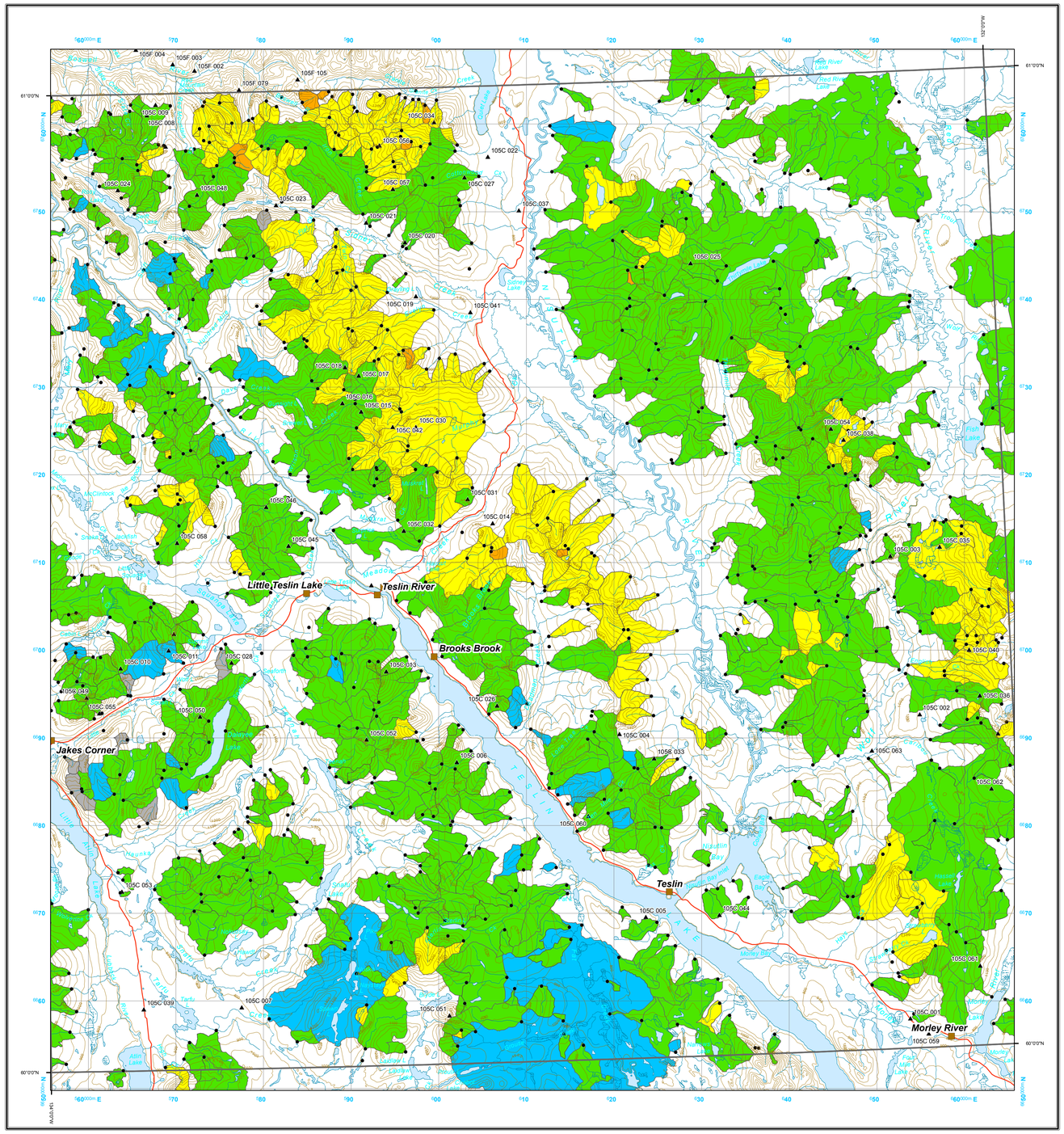





*1:250 000-scale topographic base data produced by CENTRE FOR TOPOGRAPHIC INFORMATION, NATURAL RESOURCES CANADA*

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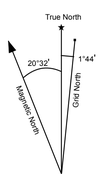
ONE THOUSAND METRE GRID
Universal Transverse Mercator Projection
North American Datum 1983
Zone 8

CONTOUR INTERVAL 100 FEET
Elevations in metres above Mean Sea Level

**Stream Water pH**
**Sheet 15 of 15**

SCALE 1:250 000

0 1 2 3 4 5
kilometres




Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 2015
FOR CENTRE OF MAP

| | | |
|---|---|---|
| 105E LAKE LABERGE | 105F QUIET LAKE | 105G FINLAYSON LAKE |
| 105D WHITEHORSE | 105C **THIS MAP** | 105B WOLF LAKE |
| 104M SKAGWAY | 104N ATLIN | 104O JENNINGS RIVER |

## 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 Teslin area (NTS 105C) were collected at a reconnaissance scale in 1985 as part of the Canada-Yukon Mineral Development Agreement (Geological Survey of Canada, 1986). Field descriptions and initial geochemical data, including stream water pH, for 865 sites were released in Geological Survey of Canada (GSC) Open File 1217. New geochemical data from the re-analysis of archive sample material were released in Yukon Geological Survey (YGS) Open File 2015-11 (Jackaman, 2015). Samples from sites located within currently protected areas were excluded from re-analysis. The current assessment examines only data for the 816 sites that are located outside of these protected areas and were selected for re-analyzed. 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 has been identified in the Whitehorse area as listed in Table 1 (Yukon MINFILE, 2015). Interestingly, the Teslin Area contains relatively few mineral occurrences compared to surrounding map areas. The most significant deposits are classed as porphyry Mo (Red Mountain deposit), polymetallic Ag-Pb-Zn (Slate prospect and Sawas showing), unclassified quartz-vein related Au (Dalayee prospect) and volcanogenic massive sulphide (More and Iron Creek showings). Other deposit types within the area include Cu skarn (Ork and Hyder showings) and W-Sn skarn (Mindy and Mulligan prospects). While magmatic Ni-Cu-PGE mineralization has not been document in the Teslin area, several mafic-ultramafic bodies have been mapped in the region suggesting at least some prospectivity for this deposit type.

## STREAM WATER pH

As shown in Figure 1, most of the streams sampled are neutral to slightly alkaline (median pH = 7.5). Regional trends in pH are evident and correspond with lithological variation. Stream water in areas underlain by felsic lithologies generally have a lower pH than those underlain by mafic lithologies. 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**

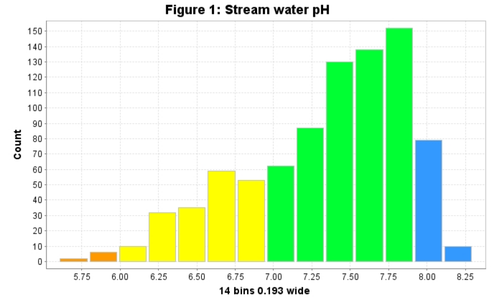
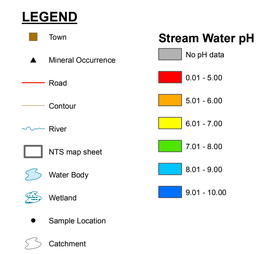



**Table 1: List of Mineral Occurrences for NTS map sheet 105C (Yukon MINFILE, 2015)**

| Number | Name | Type | Status | Commodities |
|---|---|---|---|---|
| 105C 002 | KITCHEN | Vein Polymetallic Ag-Pb-Zn±Au | Showing | Lead, Silver |
| 105C 003 | BAR | Sediment hosted Stratiform Barite | Drilled Prospect | Antimony, Barite, Mercury, Thallium, Zinc, Tin, Silver, Lead, Arsenic |
| 105C 004 | LINCOLN | Unknown | Anomaly | Uranium |
| 105C 008 | SLATE | Vein Polymetallic Ag-Pb-Zn±Au | Drilled Prospect | Lead, Molybdenum, Silver, Zinc |
| 105C 009 | RED MOUNTAIN | Porphyry Cu-Mo-Au | Deposit | Molybdenum Disulfide, Tungsten, Silver, Copper |
| 105C 010 | RIBA | Ultramafic-hosted asbestos | Showing | Asbestos |
| 105C 011 | SEAFORTH | Ultramafic-hosted asbestos | Showing | Asbestos |
| 105C 012 | SQUANGA | Ultramafic Mafic Podiform Chromite | Showing | Chromium, Palladium, Platinum |
| 105C 013 | HAYES PEAK | Ultramafic-hosted asbestos | Showing | Chrysotile, Lead, Copper, Silver |
| 105C 021 | IRON CREEK | Volcanogenic Sulphide - type not determined | Drilled Prospect | Copper, Silver, Zinc, Gold, Lead |
| 105C 022 | LINDSAY | Ultramafic Mafic Flood basalt-associated Ni-Cu | Drilled Prospect | Copper, Mercury, Silver, Nickel, Gold |
| 105C 023 | SIDNEY | Unknown | Anomaly | Copper |
| 105C 024 | ROSY | Vein Cu±Ag Quartz | Showing | Copper, Silver, Gold |
| 105C 025 | NISUTLIN | Unknown | Anomaly | Gold, Silver |
| 105C 026 | DEADMAN | Unknown | Anomaly | Lead, Silver |
| 105C 028 | DALAYEE | Vein Au-Quartz | Drilled Prospect | Chromium, Gold, Silver |
| 105C 029 | MCCLEERY | Skarn Cu | Showing | Cobalt, Fluorite, Tin, Silver, Copper |
| 105C 030 | MUSKRAT | Vein Polymetallic Ag-Pb-Zn±Au | Anomaly | Molybdenum |
| 105C 031 | LAMPERT | Unknown | Anomaly | Uranium |
| 105C 035 | ENGLISHMAN | Unknown | Showing | Lead, Uranium, Molybdenum |
| 105C 036 | MULLIGAN | Skarn W | Drilled Prospect | Gold, Silver, Tungsten, Tin |
| 105C 038 | MINDY | Skarn Sn | Drilled Prospect | Barite, Lead, Tin, Tungsten, Zinc, Silver |
| 105C 040 | BAS | Skarn Sn | Anomaly | Tin, Tungsten |
| 105C 045 | TES | Vein Cu±Ag Quartz | Drilled Prospect | Copper |
| 105C 047 | SAWAS | Vein Polymetallic Ag-Pb-Zn±Au | Showing | Arsenic, Gold, Silver |
| 105C 048 | TOO | Unknown | Anomaly | Arsenic, Gold |
| 105C 055 | EAGLENEST | Vein Au-Quartz | Showing | Antimony, Mercury, Silver, Barite, Gold |
| 105C 059 | HYDER | Unknown | Drilled Prospect | Copper, Silver, Zinc, Gold |
| 105C 061 | MOR | Volcanogenic Sulphide - type not determined | Showing | Copper, Lead, Zinc, Silver, Gold |
| 105C 062 | CARIBOU CREEK | Volcanogenic Sulphide - type not determined | Anomaly | Copper, Silver, Zinc, Gold, Lead |
| 105C 063 | WR | Unknown | Showing | Copper, Silver, Gold |
| 105C 017 | MARLIN | Sediment hosted Sedimentary Mn | Producer | Manganese, Rhodonite |
| 105C 018 | MT. GRANT | Vein Cu±Ag Quartz | Showing | Copper, Gold, Silver |
| 105C 054 | ORK | Skarn Cu | Prospect | Copper, Tin, Tungsten, Silver |
| 105C 016 | MOOSE HILL | Vein Polymetallic Ag-Pb-Zn±Au | Anomaly | |
| 105C 033 | EASTMAN | Unknown | Unknown | |
| 105C 042 | THOM | Vein Cu±Ag Quartz | Unknown | |
| 105C 056 | IRON | Unknown | Unknown | |
| 105C 019 | EVELYN | Unknown | Unknown | |
| 105C 020 | DRY | Unknown | Unknown | |
| 105C 058 | HOMBRE | Unknown | Unknown | |
| 105C 052 | THA | Unknown | Unknown | |
| 105C 060 | PAULA | Unknown | Unknown | |
| 105C 001 | MORLEY | Unknown | Unknown | |
| 105C 027 | QUIET | Unknown | Unknown | |
| 105C 037 | COYOTE | Unknown | Unknown | |
| 105C 032 | MEADOW | Unknown | Unknown | |
| 105C 005 | TESLIN | Unknown | Unknown | |
| 105C 007 | TARFU | Unknown | Drilled Prospect | |
| 105C 050 | TON | Unknown | Unknown | |
| 105C 006 | SIDNAW | Unknown | Unknown | |
| 105C 034 | BROPHY | Unknown | Unknown | |
| 105C 051 | BRENDON | Unknown | Unknown | |
| 105C 053 | HANNKA | Unknown | Unknown | |
| 105C 014 | HARCUT | Unknown | Unknown | |
| 105C 046 | BRAULT | Unknown | Unknown | |
| 105C 057 | BIG SALMON | Unknown | Unknown | |
| 105C 044 | SEARS | Unknown | Unknown | |
| 105C 043 | HENRY | Unknown | Unknown | |
| 105C 041 | PESHKE | Unknown | Unknown | |
| 105C 049 | NUF | Unknown | Anomaly | |
| 105C 015 | GUNSIGHT | Unknown | Unknown | |
| 105C 039 | LISA | 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 105C. Yukon Geological Survey, Open File 2016-12, scale 1:250 000, sheet 15 of 15.

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.

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Geological Survey of Canada, 1986. Regional Stream Sediment and Water Geochemical Reconnaissance Data, Yukon (105C). Geological Survey of Canada, Open File 1217.

Jackaman, W., 2015. Regional Stream Sediment Geochemical Data, Teslin Area, southern Yukon (NTS 105C). Yukon Geological Survey, Open File 2015-11.

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

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

Yukon Geological Survey
Energy, Mines and Resources
Government of Yukon

Open File 2016-12

# Stream Water pH (NTS 105C)
# Sheet 15 of 15

by

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and Chris Pennimpede