	Porphyry Mo (Low F-Type)	Showing	Copper, Molybdenum
115G 077	BIRCH	Skarn Cu	Showing	Copper, Molybdenum
115G 078	BRUMMER	Unknown	Showing	Copper, Zinc
115G 079	RHYOLITE	Porphyry Cu-Mo-Au	Drilled Prospect	Copper, Molybdenum
115G 080	NICK	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Nickel
115G 081	EASTER	Unknown	Unknown	
115G 082	ALTE	Unknown	Unknown	
115G 083	CULLUS	Unknown	Unknown	
115G 084	BOCK	Ultramafic Mafic Gabbro Cu-Ni-PGE	Showing	Cobalt, Gypsum, Copper, Nickel, Platinum, Palladium
115G 085	MAPLE	Sediment hosted bedded Gypsum	Showing	Gypsum
115G 086	COPPER	Sediment hosted bedded Gypsum	Showing	Gypsum
115G 088	LYNX CREEK	Unknown	Anomaly	
115G 089	FREIBERG	Volcanogenic Massive Sulphide (VMS) Kurat Cu-Pb-Zn	Showing	Copper
115G 090	ROBERTSON	Unknown	Anomaly	
115G 091	ELIAS	Unknown	Anomaly	
115G 092	BIGZOK	Paleoproterozoic	Anomaly	Cobalt, Gold, Copper, Indium, Ruthenium, Rhodium, Platinum, Palladium, Osmium, Nickel
115G 094	LINDA	Ultramafic Mafic Alaskan-type P14/Cs+1/Rb+1	Drilled Prospect	
115G 095	ARBY	Unknown	Unknown	
115G 096	HUXYUK	Unknown	Unknown	
115G 097	LONTH	Unknown	Anomaly	
115G 098	TONEY	Ultramafic Mafic Alaskan-type P14/Cs+1/Rb+1	Showing	Copper, Nickel, Platinum
115G 099	KILLANE	Unknown	Showing	Copper, Platinum, Nickel, Palladium
115G 100	WASH	Ultramafic Mafic Alaskan-type P14/Cs+1/Rb+1	Drilled Prospect	Copper, Platinum, Palladium, Nickel
115G 101	TAL	Unknown	Unknown	
115G 102	TRIMBLAY	Vein Cu-Ag-Quartz	Unknown	Copper, Silver, Gold
115G 104	AJRI	Unknown	Anomaly	
115G 105	COFER	Unknown	Unknown	
115G 106	BERDHAL	Vein Au-Quartz	Prospect	Gold
115G 107	LAKE	Unknown	Unknown	

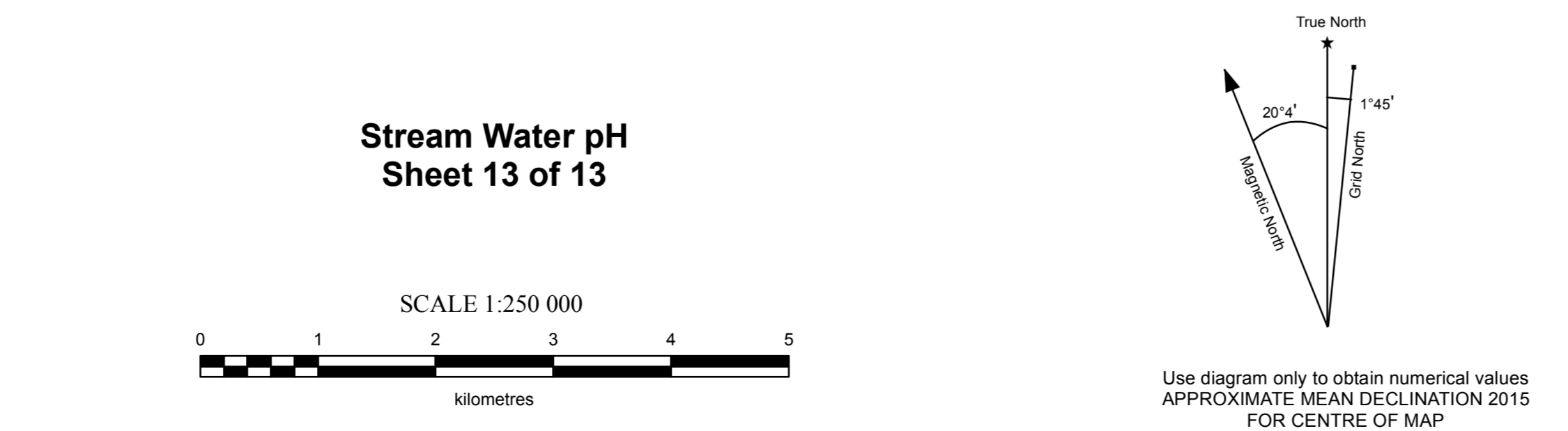
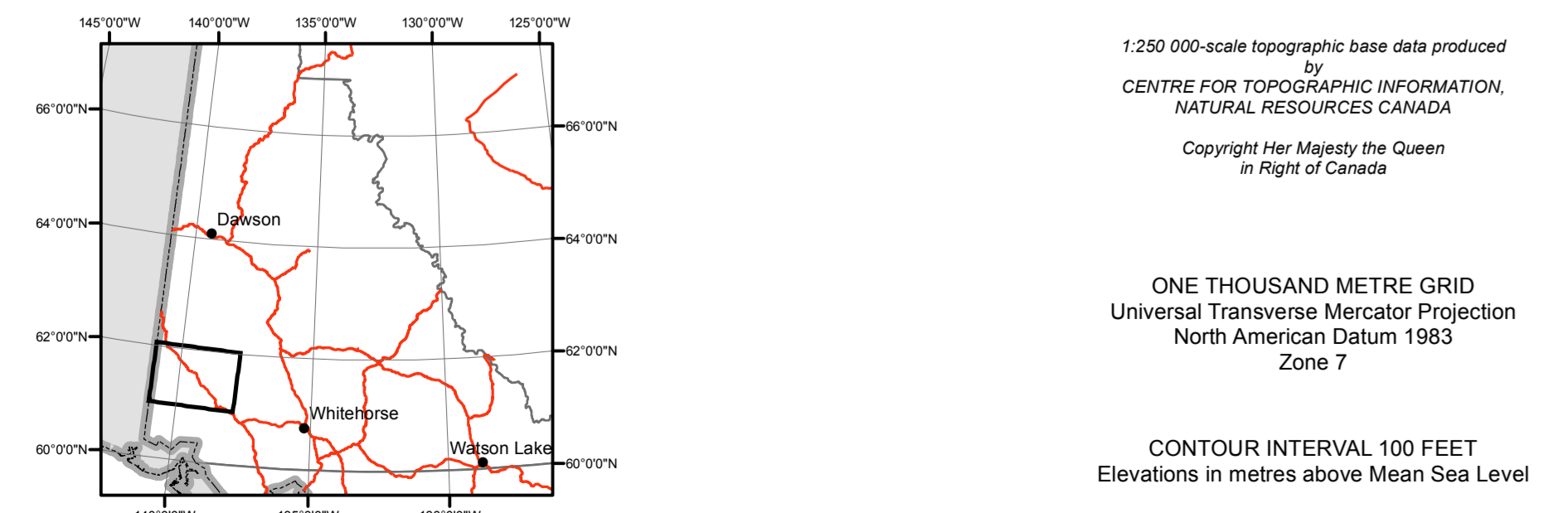
RECOMMENDED CITATION

MACKIE, R., ARNE, D. AND PENNIMPEDE, C., 2016. Stream water pH. In: Enhanced interpretation of stream sediment geochemical data for NTS map sheet 115F and 115G. Yukon Geological Survey, Open File 2016-13, scale 1:250 000, sheet 13 of 13.

Catchment basin polygons generated by the Yukon Geological Survey (J. O. Bruce). Any revisions or additional geological information known to the user would be welcomed by the Yukon Geological Survey.

Paper copies of this map and the accompanying report may be obtained from the Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, Room 102-300 Main St., Whitehorse, Yukon, Y1A 2B5. Ph. 867-667-3201, Email geology@gov.yk.ca.

A digital PDF (Portable Document File) file of this map may be downloaded free of charge from the Yukon Geological Survey website: <http://www.geology.gov.yk.ca>.



115K	115J	115I
PART OF 115K	STEVENSON RIDGE	CAMRACKS
115F	115G	115H
THIS MAP	THIS MAP	ASHIHIC LAKE
115C	115B	115A
PART OF 115B	MOUNT ST. ELIAS	DEZADASH RANGE

REFERENCES

Geological Survey of Canada, 1987. Regional Stream Sediment and Water Geochemical Reconnaissance Data, Yukon (115F & 115G). Geological Survey of Canada, Open File 1362.

Jackman, W., 2012. Regional Stream Sediment Geochemical Data, Klutane Lake Area, southwest Yukon (NTS 115F and 115G). Yukon Geological Survey, Open File 2012-15.

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Yukon MINFILE, 2015. Yukon MINFILE – A database of mineral occurrences. Yukon Geological Survey, www.data.geology.gov.yk.ca, accessed May 2015.