

Danièle Héon, P. Geo.

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PROFILE

Geologist with well rounded background: more than 25 years of a combination of mineral exploration industry, land-use, regional mapping, academic and educational experience.

Professional geologist (P. Geo) designation in British Columbia and Québec.

Experience in all phases of mineral exploration: from compilations and target definition through prospecting, reconnaissance and detailed sampling, property-scale mapping, to supervision of soil sampling, trenching and drilling programs; QAQC, data management and analysis, report writing, permitting and reporting to regulators, filing assessment work, logistical planning and support.

Mineral exploration experience in base metals, gold and industrial minerals. Exploration projects in the Canadian Cordillera, Precambrian Shield, Labrador Trough, Grenville Province, Superior Province, and eastern Alaska.

Professional, mature, conscientious, thorough reliable worker with proven ability at planning, organizing and conducting geological field mapping, managing and directing exploration programs, documenting, compiling and interpreting results, preparing geological reports and communicating results to technical and lay audiences.

Skilled at developing digital compilations of geoscientific data and refining exploration targets.

Well-developed verbal, written and graphic communication skills

Extensive experience in preparing and editing geological reports, maps and news releases. Production of digital and web- based products.

Experience in working with, and training of, local First Nation staff.

Knowledgeable in the Canadian exploration industry with over 25 years of professional geological experience.

Computer skills: Proficient with MS Office Suite (Power Point, Excel, Access, Word), ArcGIS, Adobe Acrobat XI Pro, Irfanview, CorelDraw and Weebly web design software.

Works well both in team setting and independently. Ability to perform under pressure of deadlines.

Fluent in written and spoken English and French.

Course work in conflict resolution.

RECENT PROJECTS

- Management of a drill program targeting a copper skarn (discovery of new mineralized zone).
- Assessment report writing and filing for various clients.
- Minfile Database update for Yukon Geological Survey.
- Copper Ridge / Redtail Metals Corp. Project management, targeting, compilations, reports.
- Yukon Mineral Incentive Program (YMIP): manage funding program of \$1.67M in grants supporting mineral exploration (placer and hardrock) in the Yukon. Develop new database, property visits, mentoring of prospectors.

MAIN ACHIEVEMENTS

MINERAL EXPLORATION

RESPONSIBILITIES

- Regional and property-scale compilations, target definition, project management, budgets, supervision and execution of reconnaissance and property scale mapping, prospecting, soil sampling, trenching and drilling programs. Reports and assessment filing. Successful YMIP applications. Permitting.
- Discovery of several new showings, one of which led to an extensive drill program.
- Recent drill programs: Whitehorse Copper Belt skarns, Pine Project (Toodoggone district, porphyry Cu, Goldfields Canada), Northern Freegold (Dawson Range/ central Yukon, porphyry Cu and epithermal Au- Cu), Logtung (porphyry W-Mo and skarn), Ketz River (manto Au), Grew Creek (epithermal Au), and Turnagain Nickel (Alaskan-type nickel sulphide, northern BC).

FIELD AREAS/ MINERAL DEPOSIT TYPES

- gold/base metal: Yukon, BC, Alaska and Abitibi. Mainly in Selwyn Basin sediments, Tombstone Belt intrusions, Dawson Range Belt, Whitehorse Copper Belt, Yukon Tanana Terrane, Noranda camp, as well as in Cordilleran ultramafic and mafic volcanic rocks.
- Targets have included: Fort Knox-type intrusion-related gold deposits in the Tintina gold belt, and Yukon Tanana terrane (includes intrusive- and sediment-hosted, replacement and skarn mineralization), VMS deposits in Yukon-Tanana terrane; high grade shear-related gold deposits (Mount Freegold, Mac Pass, Quartz Lake, Mt-Nansen, Abitibi Greenstone belt); porphyry Cu-Au (Mount Freegold, Toodoggone); volcanic-hosted Cu-Au mineralization (Abitibi Greenstone belts); epithermal gold (Mount Freegold, Grew Creek), Cu-Ni-PGE mineralization associated with mafic and ultramafic rocks (Wrangellia; Triassic of northern B.C.; Appalachian belt), greisen-type mineralization (eastern Alaska); gold-bearing mantos (Ketz River, YT), gold-bearing quartz veins in pelitic sequences (Anyox/ Bowser Basin assemblage, B.C.), emeralds (Yukon Tanana Terrane), Mo-W porphyry (Logtung), Cu skarn (Whitehorse Copper Belt).

- Reconnaissance mapping, prospecting and supervision of drilling program for gold and industrial minerals (mainly graphite) in amphibolite-grade metasediments and iron formations, Grenville Province and Labrador Trough (southern and northern Québec).

REGIONAL MAPPING

- Three years of regional mapping experience with YTG, assisting Don Murphy in the regional mapping of Western Selwyn Basin with an emphasis on structural geology and mineral occurrence documentation, mostly intrusive-related gold, lead and copper mineralization (Tombstone suite). Responsible for camp logistics, reports. Discovery of new showings, one of which has led to an extensive drilling program.
- Detailed mapping of pelitic sequences hosting gold-bearing quartz veins in outlier of Bowser Basin in Coast Plutonic Complex, at Anyox, BC. Discovery of new showings.
- Regional mapping (1:50 000) for the Geological Survey of Canada. Granitic and metasedimentary rocks of the Wopmay Orogen, near Great Bear Lake, N.W.T.
- Assisting in mapping and sampling of Archean to Quaternary mafic volcanic rocks in Ungava (northern Québec), Baffin Island, James Bay, British Columbia and the Yukon.

PROJECT SUPERVISION

- Supervision of field projects/ Responsible for field logistics
- Supervision of office staff: geologists and GIS support staff
- Drill supervision
- Training and mentoring of First Nation staff, students and prospectors.

DIGITAL AND WEB PRODUCTS

- Digital compilation of regional stream sediments geochemical database for the Yukon, thematic maps.
- Web page design: digital compilation of geology and metallogeny of Selwyn Basin with focus on SEDEX deposits. Includes text, tables, figures, links, statistical treatment of geochemical data, digital geochemical maps and supporting documentation. In collaboration with GIS staff.

MINERAL ASSESSMENTS

- Implementation of the mineral assessment program at Yukon Geology Program (YTG).
- Providing information on mineral values in the context of land-use planning, mainly for park planning and ongoing aboriginal land claim negotiations.
- Digital regional-scale and detailed compilations, data gap analysis, statistical treatment of regional RGS data, documentation of mineral occurrences, target definition, prospecting, mapping, study of mineral deposit models.
- Test areas for their potential for various deposit types, most importantly intrusion-related gold deposits (intrusive-hosted-gold, skarns, distal veins, etc), SEDEX, MVT and mantos. Discovery of several new showings.
- Leading of estimation workshops; production of mineral potential maps; public presentations and consultations; participation in land-use planning processes; presentations to senior bureaucrats, land claims negotiators and local boards and planning teams. Overseeing

contractors (regional silt sampling programs, Monte Carlo computer simulation for mineral assessments).

- Initiated and supervised the drafting of the Yukon Land Status Map, the first map to show all the different categories of Yukon land on one single layer.
- Initiated an annual meeting of land-use planning geologists during the Vancouver Round-Up.

PUBLIC EDUCATION

- Two public education publications on the geology of Whitehorse area.
- Lead interpreter for Great Canadian Mine Show- Yukon portion
- Occasional course instructor for local Prospector's course.
- Development of geological content for interpretive highway signs.
- Presentations to public, political staff and planning teams on geology and mineral potential.
- Field work for road guide to the geology of the Dempster Highway, Yukon (unpublished).

COMPUTERS

Proficient with Windows, Microsoft Office suite, Adobe Acrobat XI Pro, CorelDraw; ArcGIS, Irfanview, Weebly web design. Basic knowledge of Adobe Photoshop and Illustrator.

EDUCATION

- B.Sc. Geology, McGill University, 1984
- Various short courses on diverse mineral exploration models and mineral deposits field trips
- Course work towards a Certificate in Conflict Resolution, Justice Institute of B.C.
- Standard and Wilderness First Aid

PROFESSIONAL AFFILIATIONS

Member of APEG BC, member number 38518

Member of the Ordre des Géologues du Québec, member number 1510

Member of the Yukon Chamber of Mines

Member of the Society of Economic Geologists

PUBLICATIONS

PUBLIC INTEREST PUBLICATIONS

Héon, D. (comp), 2004. The Whitehorse Copper Belt, YT- An annotated geology map, 1:50 000. YGS Open File 2004-15. <http://data.geology.gov.yk.ca/Reference/DownloadProduct/38124>
Accompanying map: <http://data.geology.gov.yk.ca/Reference/DownloadProduct/38123>

Later released as booklet:

Héon, D. (comp), 2006. The Whitehorse Copper Belt, Yukon. A booklet to accompany YGS Open File 2004-15. Yukon Geological Survey. <http://data.geology.gov.yk.ca/Reference/DownloadProduct/16875>

K-L Services, Héon D. and Hicklin J., 2002. Whitehorse from above- A Guide to Haeckel Hill, published by Yukon Energy Corporation. <http://www.whitehorsetwalks.com/docs/haeckelEng.pdf>

On-line access to most publications listed below is available at YGS website (<http://data.geology.gov.yk.ca>) and EMR library website (<http://virtua.gov.yk.ca:8080/?theme=emr>) and searching for "Heon".

TECHNICAL PUBLICATIONS

Héon, D., 2006. Mineral Assessment of the Tombstone Study Area, Yukon. Yukon Geological Survey, Open File 2006-2.

Héon, D., 2006. Mineral Assessment of the Eagle Plain Study Area, Yukon. Yukon Geological Survey, Open File 2006-3.

Héon, D., 2006. Mineral Assessment of the Northern Kluane Wildlife Sanctuary, Yukon. Yukon Geological Survey, Open File 2006-4.

Héon, D. and Sax, K., 2006. Investigations of 2000 RGS survey Northern Yukon, Eagle Plains Ecoregion. Yukon Geological Survey, Open File 2006-15.

Héon, D., 2006. Isotope dating of lead-zinc occurrences in the Bonnet Plume area, Preliminary report, YGS Open file 2006-16.

Héon, D. (com.), 2003. Yukon Regional Geochemical Database 2003 - Stream sediment analyses. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada. (CD).

Héon, D. and Hart, C.J.R., 1998. Mineral Potential Map of the City of Whitehorse, Scale 1:30,000 map, Open File 1998-6.

Héon, D., 1997. Mineral assessment - City of Whitehorse. EMR Property File Collection, ARMC004871.

[Also: Mineral Assessment Map of Northern Yukon; Metallogeny of Selwyn Basin webpage (formerly at: www.geology.yk.ca/mapgallery); Land Status Map, Internal YTG publication.]

Murphy, D.C., Héon, D. and Hunt, J.A., 1996. Geological map of Clear Creek area, western Selwyn Basin, Yukon. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-1, 1:50 000 scale, replaces Open File 1993-1.

Murphy, D.C. and Héon, D., 1996. Geological map of Sprague Creek map area, western Selwyn Basin, Yukon, NTS 115P/15. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-2, scale 1:50 000, replaces Open File 1994-3.

Murphy, D.C. and Héon, D., 1996. Geological Map of Seattle Creek Area, Western Selwyn Basin, Yukon, NTS 115 P/16. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-3, scale 1:50 000, replaces Open File 1995-3.

Murphy, D.C. and Héon, D., 1994. Geology and mineral occurrences of Sprague Creek map area (115 P/15), western Selwyn Basin. In: Yukon Exploration and Geology 1993, Yukon Geology Exploration, Indian & Northern Affairs Canada/Department of Indian & Northern Development, Exploration & Geological Services Division, p. 29-46.

Murphy, D.C., Héon, D., and Hunt, J., 1993. Geological overview of Clear Creek map area (NTS 115P/14), western Selwyn Basin. In: Yukon Exploration and Geology 1992; Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division, p. 61-69.

RECENT ASSESSMENT REPORTS *Assessment reports still 'closed' may be available upon request.*

Héon, D., 2014. Assessment Report on the 2012 Geochemical Survey of the CH claims, NTS 115N/10.

Héon, D., 2013. Assessment Report on the 2012 and 2013 Geochemical Survey of the AU claims, NTS 115 O/ 13 and 14, AR 096538.

Héon, D., 2013. Assessment Report on the 2012 Geochemical Survey of the AB claims, NTS 115 N/15, AR 096532.

Héon, D., 2013. Assessment report on the 2012 drilling on North Star property, Whitehorse Copper Belt, NTS 105D/11, AR 96464.

Héon, D., 2013. Assessment report on the 2012 geochemical survey of the Hit claims, NTS 105 D/09, AR 96467.

Héon, D., 2011. Assessment report on the 2011 geochemical survey of the 4C East property, NTS 105 G/01, Redtail Metals Corp, AR 95894.

Héon, D., 2011. Assessment report on the 2011 geochemical survey of the AWB 1-116 claims, NTS 105 K/12, Redtail Metals Corp, AR 95850.

Héon, D., 2011., Assessment report on the 2011 geochemical survey of the Bolt property, NTS 105 G/08, Redtail Metals Corp, AR 95893.

Héon, D., 2011., Assessment report on the 2011 geochemical survey of the NBT 1 - 90 claims, NTS 116 B/06, Redtail Metals Corp , AR 96038.

Héon, D., 2011., Assessment report on the 2011 geochemical survey of the Salt 1 - 10 claims, NTS 105 H/06, Redtail Metals Corp, AR 95444.

Héon, D., 2011., Assessment report on the 2011 geophysical survey of the REK 1-320 claims, NTS 105L/14, Redtail Metals Corp, AR 96191.

EMPLOYMENT HISTORY

July 2012 – present	Self-employed. Clients include: H. Coyne & Sons, Midnight Mines, others.
Feb 2011- July 2012	Copper Ridge Expl./ Redtail Metals Corp., Whitehorse; Senior Geologist
Dec 2009- Jan 2011	Yukon Geological Survey; Yukon Mining Incentive Program (YMIP) geol.
May- Oct 2009	Goldfields Toodoggone Expl Corp, Vancouver; Geologist
March 2001- Dec 2008	Self-employed. Clients include: <u>Government and public interest:</u> Yukon Geology Program/ Yukon Geological Survey, DIAND Whitehorse, Yukon Chamber of Mines, Lost Moose Publishing. <u>Industry:</u> H. Coyne & Sons, Northern Freegold Resources, Hard Creek Nickel Corp., Midnight Mines, YGC Resources, Aurchem Exploration, Archer, Cathro & Associates, Solomon Resources, Freegold Ventures, Gartner Lee Ltd, Sherwood Copper.
April 95- Feb 2001	Government of Yukon (YTG), Whitehorse; Mineral Assessment Geologist
June 92-Feb 95	Canada-Yukon Geoscience Office, Whitehorse; Geologist.
April - June 92	Placer Dome Exploration, Whitehorse; Geologist.
May - Nov 91 and May - Dec 90	Noranda Exploration, Whitehorse; Project Geologist.
June- Dec 89	Explograph Inc, Montréal; Project geologist.
June- Dec 88	IREM-MERI, Montréal, Que.; Research associate.
Dec 87-Apr 88	Ressources Minières Sundust, Sherbrooke, Que.; Project Geologist.
March-Nov 87	Vior-Mazarin, Rouyn-Noranda, Que.; Project Geologist.
Nov 86-Feb 87	Ressources Minières Radisson, Rouyn-Noranda, Que.; Project Geologist.
Oct- Nov 86	Ressources Minières Normétal, Rouyn-Noranda, Que.; Geologist.
Dec 85-May 86	Bay Ressources et Services, Boucherville, Que; Project Geologist.
May - Aug 83	Geological Survey of Canada; Geologist.
May - Aug 85 May - Aug 84 May - Aug 82 May - Aug 81	McGill University, Montréal, QC.; Geological Assistant.
June - Aug 80	Baskatong Quartz, St-Urbain, QC.; geologist/surveyor.
June - Aug 79	Ministère des Richesses Naturelles du Québec, QC; silt sampler.
July 3, 2014	