

2015 University of Manitoba Geophysics Field School
Selkirk Golden Boy Project: Written Report
May 3-4, 2015

This information is designed to guide you through writing a report on the Selkirk project. The objective of the report is to provide the results of this project in a **succinct** synthesis that addresses the main question behind the work: *what is the geological structure responsible for the observed potential field anomalies?* This report should include discussion of the background geology, economic potential, previously collected data available, surveys completed, data reduction, main survey results, comparison of new results with earlier results, and the geological interpretation of the combined data set. The report should be correctly scientifically referenced (including references to maps and personal communications). Your work should involve some consideration of the density and magnetic properties of the rocks and minerals involved. I will provide papers on these aspects.

SECTIONS TO BE INCLUDED

The following is a guide to the suggested sections and analyses to be included in the report. The list is not intended as a the final list. Add different analyses or modifications as appropriate.

A. FRONT SECTIONS

1. Title page (project, authors, date)
2. Summary (half a page or less)
3. Table of contents

B. INTRODUCTION

Explain why the project is being done, history of the prospect and economic potential, the fundamental components of the project (*i.e.* potential field surveys), the fundamental objective.

C. BACKGROUND GEOLOGY AND GEOPHYSICS

1. Brief introduction to the Precambrian, Phanerozoic, and Quaternary geology of relevance to the project. Perhaps include a basic cross section showing these.
2. Brief introduction to the Golden Boy magnetic and gravity anomalies.
(Information can be obtained from the Manitoba Geological Survey web pages).
3. Information on the density and magnetization of rocks from previous studies.

D. SURVEYS COMPLETED

1. Map showing location of all field surveys and other relevant features (e.g. drill holes, highways).
2. Instruments used.
3. Instrument configuration (gravity on ground or on tripod, height of magnetic sensors)
4. Survey configuration (lines, spacing, base station recordings, cross calibrations etc)
5. Problems encountered (wind, instrument issues, cultural anomalies etc)

E. DATA COLLECTED

1. Presentation of any raw data that needs to be shown (e.g. unedited magnetic profiles, base station data, time-variation magnetic data, comparison of the two magnetometer results).
2. Refer to Appendices for hard copies of the raw data.

F. DATA REDUCTION AND RESULTS

Briefly describe the methods used (or cite references) but list any specific operations or parameters (e.g. approach for removing magnetic time variations, density for Bouguer corrections). Present and describe the results (and as appropriate compare with earlier results).

1. Elevation (method result is an elevation profile)
2. Magnetics (result is a final edited magnetic profile and, if required or useful, a gradient profile)
3. Gravity (result is Bouguer anomaly profile)

G. DATA ANALYSIS AND MODELLING

1. Regional-scale data
2. Scenario modelling (question 3 of modelling assignment)
2. Your data

H. GEOLOGICAL INTERPRETATIONS

1. Integrate the data from all scales (ground, airborne, and physical properties) and address the objective of the survey.

I. CONCLUSIONS

J. REFERENCES

K. APPENDICES

1. Raw data
2. Description of equipment.
3. Any other information (e.g., you may decide to put the time-variation magnetic field plot here rather than in the report.)