



*Minerals North 2009*

*Fort St. James*

*Geoscience BC Update &  
2009 Planned Activities*

*Geoscience BC:  
British Columbia's  
Exploration Centre of Excellence*





# Geoscience BC

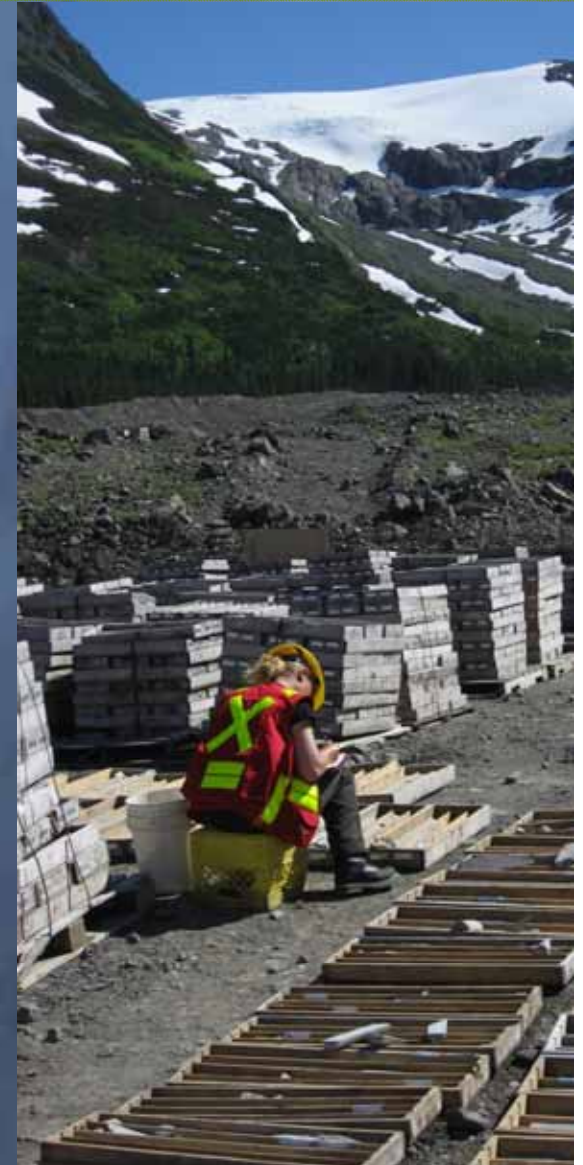
- Industry-led, industry-focused, non-government research organization:
  - collection, interpretation and delivery of applied geoscience data and expertise
  - promoting investment in resource exploration and development in BC
  - complementing the work of the B.C. Geological Survey and GSC
  - supporting and enhancing the critical mass of exploration expertise in BC
  - BC's Exploration Centre of Excellence
- Geoscience BC Team:
  - Volunteer Board of Directors
  - Volunteer Technical Advisory Committees
  - Project Team and Staff (NEW)





# Projects To-Date

- 47 Partnership Projects
  - GBC: \$6.6 Million
  - Matching: \$5.6 Million
  - 19 projects completed
- 3 Major Regional Projects –  
*all in partnership with Northern Development Initiative Trust*
  - QUEST
  - QUEST-West
  - Nechako Seismic





# GBC's Contributions to the Provincial Geoscience Knowledge Base



- **New Geophysical Data:**
  - >50, 000 line-km airborne gravity (2 km spacing) - QUEST and Q-W
  - > 25,000 line-km of time-domain EM (4 km) - QUEST and Q-W
  - Detailed TEM over 7 deposits, + ZTEM test - QUEST and Q-W
  - 330 line-km Vibroseis seismic data - Nechako Basin
  - High Res Airborne Mag + Radiometrics - Bonaparte Lake
  - 1:250K HRAM – Jennings River sheet
- **New Geochemical Data**
  - > 11,000 re-analyses of archived, drainage sediment samples
  - > 7,500 new drainage sediment samples collected and analyzed
  - Orientation studies over covered deposits
- **Student Training**
  - Numerous student theses projects and undergraduate training
  - 21 graduate student scholarships awarded
- **Industry Investment**
  - **Over 1 Million hectares of mineral claim staking stimulated by GBC projects and data releases**



# QUEST

- Quesnel Terrane
  - Airborne Gravity
  - Airborne EM
  - Geochemistry
- Funding Partner
  - Northern Development



*All data released in 2008,  
available on GBC's website  
& on MapPlace.ca*



# QUEST-West





# QUEST-West



- Partners:
  - Northern Development
  - Regional Districts
  - BC Geological Survey



- New Data:
  - Airborne Gravity
  - Airborne TEM and Magnetics
  - Geochemistry



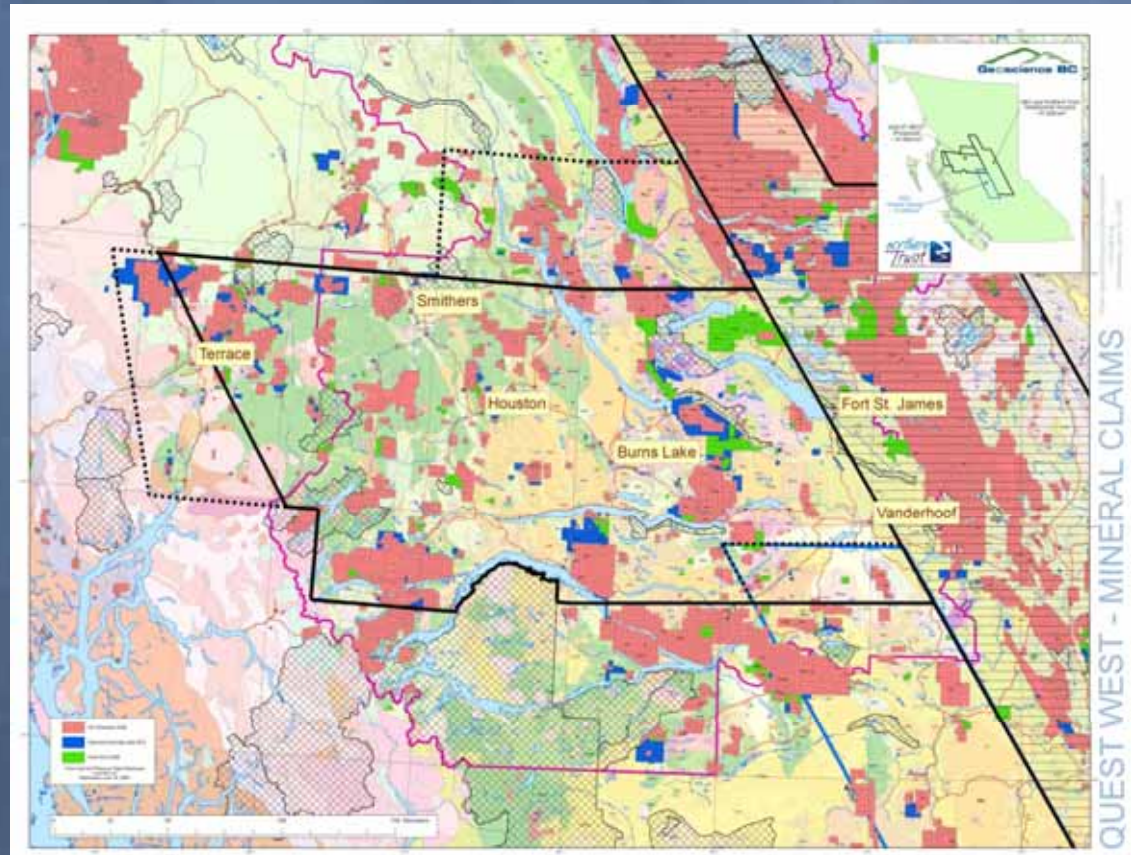
- Case Studies:
  - detailed TEM and magnetics on six deposits





# QUEST-West

- Strong community support
- Northern Development Initiative Trust grant to extend surveys to north and west
- Airborne surveys complete, Sander and Aeroquest
- Geochem survey complete, samples at lab for analysis, Noble Exploration and EcoTech Labs
- Partnership with BCGS on till geochemistry in Babine Lake area , data just released
- **RFP for follow-up projects issued April 8**





# QW Airborne Gravity

- photos courtesy of Owen Peterson, Sander Geophysics
- Contract to Sander Geophysics for 23,000 + line-km of airborne gravity





# Isostatically Corrected Gravity



1150N

1100N

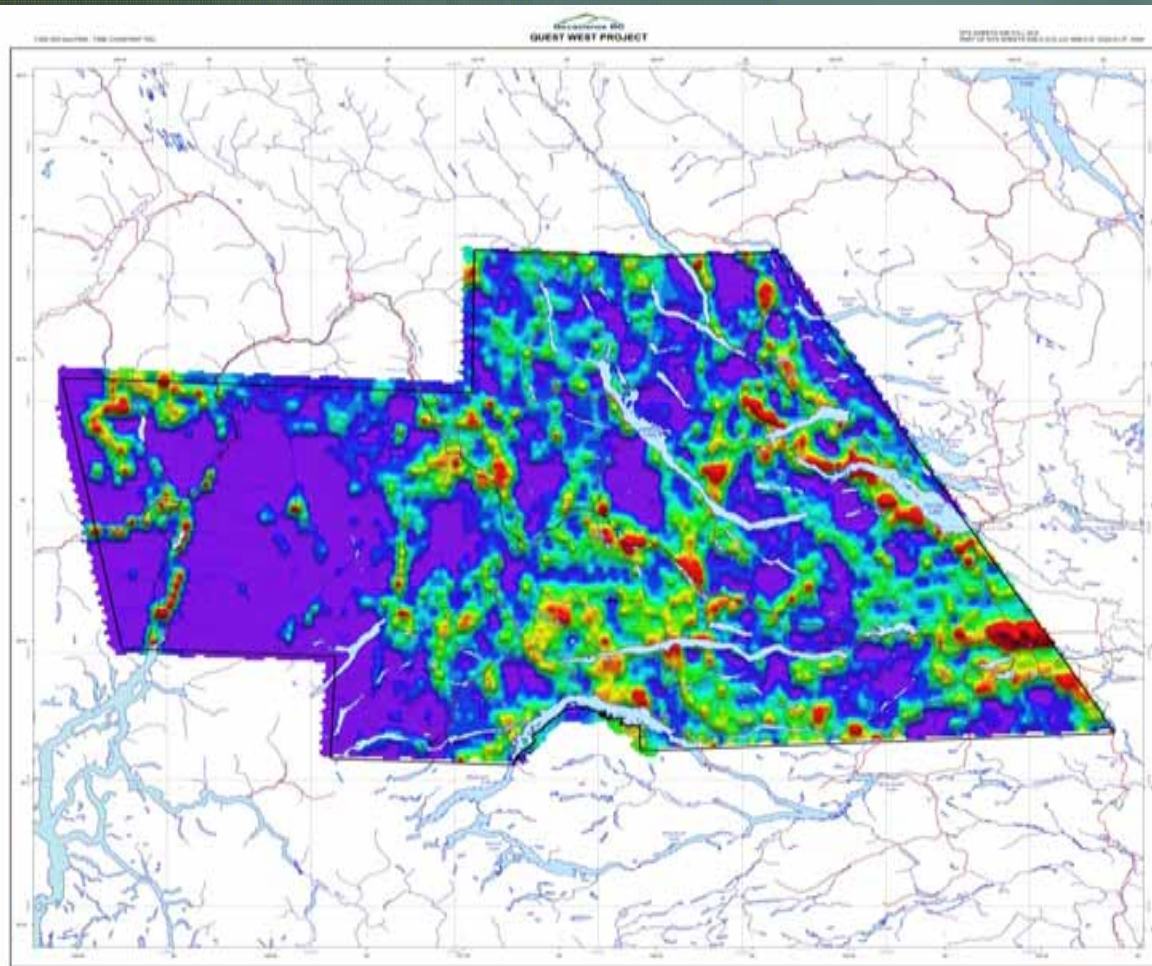
1050N

1000N





# QUEST-West TEM



QUEST WEST PROJECT  
Geophysics  
QUEST WEST PROJECT  
Geophysics  
QUEST WEST PROJECT  
Geophysics



GEOSCIENCE BC - QUEST-WEST - GEOPHYSICS

- regional survey at 4 km line-spacing, plus detail over 6 deposits, flown by Aeroquest International
- Data inversion coming "soon"
- Gary Tipper, Aeroquest

Image generated by BW Mining



## QUEST-West: Aeroquest 'AeroTEM' System



- Aeroquest's Time Domain Electromagnetic system, AeroTEM III, plus aeromagnetic sensor
- Helicopter-mounted
- Two systems on the survey
- Crew based out of a number of communities in the area: Smithers, Terrace, Houston, Burns Lake, Fort St James

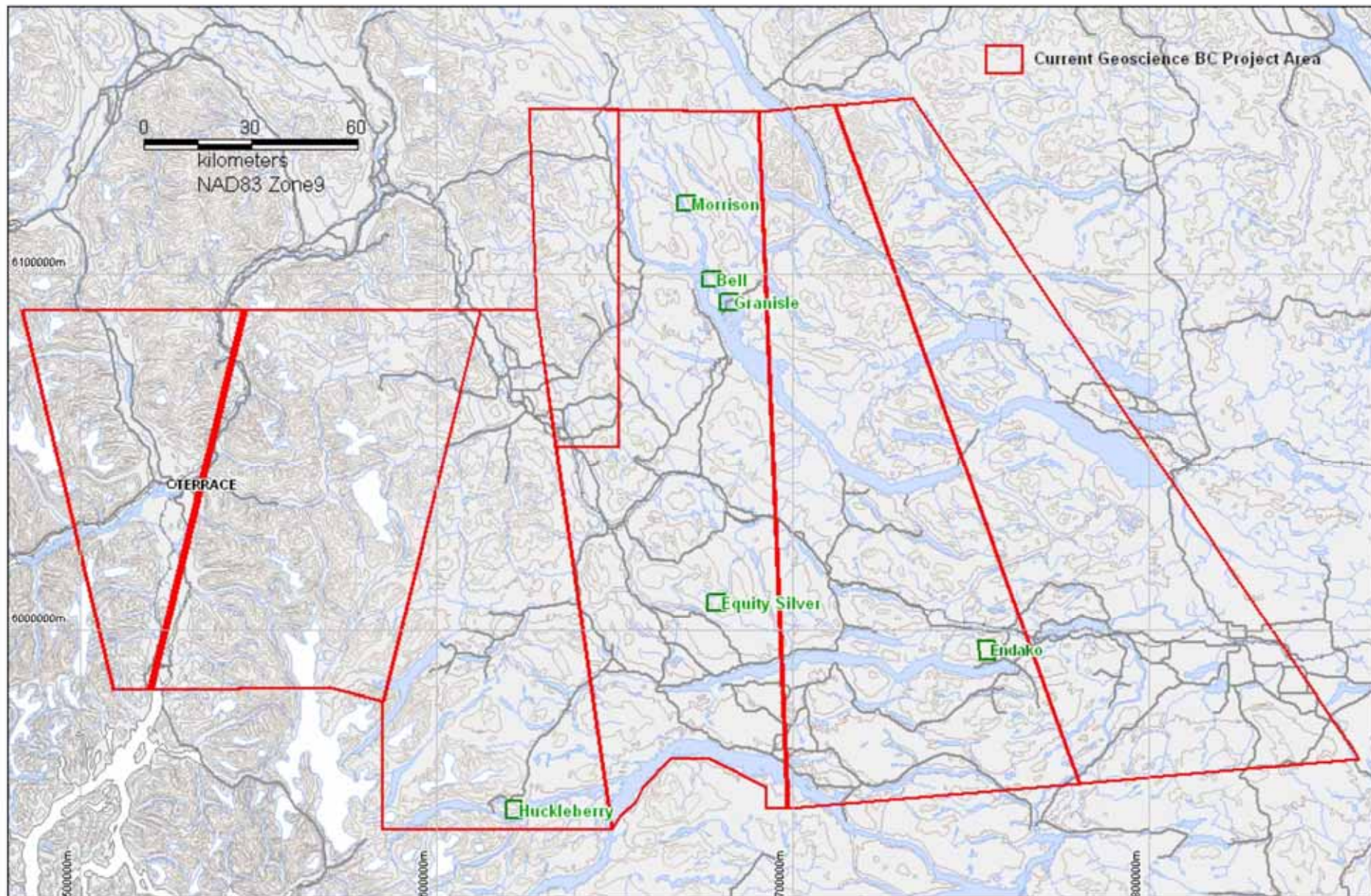


# QUEST-West TEM

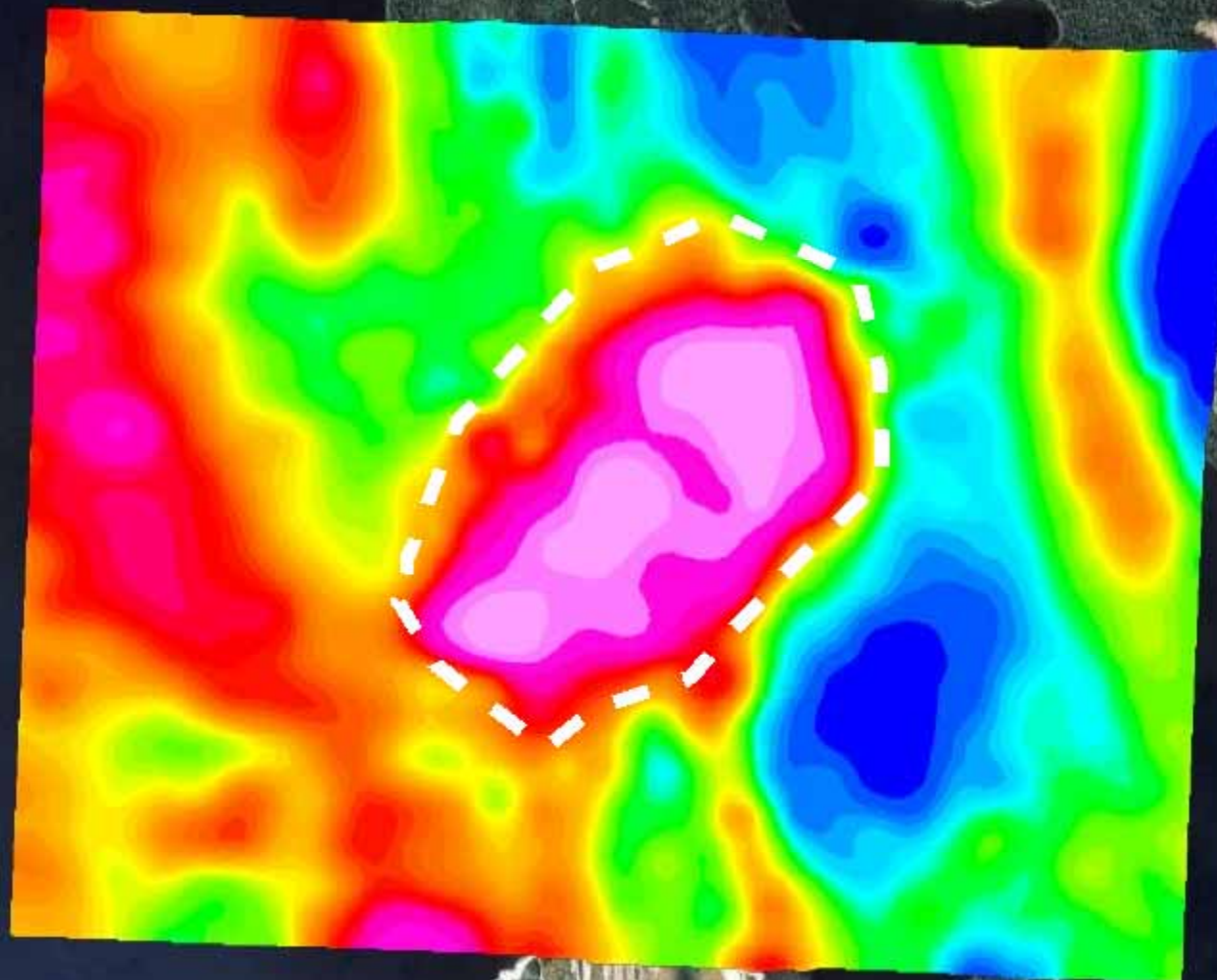
- Detailed Airborne TEM data collected over six deposits (producers, past-producers and developing prospect):
  - Bell
  - Granisle
  - Morrison
  - Endako
  - Equity Silver &
  - Huckleberry
- plus detailed VTEM and ZTEM at Mt Milligan
- GBC using these case studies to develop guides to interpretation of regional data



## Locations of six detailed AeroTEM case studies in QUEST-West







**Bell Mine – AeroTEM  
adaptive tau response**

Image © 2009 Province of British Columbia

elev 617 m



©2006 Google

Eye alt 7.82 km





Image © 2009 Province of British Columbia

elev 617 m

**Bell Mine – AeroTEM  
adaptive tau response**

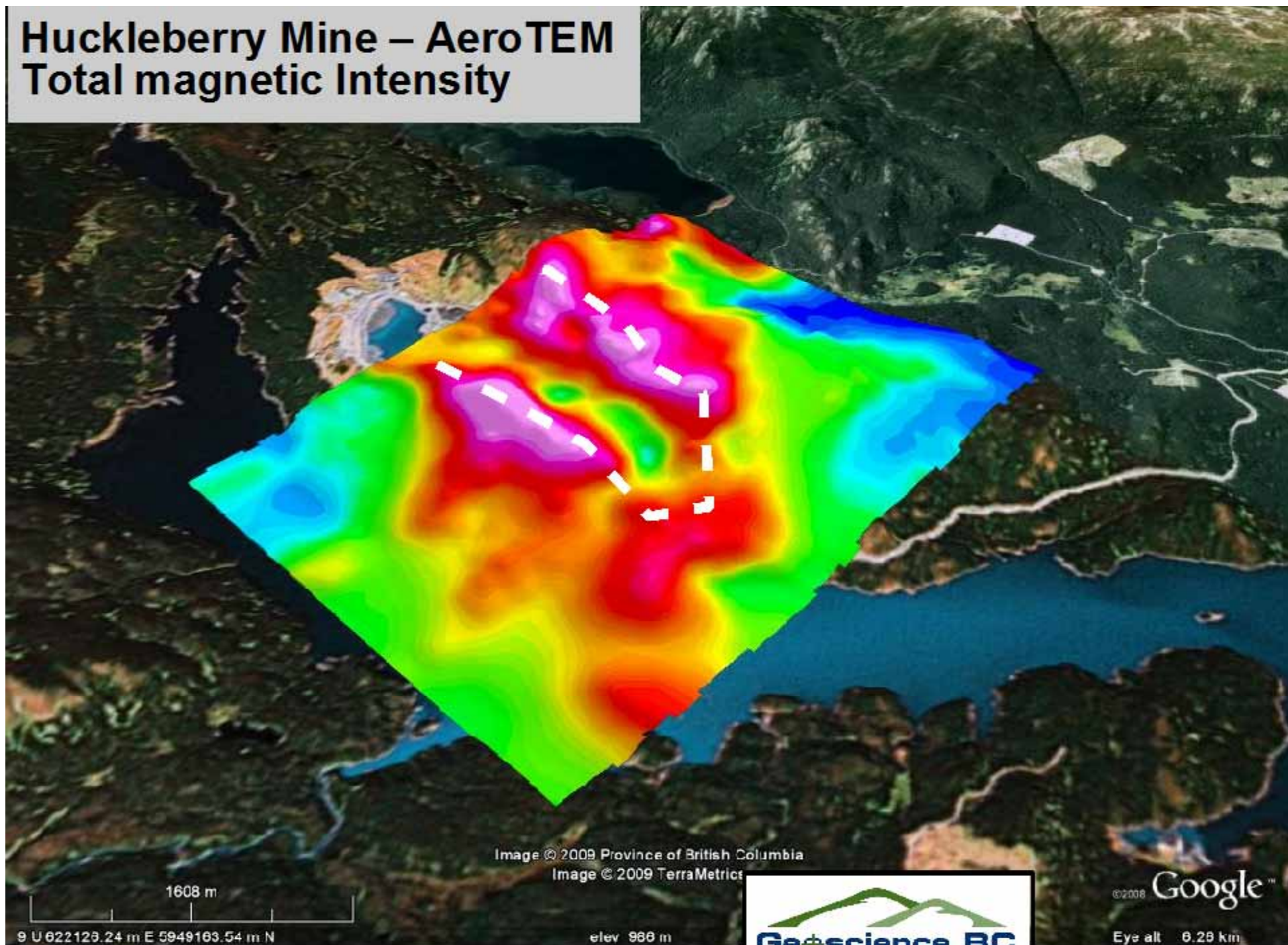


©2009 Google

Eye alt 7.82 km



# Huckleberry Mine – AeroTEM Total magnetic Intensity



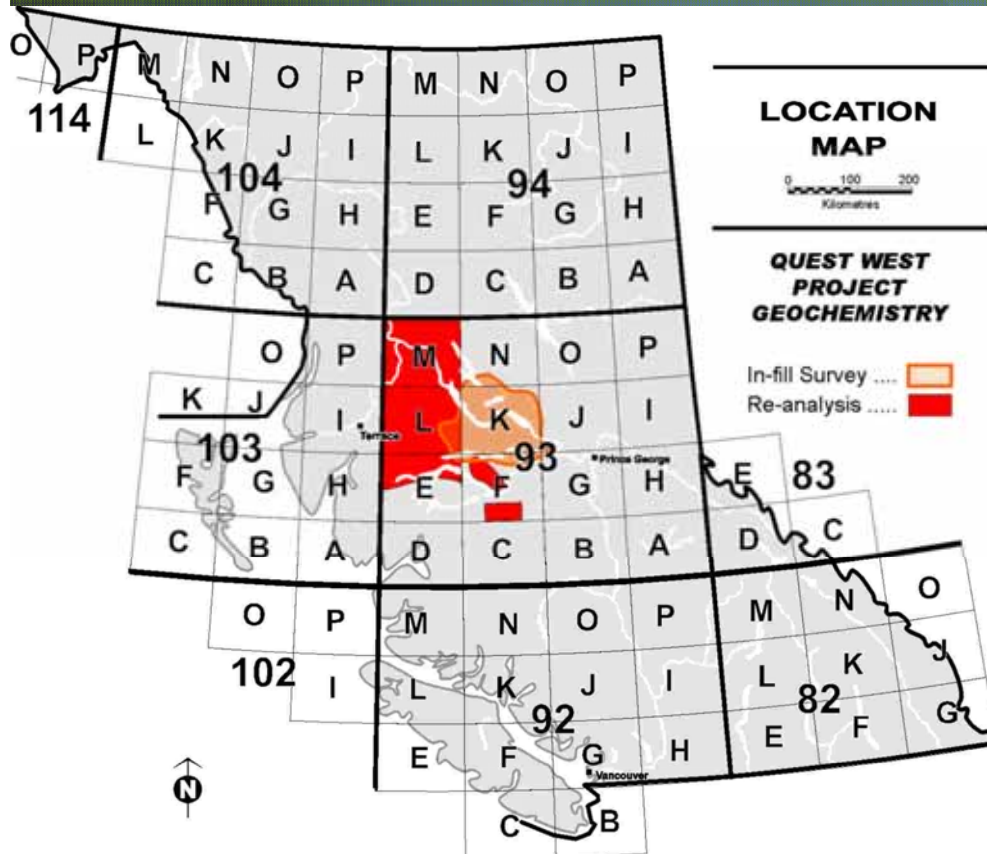


# Huckleberry Mine – AeroTEM Total magnetic Intensity





# QUEST-West Geochem



Geochem reanalyses: published in Geoscience BC Report 2009-05

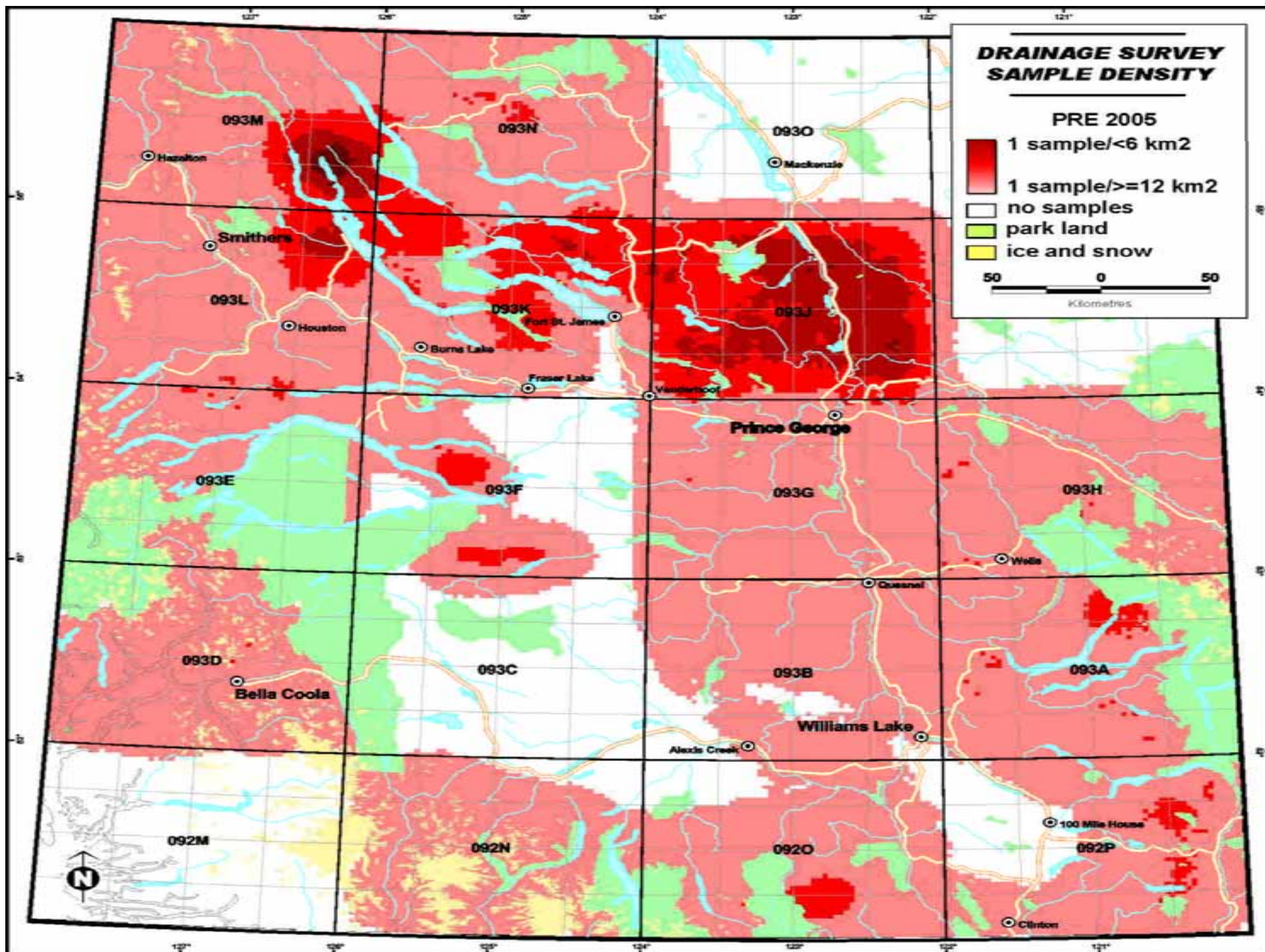
Report includes ICP-MS results for a total of 3479 stream and lake sediment samples, parts of NTS map sheets 93E, F, L, and M

These surveys were originally conducted by government from 1983 to 1996 (Lett, 2005)

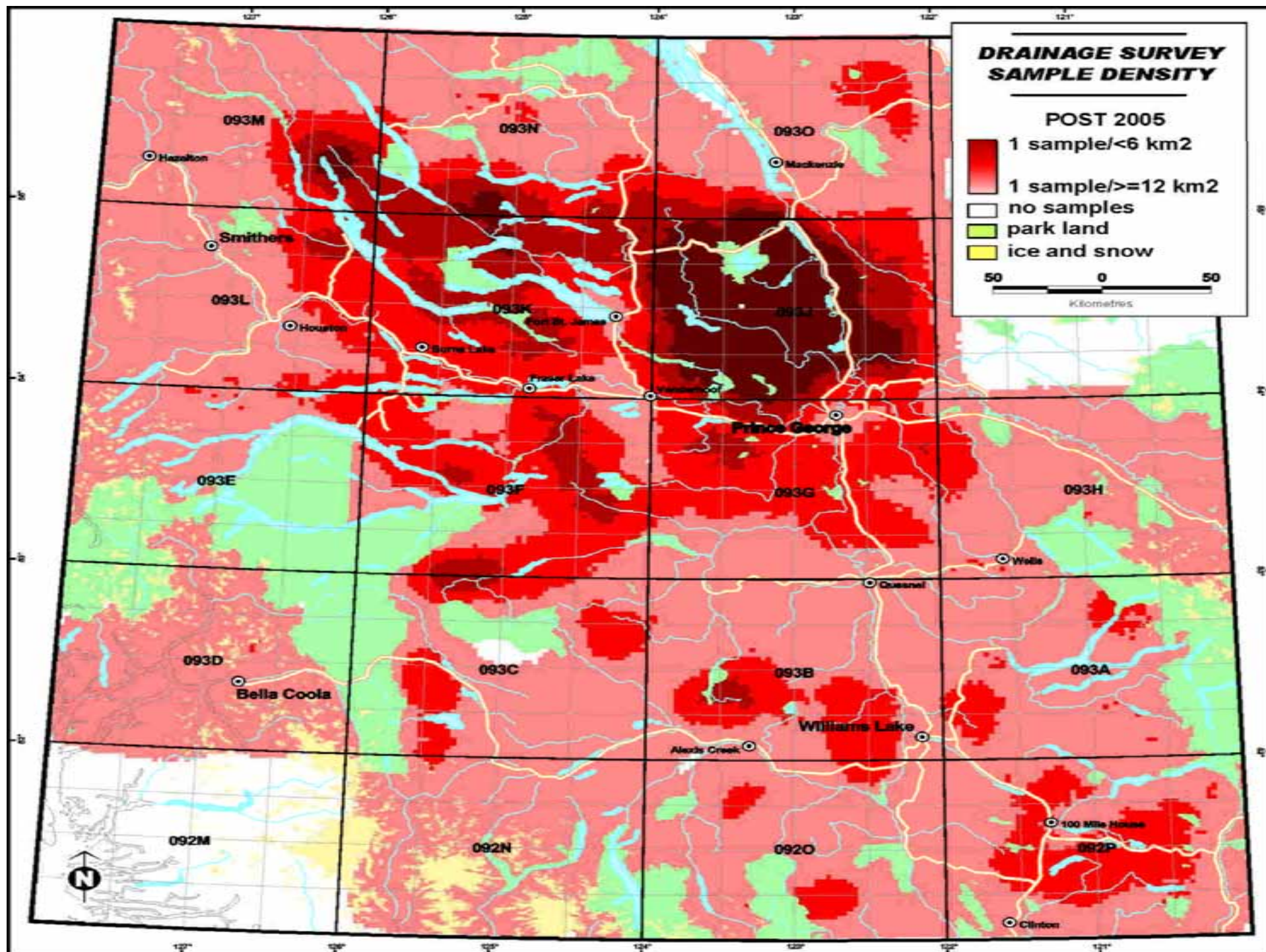
New infill sampling conducted in 2008. Results to be available soon

Recent data release of till geochem around Babine Lk – joint project with BCGS







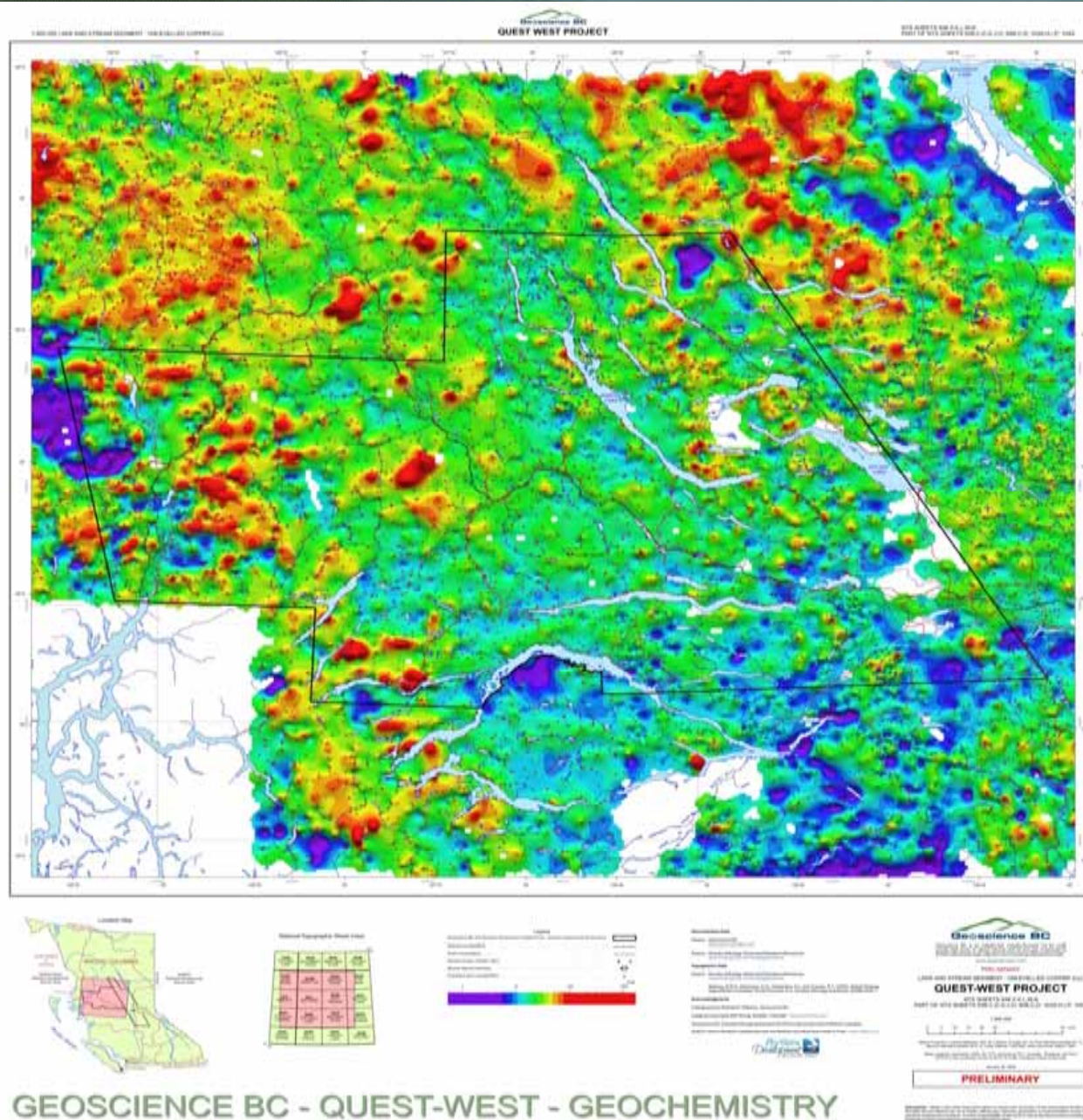




# QUEST- West

Geochem  
reanalysis  
sample  
coverage:  
unleveled  
copper.

Image and  
contouring  
by BW  
Mining



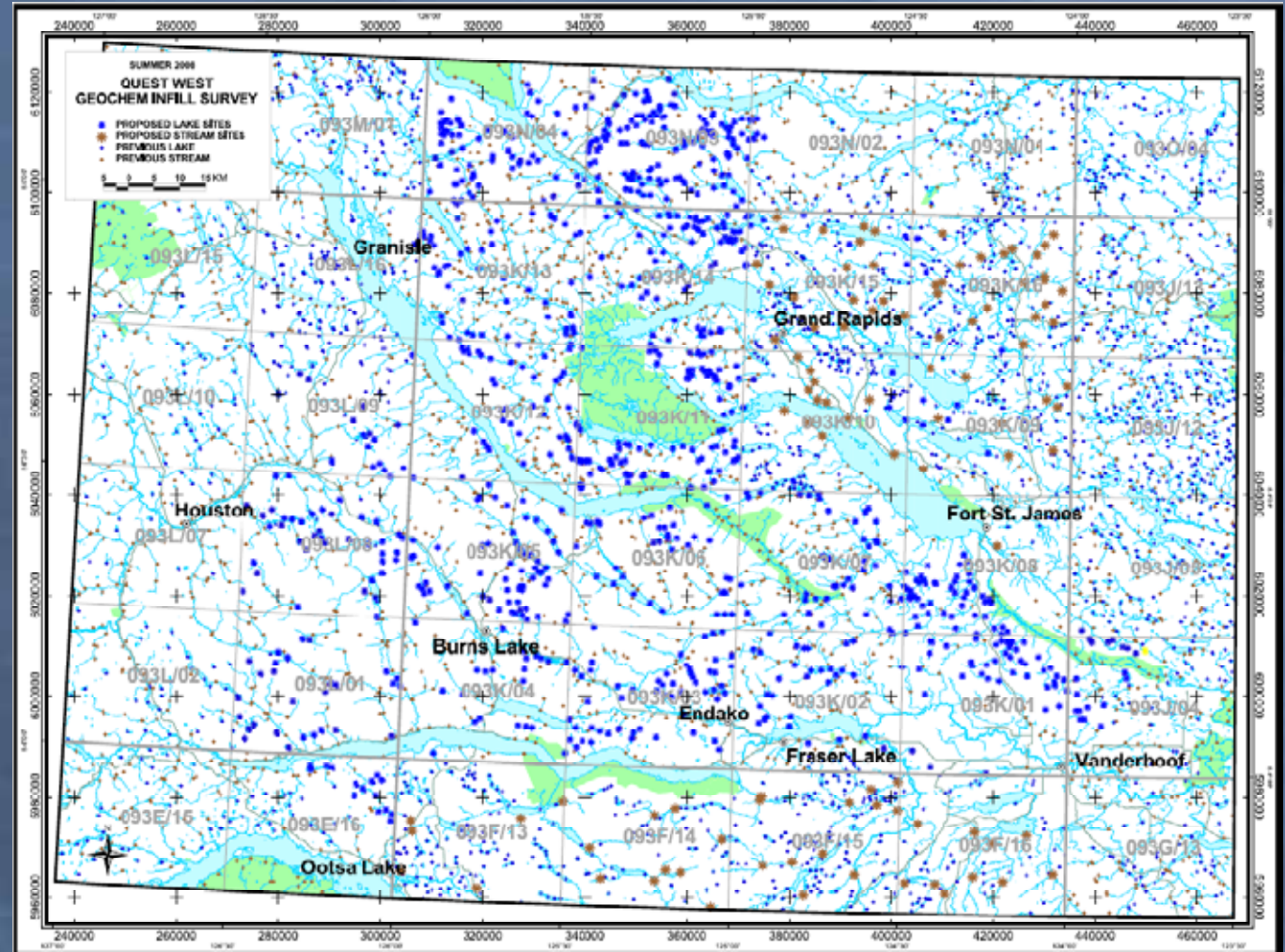


# Q-W Upcoming Data Release

New QUEST-West  
in-fill lake (905)  
and stream (102)  
sediment samples  
with ICP and INA  
results, from an  
area close to  
12,000 sq km

**Data to be  
released in  
mid-May**

*(Hint: several un-  
staked anomalies  
in new data set.)*





# QUEST Follow-up

## “Value added” projects for the QUEST Project Area:

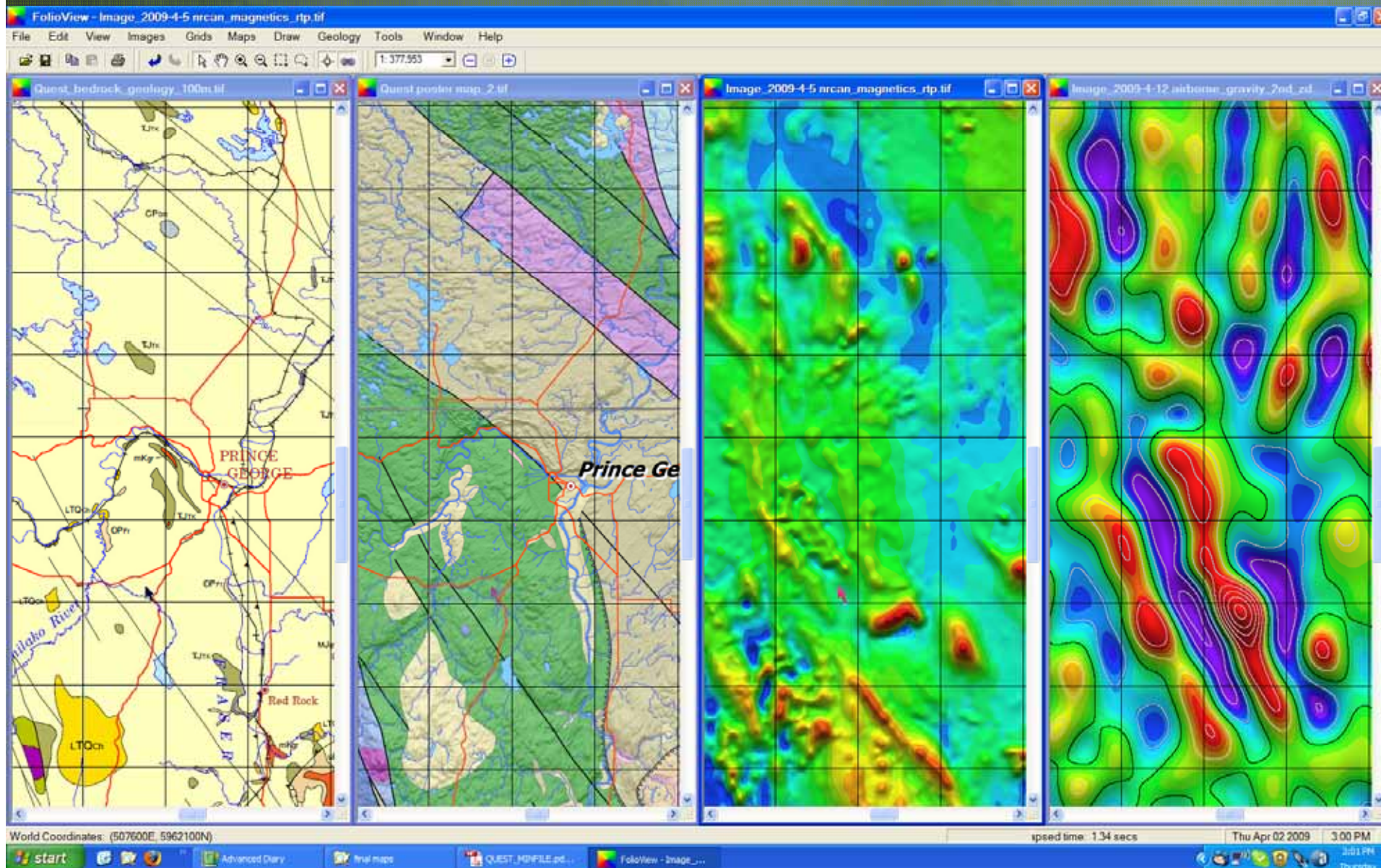
- Two projects focus on geochemistry
  - BW Mining – Neural Networks
  - CSIRO – Self-organizing maps
- Geophysical Data
  - Mira Geoscience – inversions and interp
- Update of Minfile and Property File
- Drift prospecting project - Ward
- GIS compilation – Williams
- Google Earth Data Explorer - query tool for geochem
- ZTEM test survey over Mt Milligan
- BC GeoMap Update – QUEST Area, with BCGS and GSC





# BC GeoMap Update – QUEST Area

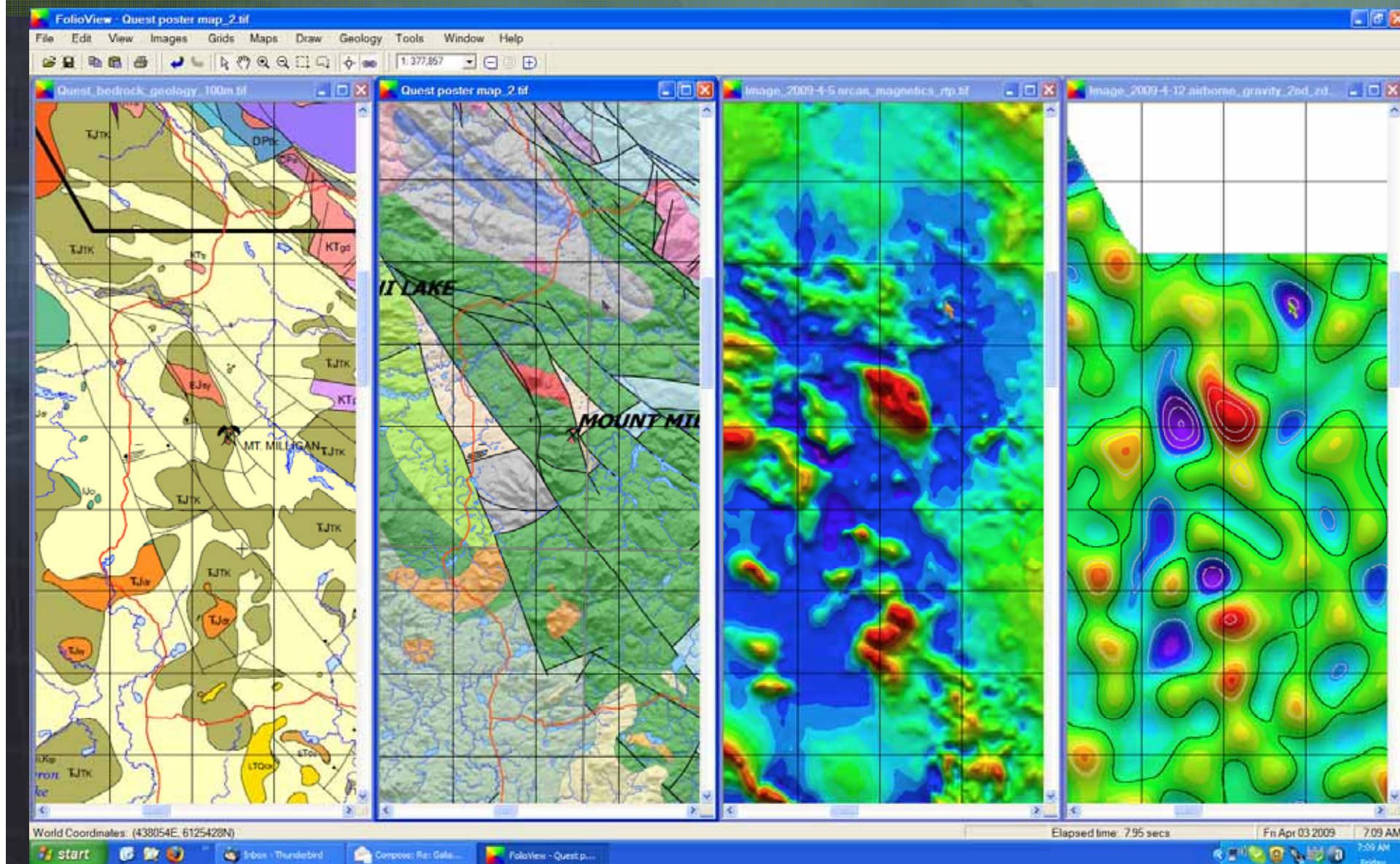
## *Geology Under Cover: Prince George*



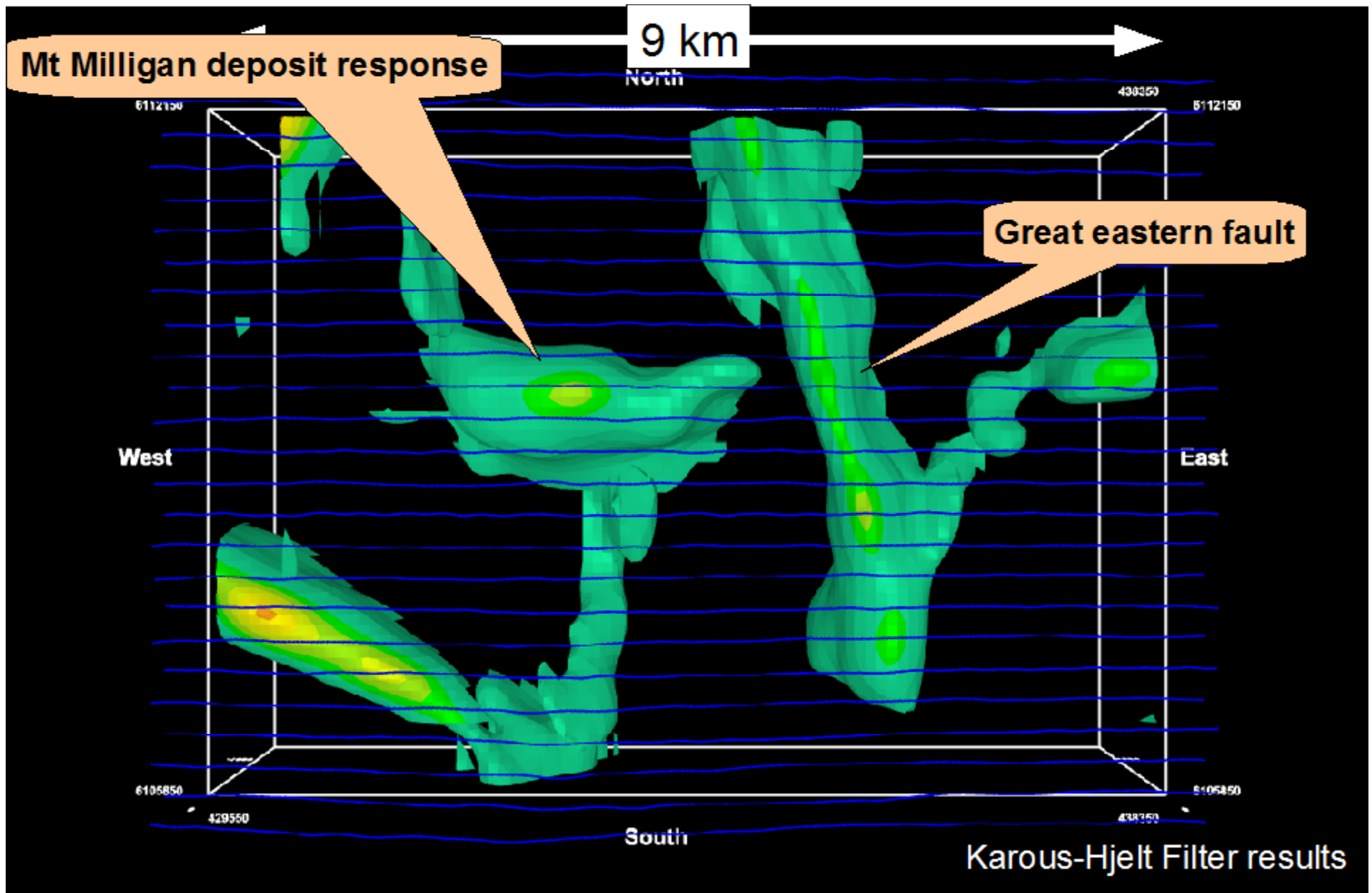


# BC GeoMap Update – QUEST Area

## *Geology Under Cover: Mt. Milligan*







**Mt. Milligan ZTEM test survey – NS & EW features. 200 meter flight line separation**



# 2009 **New** Projects

- Geophysical case studies from deposits in QUEST and QUEST-West
- Nicola Arc Lithogeochemistry, QUEST area
- Mapping in Grand Forks Area, SE BC
- **REQUEST FOR PROPOSALS!!!**
  - Issued April 08, 2009
  - Analysis and Follow-up of QUEST and QUEST-West Project Geoscience
  - **Deadline for submission is noon (Pacific) on Monday April 27th, 2009.**



# NEW: QUEST-South

## Phase 1

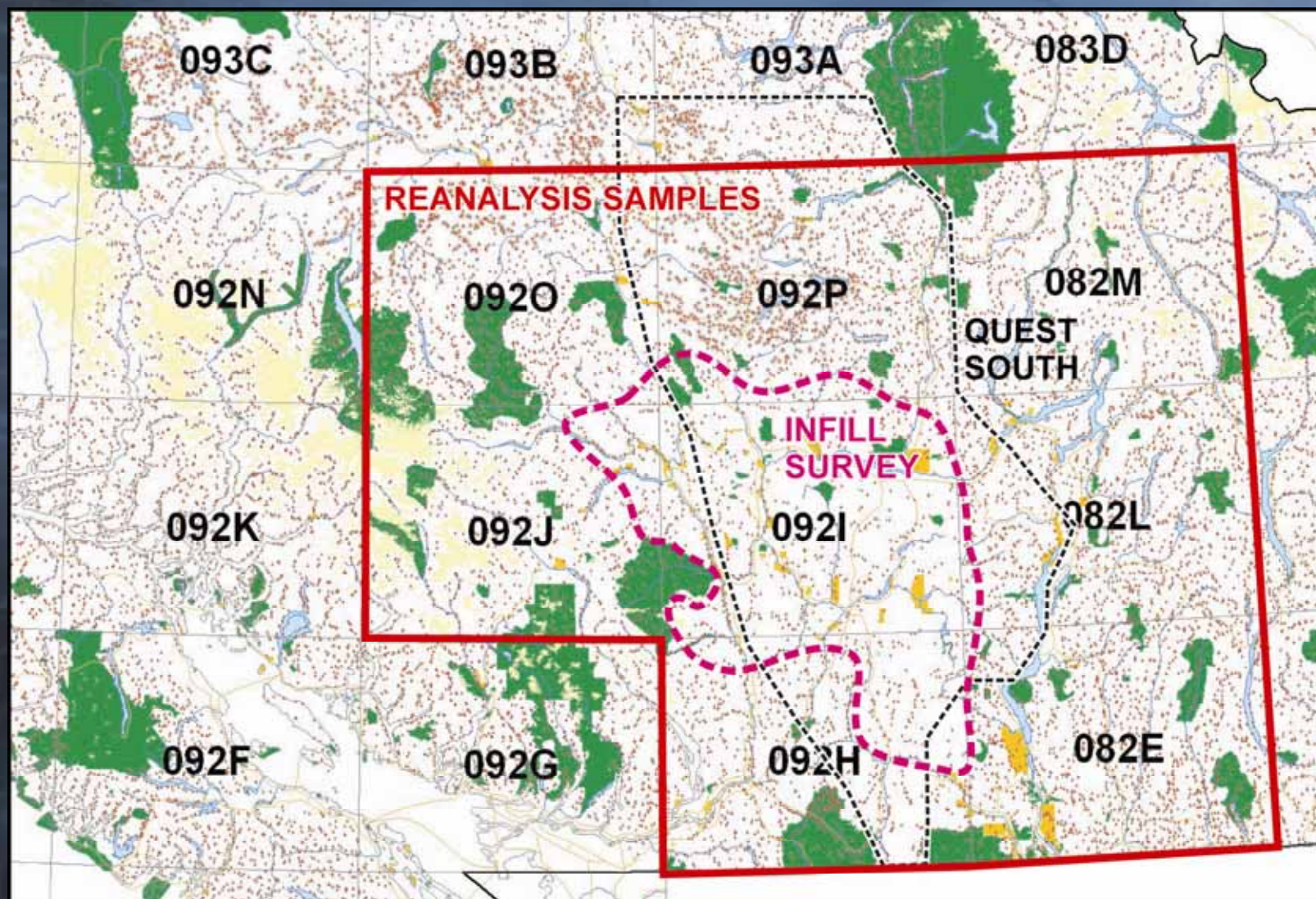
- Geochemical reanalysis: over 9000 samples, NTS sheets 82 E, L, M, 92 H, I, J, P, O
- New stream sediment and soil sampling: over 1000 new samples, area of focus 92 H & I, Princeton – Merritt – Ashcroft areas

## Phase 2

- New geophysics: techniques and target areas - TBD after more analysis of QUEST and QW geophysics results by our Project Team and Technical Advisory Committee



# QUEST – South Phase 1: Geochem





For More Information: See our Booth, call us, or visit our website [www.geosciencebc.com](http://www.geosciencebc.com)

