

### 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 were collected from the Lansing Range area (NTS 105N) in 1990 and the original geochemical data, including stream water pH, was released in Geological Survey of Canada Open File 2363 (Friske *et al.*, 1991). Archived sample material was re-analyzed for Bi and Se as reported in GSC Open File 3685 (Friske *et al.*, 1998). Subsequently, the samples were re-analyzed by ICP-MS and these new geochemical data were released in GSC Open File 6272/YGS Open File 2009-27 (Day *et al.*, 2009). The reader is referred to these open files for detailed descriptions of sampling techniques, analytical procedures and quality control measures.

### MINERAL OCCURRENCES

A variety of base and precious-metal deposit types have been documented in NTS map sheet 105N as shown in Table 1 (Yukon MINFILE, 2015). The Inca and Plata polymetallic Ag-Pb-Zn ( $\pm$ Au) deposits are located near the eastern edge of the map area. Additionally, Cu ( $\pm$ Ag) vein type (Joy, Dean, Cartier and Etzel showings), sedimentary exhalative Pb-Zn-Ag (Kidd Prospect) and W skarn mineralization (Tongue Prospect) have been discovered. In the adjacent map area to the north (106C), Carlin-type gold (Rackla Gold Project of Atac Resources Ltd.) and Mississippi Valley-type Pb-Zn-Ag mineralization (Craig Deposit) is noted. Other types of deposits in the region include Cu skarn (Golf Showing), Zn-Pb-Cu volcanogenic massive sulphide (Marg Deposit) and various types of gold mineralization, such as unclassified quartz-vein hosted/related (Cynthia and Cache Creek prospects; Berdahl showing) and intrusion-related (LM and Niddery Prospects).

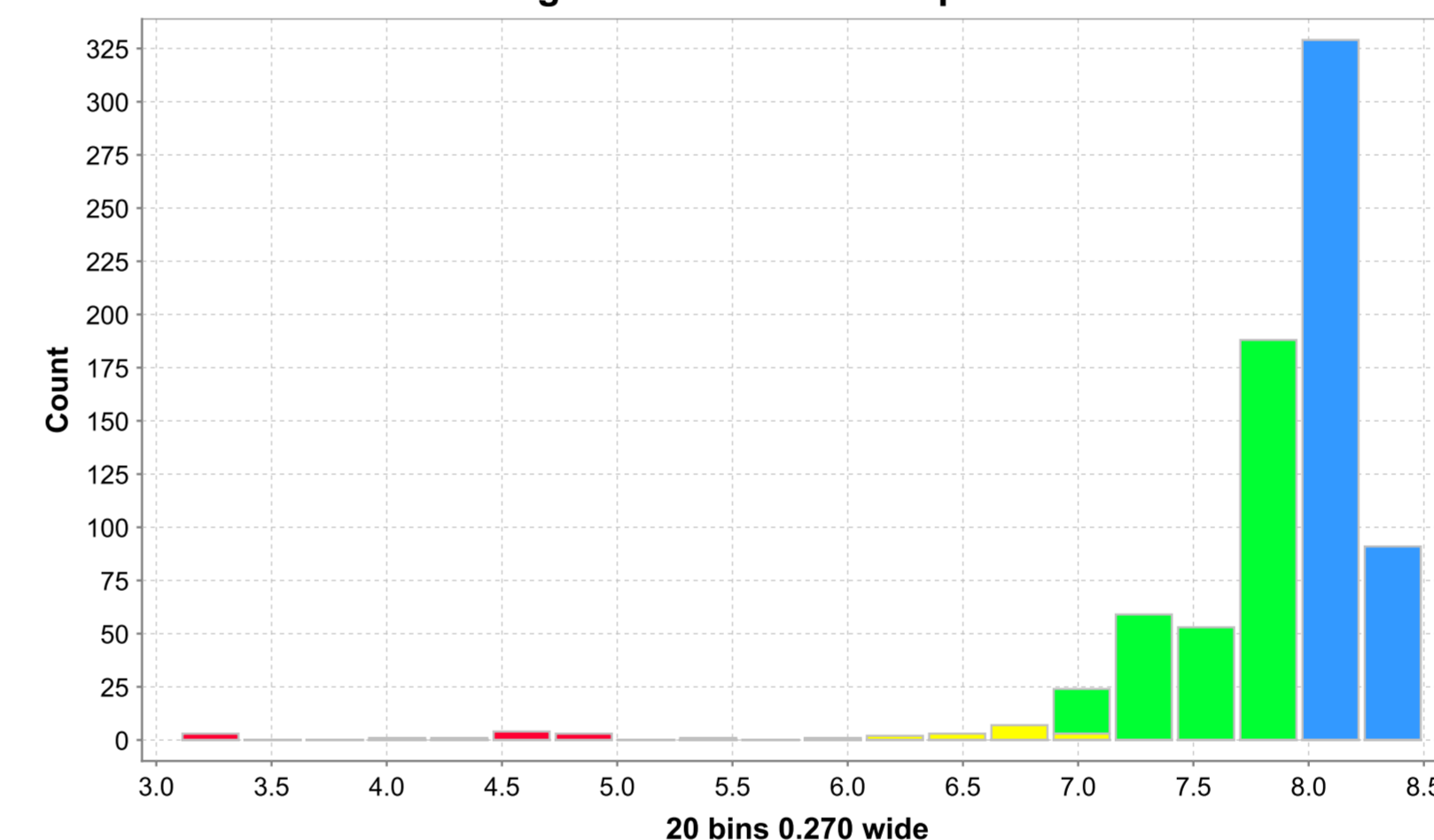
### STREAM WATER pH

As shown in Figure 1 the vast majority of the streams sampled are mildly alkaline (median pH = 8). Comparison of the location of known occurrences and stream water pH shows no consistent relationship suggesting, in most instances, any response from oxidation of near-surface sulphide mineralization has been diluted or neutralized. However, streams in the vicinity of the Berdahl Au and Flataza Ag-Pb-Zn occurrences in the northern and eastern part of the map area are moderately acidic (pH <5).

**Table 1: List of Mineral Occurrences for NTS map sheet 105N (Yukon MINFILE, 2015)**

Number	Name	Type	Status	Commodities
105N 001	HUGO	Unknown	Anomaly	Zinc
105N 002	ARMSTRONG	Vein and Greisens Sn	Anomaly	Gold, Tin, Tungsten, Lead
105N 003	PLATA	Vein Polymetallic Ag-Pb-Zn±Au	Deposit	Lead, Gold, Silver, LEAD + ZINC, Zinc, Cobalt, Copper, Cadmium, Zinc, Manganese, Nickel
105N 004	ROGUE	Unknown	Anomaly	Copper
105N 005	JOY	Vein Cu±Ag Quartz	Anomaly	Copper
105N 006	GOLF	Skarn Cu	Showing	Copper, Gold
105N 007	ETZEL	Vein Cu±Ag Quartz	Showing	Copper, Silver, Zinc, Lead
105N 008	CARTIER	Vein Cu±Ag Quartz	Showing	Lead
105N 009	PEBBLE	Vein Polymetallic Ag-Pb-Zn±Au	Unknown	Copper, Lead, Silver, Molybdenum
105N 010	DEAN	Vein Polymetallic Ag-Pb-Zn±Au	Showing	Lead
105N 011	AUREOLE	Vein Cu±Ag Quartz	Showing	Copper
105N 012	BLOOM	Vein Polymetallic Ag-Pb-Zn±Au	Showing	Copper, Lead, Silver, Tungsten, Zinc, Gold
105N 013	PLEASANT	Skarn W	Showing	Copper, Tungsten
105N 014	TONGUE	Skarn W	Drilled Prospect	Zinc
105N 015	KIDD	Sediment hosted Sedimentary Exhalative Zn-Pb-Ag (Sedex)	Prospect	Barite
105N 016	ANDREA	Sediment hosted Stratiform Barite	Prospect	Lead, Silver
105N 017	FLATASA	Vein Polymetallic Ag-Pb-Zn±Au	Anomaly	Barite, Copper, Zinc
105N 019	DOG	Vein Barite	Showing	Barite
105N 020	JAGOWERITE	Vein Barite	Showing	Barite, Zinc
105N 022	FIDO	Sediment hosted Stratiform Barite	Anomaly	Antimony, Silver, Zinc, Arsenic, Gold
105N 024	BERDAHL	Unknown	Showing	Copper, Gold, Silver
105N 031	THUNDERHEAD	Vein Cu±Ag Quartz	Anomaly	Gold
105N 032	END OF THE	Plutonic Related Au	Showing	
105N 030	ROOTS	Sediment hosted Stratiform Barite	Showing	
105N 023	KEG	Sediment hosted Sedimentary Exhalative Zn-Pb-Ag (Sedex)	Anomaly	
105N 026	PLEASURE	Sediment hosted Shale-Hosted Ni-Zn-Mo-PGE (Nick)	Unknown	
105N 028	CDN	Unknown	Unknown	
105N 025	ROG	Unknown	Anomaly	
105N 018	STRIP	Unknown	Unknown	
105N 029	ABBOTT	Sediment hosted Stratiform Barite	Showing	

Figure 1: Stream Water pH



### LEGEND

- Town
- Mineral Occurrence
- Road
- Contour
- River
- Water Body
- Wetland
- Sample Location
- Catchment
- Stream Water pH
  - No pH data
  - 0.01 - 5.00
  - 5.01 - 6.00
  - 6.01 - 7.00
  - 7.01 - 8.00
  - 8.01 - 9.00
  - 9.01 - 10.00

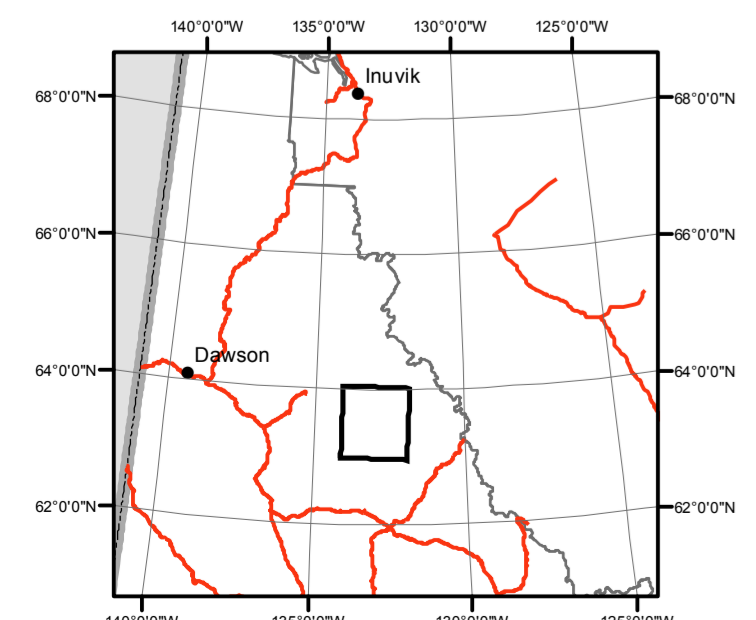
### RECOMMENDED CITATION

MACKIE, R., ARNE, D. AND PENNIMPEDE, C., 2015. Stream water pH. In: Enhanced interpretation of stream sediment geochemical data for NTS map sheet 105N. Yukon Geological Survey, Open File 2015-29, scale 1:250 000, Sheet 17 of 17.

Catchment basin polygons generated by the Yukon Geological Survey (J. O. Bruce).

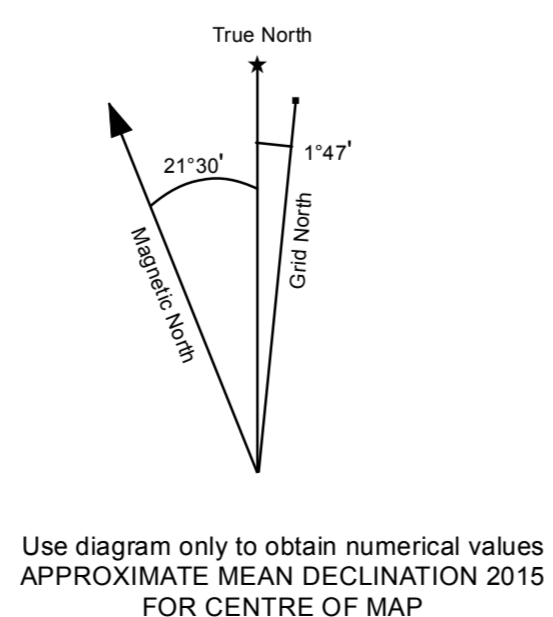
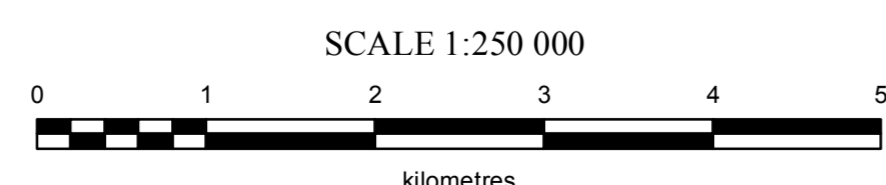
Any revisions or additional geological information known to the user would be welcomed by the Yukon Geological Survey.

Paper copies of this map and the accompanying report may be purchased 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.



1:250 000-scale topographic base data produced by CENTRE FOR TOPOGRAPHIC INFORMATION, NATURAL RESOURCES CANADA. Copyright Her Majesty the Queen in Right of Canada. ONE THOUSAND METRE GRID. Universal Transverse Mercator Projection. North American Datum 1983. Zone 8. CONTOUR INTERVAL 100 FEET. Elevations in metres above Mean Sea Level.

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106D NASH CREEK	106C MADALEEN RIVER	106B BONNET PLUME LAKE
105M MAYO	<b>105N THIS MAP</b>	105O NIDDERY LAKE
105L GLENLYON	105K TAY RIVER	105J SHELDON LAKE

### REFERENCES

Day, S.J.A., McCurdy, M.W., Friske, P.W.B., McNeil, R.J., Hornbrook, E.H.W., Lynch, J.J., Durham, C.C., Gross, H. and Galletta, A.C., 2009. Regional stream sediment and water geochemical data, Lansing Range area, east central Yukon (NTS 105N). Geological Survey of Canada, Open File 6272, Yukon Geological Survey, Open File 2009-27.

Friske, P.W., Day, S.J.A., Durham, C.C. and McCurdy, M.W., 1998. Regional stream sediment and water data, central Yukon (NTS 105M and 105N). Geological Survey of Canada, Open File 3685.

Friske, P.W.B., Hornbrook, E.H.W., Lynch, J.J., McCurdy, M.W., Gross, H., Galletta, A.C. and Durham, C.C., 1991. National Geochemical Reconnaissance stream sediment and water data, east central Yukon (NTS 105N). Geological Survey of Canada, Open File 2363.

Mackie, R., Arne, D. and Brown, O., 2015. Enhanced interpretation of regional stream sediment geochemical data from Yukon: catchment basin analysis and weighted sums modeling. Yukon Geological Survey, Open File 2015-10.

Yukon MINFILE, 2015. Yukon MINFILE – A database of mineral occurrences. Yukon Geological Survey, [www.data.geology.gov.yk.ca](http://www.data.geology.gov.yk.ca), accessed May 2015.

Yukon Geological Survey  
Energy, Mines and Resources  
Government of Yukon  
Open File 2015-29  
**Stream Water pH (NTS 105N)**  
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