NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Phase 2 Geoscientific Preliminary Assessment, Observation of General Geological Features

TOWNSHIP OF SCHREIBER, ONTARIO

APM-REP-06145-0008

FEBRUARY 2015

For more information, please contact:
Nuclear Waste Management Organization
22 St. Clair Avenue East, Sixth Floor
Toronto, Ontario M4T 2S3 Canada
Tel 416.934.9814
Toll Free 1.866.249.6966
Email contactus@nwmo.ca
www.nwmo.ca

Phase 2 Geoscientific Preliminary Assessment
Observation of General Geological Features
Township of Schreiber, Ontario

Revision: 0 (Final)

Prepared for:
Nuclear Waste Management Organization
22 ST. Clair Avenue East, 6th Floor
Toronto, Ontario M4T 2S3

NWMO Report Number: APM-REP-06145-0008

Prepared by:

Geofirma Engineering Ltd
1 Raymond St., Suite 200
Ottawa, Ontario K1R 1A2
Tel: (613) 232-2525
Fax: (613) 232-7149
www.geofirma.com

Fladgate Exploration
consulting corporation

Project Number: 10-214-10

Document ID: 10-214-10_Phase 2 Geoscientific Preliminary Assessment_R0

February, 2015

Title:	Phase 2 Geoscientific Preliminary Assessment Observation of General Geological Features Township of Schreiber, Ontario	
Client:	Nuclear Waste Management Organization	
Project Number:	10-214-10	
Document ID:	10-214-10_Phase 2 Geoscientific Preliminary Assessment_R0	
Revision Number:	0	Date: February, 2015
Prepared by:	Stefan Kruse, Tony Gilman, Steve Gaines	
Reviewed by:	Sean Sterling	
Approved by:	 Sean Sterling	

EXECUTIVE SUMMARY

This technical report documents the results of the Observation of General Geological Features (OGGF) activity conducted as part of the Phase 2 Geoscientific Preliminary Assessment, to further assess the suitability of the Schreiber area to safely host a deep geological repository (Geofirma, 2015). This study followed the successful completion of a Phase 1 Geoscientific Desktop Preliminary Assessment (NWMO, 2013; AECOM, 2013). The desktop study identified two potentially suitable areas warranting further studies such as high-resolution surveys and geological mapping.

The purpose of the Phase 2 OGGF activity was to confirm and ground truth the presence and nature of key geological features of the bedrock unit within the potentially suitable areas identified in the Phase 1 desktop assessment. Geological features were investigated over a period of seven mapping days by two teams of two geologists, and with the aid of a local guide for logistical support. A digital data collection protocol was applied to the documentation and compilation of the observations into a GIS-compatible database. This included observations of bedrock character (lithology, primary fabric, magnetic susceptibility, geomechanical nature), fracture character, bedrock exposure and surface constraints. Representative rock samples were also collected.

Observations were made at a total of 144 locations in the general potentially suitable areas of the Crossman Lake batholith identified in the Phase 1 Preliminary Assessment. The field observations were made primarily within two areas, in the western (Mapping Area A) and eastern (Mapping Area B) portions of the Crossman Lake batholith.

The majority of rocks in both areas are intrusive rocks that fall into the granitoid subclass (i.e. granodiorites and granites). Some limited dioritoid rocks and mafic dykes and rafts were identified. Overall, magnetic susceptibility measurements were comparable in the two mapping areas, reflecting the similar composition of granitoid host rocks. Magnetic susceptibility measurements were higher in the mafic unit visited. Measured granodiorite and granitic rocks in the two mapped areas have an intact rock strength that varies from strong to extremely strong.

The brittle structure in the mapping areas was characterized by four dominant fracture sets, including three steeply-dipping sets striking to the south-southwest, west and northwest and one shallowly-dipping set. Quartz, hematite and epidote and chlorite were the dominant fracture infilling minerals observed. Field observations include evidence of sinistral offset on south-southwest-striking faults and dextral offset on northwest-striking faults.

Both mapping areas have large areas of exposed bedrock, with only a few isolated regions with overburden of significant thickness. Access to the western portion of the Crossman Lake batholith is difficult with only limited helicopter landing locations and steep, impassable valleys. Road access is excellent into the central part of the eastern portion of the Crossman Lake batholith, with roads crossing the area from east to west. Further south, the eastern portion is only accessible by helicopter.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

This technical report documents the results of the Observation of General Geological Features (OGGF) activity conducted as part of the Phase 2 Geoscientific Preliminary Assessment, to further assess the suitability of the Schreiber area to safely host a deep geological repository (Geofirma, 2015). This study followed the successful completion of a Phase 1 Geoscientific Desktop Preliminary Assessment (NWMO, 2013; Golder, 2013). The desktop study identified two potentially suitable areas warranting further studies such as high-resolution surveys and geological mapping. The purpose of the Phase 2 OGGF activity was to confirm and ground truth the presence and nature of key geological features of the bedrock unit within the potentially suitable areas identified in Phase 1 desktop assessment.

The Phase 2 OGGF activity was completed by Fladgate Exploration Consulting Corporation (FECC) and Geofirma Engineering Ltd. (Geofirma) for the Schreiber area in Ontario. The observations were conducted at select readily-accessible, and some remote helicopter-access, locations using the existing road and trail network, where possible. The Phase 2 OGGF activity was undertaken to confirm and ground truth the presence and nature of key geological features. These include: bedrock character (lithology, primary fabric, magnetic susceptibility, geomechanical nature); fracture character; and bedrock exposure and surface constraints.

1.1 Scope of Work

The scope of work for the Phase 2 OGGF comprises three stages. These include:

- Stage 1: Pre-observation planning;
- Stage 2: Observation of General Geological Features; and
- Stage 3: Synthesis and reporting.

During the pre-observation stage, a plan for the OGGF was developed for the two general potentially suitable areas on the Crossman Lake batholith that were identified in the Phase 1 Geoscientific Desktop Preliminary Assessment (Mapping Area A and Mapping Area B; Figure 2; AECOM, 2013a). During the observation stage, geological information was collected in accordance with the plan. The documented observational information has been provided to NWMO in this report, and in ArcGIS compatible format along with additional observational datasets (e.g., digital field photographs) and appropriate metadata.

The general potentially suitable areas were investigated over a period of 7 days by two teams of two mappers with the aid of one local guide. Several GIS datasets were used as base maps for the Phase 2 OGGF project, including georeferenced historical geological outcrop mapping, high-resolution satellite imagery and recently acquired high-resolution geophysical data (SGL, 2015).

1.2 Qualifications of Team

Stefan Kruse, Ph.D., P.Geo. - Senior Field Geologist (FECC): Dr. Kruse has over 10 years of experience specializing in structural geology with extensive field mapping experience, and a Ph.D. in Structural Geology. He has worked for Tahera, Entrée Gold, and since 2007 with several companies

as part of Terrane Geoscience Inc. including Temex Resources, and Mega Uranium, both active in northern Ontario.

Tony Gilman, M.Sc., P.Geo., P.Eng. - Senior Field Geologist (FECC): Mr. Gilman has over 15 years of experience in structural mapping and geotechnical engineering, with an M.Sc. in Structural Geology. He has worked for Brunswick Mines, and since 2007 with several companies as part of Terrane Geoscience Inc. including Osisko, Mega Uranium and other companies active in northern Ontario.

Steve Gaines, M.Sc., P.Geo., P.Eng. - Assistant Field Mapper: Mr. Gaines has over 7 years of experience in consulting and geological engineering, with an M.Sc. in Geomechanical Engineering. He has worked in remote regions in Alaska and Greenland conducting surficial geology surveys and mapping bedrock structural features in drifts.

Emily Kyte, B.Sc. - Assistant Field Mapper: Ms. Kyte is a Geoscientist with one year of consulting experience. She completed an undergraduate degree in Earth and Planetary Science (Geology) from McGill University in 2013. Since graduating, Ms. Kyte has worked as a Junior Geologist/Geotechnician to complete geological mapping in the Grenville Province of northern Quebec.

1.3 Report Organization

A general description of the Schreiber area, including location, physiography and access is provided in Chapter 2. Chapter 3 summarizes the regional and local geological setting for the Schreiber area. The methodology employed to undertake the OGGF activity is provided in Chapter 4. Results are described in Chapter 5. A brief summary of the report is included in Chapter 6, followed by references cited in Chapter 7 and a set of figures. In addition, Appendix A at the end of the report includes summary tables of all collected field information.

2 DESCRIPTION OF THE SCHREIBER AREA

2.1 Location

The Township of Schreiber is located along the north shore of Lake Superior approximately 150 km east of Thunder Bay (~200 km by road) (Figure 1). Two main locations, Mapping Area A and Mapping Area B, comprised the main regions of focus during the field visit to the Schreiber area on September 10-16, 2014. Mapping Area A, which is 42.6 km^2, is located northwest of the Township of Schreiber and Mapping Area B, which is 37 km^2, is located northeast of the Township of Schreiber. Both mapping areas are approximately 10 km north of Highway 17 (Figure 2).

2.2 Physiography

The Schreiber area is located within the Abitibi Upland physiographic region (Thurston, 1991), a subdivision of the extensive James physiographic region (Bostock, 1970). The region is generally characterized by abundant bedrock outcrop with shallow drift cover and a rugged topography. Bedrock-controlled terrain dominates the majority of the area and results in a significant elevation variation over short distances; the maximum relief difference within the Schreiber area shown on Figure 1 is approximately 402 m. The highest land within the area occurs just north of the Township of Schreiber (585 masl), and the lowest point equals the elevation of Lake Superior (~183 masl).

The Schreiber area, including both of Mapping Areas A and B, is predominantly characterized by moderate to high relief (greater than 80 m) and very rugged topography consisting of knobby bedrock hills and steep escarpments. More moderate relief is present along the northern boundary of the Schreiber area where it is generally less than 80 m. The steep slopes in the area are an indicator of areas of minimal overburden cover. Areas with lower slopes, between the bedrock knobs, may represent pockets of locally thicker drift cover.

Distinct bedrock-controlled valleys, corresponding to the Pays Plat River in the west and the Aguasabon River in the east, border the area of high elevation that dominates the north-central portion of the Schreiber area. Other significant valleys occur along the same trends as those of mapped bedrock faults (Figure 2). The principal orientations of these bedrock-controlled valleys are northwest and north-northeast.

2.3 Accessibility

Access to the Schreiber area is via Ontario's Kings Highway 17 (the Trans-Canada Highway) and a rail line operated by Canadian Pacific Railways. The routing of both systems generally follows the Lake Superior coastline in the Schreiber area. Primary access to the interior of the Schreiber area, to the north of the Township, is provided by two north-trending roads; one connecting with the main highway to the east of the Township of Schreiber and the second approximately 8 km to the west of the Township of Schreiber (Figure 1). A network of forestry roads and trails provides limited access to other parts of the area.

Access to Mapping Area A is difficult. There are no roads or rail corridors that directly access this area and the interior lakes are generally considered to be too short to allow for safe float plane landing and take-off. A gravel road situated to the east of Mapping Area A leads to the site of the past-

producing Winston Lake mine (Figure 1). From here trails lead towards the northeastern portion of Mapping Area A. However, access into the area would require the use of an amphibious vehicle. Boat access into Mapping Area A may be possible, but only from lakes immediately around the periphery of the area itself. Additionally, near vertical cliffs characterize a very rugged topography in the southern portion of Mapping Area A. A helicopter is the most suitable means of transportation into Mapping Area A. Helicopter access is very weather dependent as fog-filled valleys, a common morning condition at least in late fall, can preclude safe passage.

Access to Mapping Area B, at least the majority of the central part, is significantly easier. Road access to Mapping Area B is excellent with a system of logging roads crossing the property from east to west with several trails/old road spurs north and south of the main access road (Figure 1). Steep valleys are present within Mapping Area B (e.g. south of the road network on the western portion of the area), but with care they are generally passable on foot. The extreme southern end of Mapping Area B is only accessible via helicopter. Several camps exist off of the main access road into Mapping Area B with vehicle traffic along this road common (e.g. one to two cars a day).

3 SUMMARY OF GEOLOGY

Details of the Schreiber area geology were described in the Phase 1 Geoscientific Desktop Preliminary Assessment (AECOM, 2013a and references therein). The following sections provide a brief summary of the regional geological setting and local-scale bedrock geology, structural history, metamorphism and mapped structures. The primary focus of this report is on the general potentially suitable areas in the Crossman Lake batholith identified during the Phase 1 Geoscientific Desktop Preliminary Assessment (AECOM, 2013a), and its surrounding bedrock units and important structural features (Figure 2).

3.1 Regional Geological Setting

The Schreiber area is located in the Archean Wawa Subprovince of the Superior Province. The Wawa Subprovince comprises a volcano-sedimentary-plutonic terrane bounded to the east by the Kapuskasing structural zone (beyond the Schreiber area) and to the north by the metasedimentary-dominated Quetico Subprovince. The western end of the Wawa Subprovince is bordered by the Proterozoic Trans-Hudson Orogen. In the Schreiber area the Wawa Subprovince is flanked to the south by the Early Proterozoic Southern Province.

The Wawa Subprovince is composed of two semi-linear zones of greenstone belts, the northern of which includes the Shebandowan, Schreiber-Hemlo, Manitouwadge-Hornepayne, White River, Dayohessarah, and Kabinakagami greenstone belts. The Proterozoic Coldwell alkalic complex divides the Schreiber-Hemlo greenstone belt (sometimes referred to as the Terrace Bay-Schreiber greenstone belt) into an eastern and western portion, the latter of which falls within the Schreiber area. The Schreiber-Hemlo greenstone belt is intruded by large granitoid bodies, including the Crossman Lake, Whitesand Lake and Terrace Bay batholiths within the Schreiber area (Figure 2).

3.2 Local Geological Setting

3.2.1 Bedrock Geology

The geology of the Schreiber area is characterized by several large Neoarchean granitoid intrusions which include the Terrace Bay, Crossman Lake and Whitesand Lake batholiths, and additionally, the Mount Gwynne pluton (Figure 2). The granitoids were emplaced into supracrustal rocks of the Schreiber assemblage of the Archean Schreiber-Hemlo greenstone belt between 2.688 to 2.675 Ga (Muir, 2003). Cross-cutting both the granitoid intrusions and host supracrustal rocks are several suites of mafic diabase dykes. The bedrock in the Schreiber area is also overprinted by several orientations of brittle faults and the individual rock units have been subjected to varying amounts of metamorphism.

Crossman Lake Batholith

The Crossman Lake batholith occupies the majority of the northern part of the Schreiber area, including Mapping areas A and B (Figure 2). The batholith is predominantly massive and consists of a mixture of medium-grained quartz-monzonite and monzodiorite, (alkali-feldspar) granite, tonalite, and granodiorite. Minor dykes and irregular masses of microgranite, quartz (-feldspar) porphyry and aplite occur along the margins of the batholith.

The boundary between the mostly massive (alkali-feldspar) granite of the Whitesand Lake batholith and Crossman Lake batholith is poorly defined. Carter (1988) placed the boundary between the two batholiths along narrow septa of east-trending greenstone belt rocks situated along the western margin of the Schreiber area (Figure 2).

Carter (1982) produced a regional map of the Terrace Bay area, which includes coverage over Mapping Area B. Carter (1982) characterized Mapping Area B area as being underlain by predominately felsic intrusive rocks including granite/tonalite, hornblende granite/tonalite, biotite granite/tonalite and hornblende + biotite granite/tonalite, biotite granite/tonalite. Minor rock types identified included syenite-diorite and quartz syenite-diorite and diabase dykes.

Only the southern-most edge of Mapping Area A had been previously mapped (Carter, 1981). Carter (1981) identified hornblende ± biotite syenite, quartz syentite and massive, pink hornblende ± biotite granite as the primary rock-types underlying the area. Minor rock types identified included massive leucogranite and aplite.

Schreiber-Hemlo Greenstone Belt

Supracrustal rocks in the Schreiber area occur in the western part of the structurally and lithologically complex Schreiber-Hemlo greenstone belt and are considered to be part of the Schreiber assemblage (Williams et al., 1991; Figure 2).

Carter (1988) identified three major types of supracrustal rocks in the Schreiber assemblage: 1) tholeiitic, mafic, massive or schistose, and variably metamorphosed up to amphibolite facies metavolcanic rocks comprising mainly massive to pillow basalt, tuff and related breccias; 2) calc-alkalic, mafic to felsic metavolcanic rocks dominated by massive, aphanitic to fine-grained flows with minor tuff and felsic amygdaloidal interbeds; and 3) clastic metasedimentary rocks, mainly wacke and silicified shale (including graphitic intervals) of turbiditic origin interbedded with minor banded iron formation.

Rocks underlying the eastern margin of Mapping Area B (Carter, 1982), were previously mapped as metamorphosed mafic intrusives including meta-diorite and meta-gabbro/amphibolite.

Mafic Dykes

Several suites of mafic dykes that cross-cut the Schreiber area are known regionally (Figure 2), including the northwest-trending Matachewan Suite dykes (ca. 2.473 Ga; Buchan and Ernst, 2004), north-trending Marathon Suite dykes (ca. 2.121 Ga; Buchan et al., 1996) and east-trending Keweenawan Suite dykes (ca. 1.100 Ga; Thurston, 1991). A western extension of the ca. 2.167 Ga Biscotasing dyke swarm may also occur in the Schreiber area (Hamilton et al., 2002). The Biscotasing dykes generally trend northeast; however, how these dykes may be distinguished from the north-trending Marathon Suite dykes in the Schreiber area is undefined.

3.2.2 Structural History, Metamorphism and Mapped Structures

Direct information on the structural and metamorphic history of the Schreiber area is limited. The description below is based on an integration of studies undertaken elsewhere throughout the broader region. In brief summary, six regionally distinguishable deformation episodes (D_1 – D_6) are inferred to

have overprinted the bedrock geological units of the Schreiber area (SRK, 2013 and references therein). D_1 developed a compositional layering and isoclinal folds between ca. 2.719 and ca. 2.691 Ga. D_2-D_4 produced the dominant brittle-ductile structures observed within the greenstone belts, including steeply dipping foliations, isoclinal folds, and thrust faults prior to ca. 2.680 Ga. D_5 was a brittle deformation event that involved the activation and possible re-activation of major regional faults sub-parallel to S_2 between ca. 2.680 and ca. 1.100 Ga. D_6 represents another regional brittle deformation event that occurred between ca. 2.680 and 1.100 Ga. The youngest major event of brittle fault displacement is constrained by the ca. 1.100 Ga Keweenawan dykes that transect the Schreiber area with no apparent fault offset. This suggests that only limited displacement could have occurred along the interpreted fault network since the intrusion of the Keweenawan dykes.

In the Schreiber area, the metamorphic grade of exposed Archean rocks is upper greenschist facies (Williams et al., 1991). Locally, higher metamorphic grades up to upper amphibolite facies are recorded in rocks along the margins of plutons. No evidence exists to suggest that rocks in the Schreiber area may have been affected by thermotectonic overprints related to post-Archean events.

The earliest ductile deformation fabrics described in the Schreiber area include a weakly developed mineral foliation and/or lineation. The absence of strong penetrative deformation textures suggests this early fabric is magmatic to syn-emplacement. Carter (1981; 1982) mapped E- to ESE-striking foliations in both Mapping Area B and the southern portion of Mapping Area A. These ductile fabrics may correlate with (D_1 or D_2) the Neoarchean assembly of the Schreiber-Hemlo greenstone belt and the associated metamorphic event. Open to tight re-folding of these early fabrics by approximately N-directed shortening during D_3 to D_4 may have produced the easterly trend that regional scale folds presently exhibit (e.g., Lin, 2001).

Overprinting the early ductile fabrics, are a series of brittle to brittle-ductile structures. Only those structures post-dating emplacement of the Crossman Lake batholith are preserved within the Schreiber area. Post-emplacement faults and shear zones are designated D_5 and D_6 in the nomenclature of SRK (2013). These post-emplacement structures are interpreted to have formed between ca. 2.680 Ga and ca. 1.100 Ga and possibly represent a broad east-southeast- and southeast trending fault network (SRK, 2013).

Several named faults are documented in the Schreiber area including the southeast-trending Sox Creek, Ross Lake and Cook Lake faults and northeast-trending Syenite Lake, Schreiber Point, Worthington Bay and Ellis Lake faults (Figure 2). Though the timing and kinematics of these faults are not described in previous literature, these faults were interpreted as D_6 structures (SRK, 2013). None of the named faults have been extended into either Mapping area A or B, however the along strike-extension of the Cook Lake fault would project into the southern part of Mapping Area A. Mapping Area B is also cross-cut by a prominent, but unnamed, west-northwest trending mapped fault (Figure 2).

3.2.3 Quaternary Geology

Quaternary geology in the Schreiber area is described in detail in AECOM (2013b). A brief summary is provided here for reference.

The Quaternary sediments, commonly referred to as drift, soil or overburden, are glacial and post-glacial materials which overlie the bedrock in the Schreiber area. For the majority of the area of Schreiber drift thickness over bedrock is limited and the ground surface reflects the bedrock topography. Over the majority of the area bedrock outcrops are common and the terrain is classified, for surficial purposes, as a bedrock-drift complex, i.e., thin drift cover that only locally achieves thicknesses that mask or subdue the bedrock topography.

The most common glacial deposits in the area of Schreiber are outwash deposits and ground moraine (till), generally less than 2 to 3 m thick. Greater accumulations of till are found within bedrock depressions, large scale lineaments, and on the down-ice (lee) side of bedrock highs.

Glaciofluvial outwash deposits occur as relatively level areas within some narrow, bedrock controlled valleys. The thicknesses of these deposits are likely to be variable, and may be locally substantial. Outwash deposits are generally well-sorted and comprised of stratified sand, gravel, and local boulders. The ground moraine (till) deposits have a silty-sand matrix and contain abundant clasts in the pebble to cobble size range. The thickness of the till in thee Schreiber area, based on exploration borehole records and surficial mapping, is generally on the order of 1 to 3 m (AECOM, 2013b).

Bogs and organic-rich alluvial deposits are present along water courses in the area and in rock floored basins. These deposits tend to have a limited thickness, as determined by regional studies, and areal extent.

4 METHODOLOGY

The following sections provide an overview of the approach taken for the OGGF activity in the Schreiber area. Two areas (Mapping Area A and Mapping Area B; Figure 2) were previously identified as general potentially suitable areas in Phase 1 (AECOM, 2013a). The methods described below include tasks associated with planning, implementation and synthesis and reporting of the OGGF activity.

4.1 Pre-Observation Planning and OGGF Implementation

Planning of the Phase 2 OGGF was completed prior to going to the field. The planning stage involved a review of all available information for the Schreiber area, including information on access. The planning also included the development of a comprehensive list of source data, equipment and task requirements for the observation of key geological attributes to be made during the activity (Table 1). The outcome of the planning stage of the activity was a plan for the observation of general geological features in Mapping Areas A and B in the Schreiber area.

This plan identified the proposed daily traverses along which the key geological attributes listed in Table 1 would be observed. Identification of key structural and lithological features and areas of likely bedrock exposure provided the rationale for locating the planned traverses, although the final location of stations was ultimately determined while in the field (Table A.1; Figures 3A and 3B).

The key geological attributes to be observed are stated in Table 1 below, along with the methods identified to observe and capture the relevant information. This includes the use of a digital data capturing method, which for this activity was an ArcGIS compatible data-logging instrument (Trimble™ or equivalent) loaded with the GanFeld system software. The GanFeld system is an open source and fully customizable, map-based, field data capture system originally provided in an open file format by the Geological Survey of Canada (Shimamura et al., 2008). Entry of geological information into the GanFeld database follows a simple data collection protocol (Table 1) which directs the observer to the appropriate digital form within the database system to capture the appropriate information for this activity, based on NWMO's objectives. In this report planar measurements are recorded as strike and dip following the Canadian right-hand rule and linear measurements are recorded as plunge and trend.

Table 1 Key Geological Attributes Characterized during the OGGF

Geological Attribute		Method(s)	Data Capture Protocol[1]
Location information		Trimble™ GPS point Handheld GPS tracklog and waypoints as redundant / backup data	**Station Form** • 'Add with GPS' function • Tab 1 • Each observation location has a unique station identification number made up of the two digit year (14), the senior mapper's initials (e.g., SK), and a unique sequential number indicating the order in which the mapping team visited each station during the field visit.
Host rock characterization	Lithology	Visually inspect the rock surface for identification of lithological units and their constituent minerals (e.g., granitic rocks have varying proportions of quartz, K-feldspar and plagioclase plus other minerals including micas, hornblende, etc.) Name the lithological unit(s) in terms of relative abundance at the outcrop scale Collect a small number of representative samples[b] of the dominant lithological unit(s) across the area of interest (will require use of hammer and chisel only) Take digital photographs of representative lithological units across the area of interest	**Lithology Form(s)** • If Intrusive (INT) = Tabs 1, 2[a], 5 • If Volcanic Flow or Pyroclastic (VF, VP) = Tab 1 • If Metamorphic (M) = Tab 1, 3 **Sample Form** • Tab 1, Type = 'representative' • Notes **Photo Form** • Tab 1, Notes
Host rock characterization	Structure	Visually inspect the rock surface for identification of rock fabric (bedding, foliations, lineations) Take digital photographs of representative structures[c] Measure and document (by hand with compass and subsequent digital and manual entry) Strike and dip[d] of planar structures[e] Trend and plunge of linear structures	**Structure Form** • Tabs 1, 2 **Photo Form** • Tab 1, Notes
Host rock characterization	Geophysics	Record digitally, 5 magnetic susceptibility measurements for each identified lithological unit (the mean is entered into the GanFeld database)	**Sample Form[f]** • Tab 1, Type = 'chip' • Notes
Host rock characterization	Geomechanics	Undertake field rock strength test[g] Undertake block size/fracture density assessment based on outcrop fracture geometry and spacing[h]	**For density** • FracDense Form • Tab 1 **For strength** • FracDense Form • Tab 2
Fracture characterization		Visually inspect the rock surface for identification of systematic fracture (joint, fault, vein) sets Take digital photographs of representative fracture features Measure and document (by hand with compass and subsequent digital and manual entry) Type (fault, vein, joint) Strike and dip of planar structures Fault, vein or joint spacing Trend and plunge of linear structures Alteration/mineral infill (if any) associated with identified fracture set(s) Relative age relationships	**Structure Form** • Tabs 1, 2 **For spacing** • Structure Form • Tab 2 **For relative age relationships** • Structure Form • Notes **For alteration** • Structure Form • Tab 2 **Photo Form** • Tab 1, Notes

Geological Attribute	Method(s)	Data Capture Protocol[1]
Bedrock exposure and other surface constraints characterization	Visually inspect the area covered during the daily traverse and compare observations at each station against existing overburden coverage map	**Station Form** • Notes

Notes: 1) All observations recorded in digital format (ArcPAD + GanFeld database) with manual (pen and paper) backup for most pertinent field observations only, unless required due to digital device failure. In addition, the 'Notes' tab in all forms can be utilized at the observers discretion in order to capture additional relevant information.

a Lithology Tab 2: Form and Rock Fabric, with Colour Index and Colour (typed in) most useful if it helps to characterize different phases of a multi-phase pluton.

b Samples were stored in bags numbered in accordance with the sample number generated in the GanFeld database.

c The caption entry location in the Notes section of the Photo form was used to link the digital camera number for each photo to the GanFeld generated photo number.

d Strike and dip measurements follow Canadian right-hand-rule notation.

e Effort was made to characterize fractures of all dip magnitudes (including horizontal to shallow dipping features)

f Magnetic susceptibility (MS) measurements were recorded on the Sample Form. Type was entered as 'chip' and 5 measurements were captured in the 'Reason' section on the Notes page of the Sample Form.

g, h Refer to Table 2 and Table 3, respectively.

Magnetic susceptibility measurements were collected at each station using a KT-10 magnetic susceptibility meter, provided and calibrated by Terraplus Inc. of Richmond Hill, Ontario. Magnetic susceptibility data is recorded as a dimensionless proportionality constant that measures the response of a material to an induced magnetic field. At each station, approximately five magnetic susceptibility readings were collected, dispersed evenly across the outcrop to provide a station average value.

Preliminary geomechanical characterization of the bedrock was undertaken by means of a simple field-based hammer test for intact rock strength (IRS) and a visual estimation of fracture spacing, primarily of joints, for block size determination. Table 2 and Table 3 describe the means by which these geomechanical characteristics are defined.

Fist-sized rock samples were collected in order to preserve representative examples of the dominant lithologies encountered.

Table 2 Field Estimates of Intact Rock Strength

Grade	Description	Field identification
R6	Extremely strong	Specimen can only be chipped with a geological hammer
R5	Very strong	Specimen requires many blows of a geological hammer to fracture it
R4	Strong	Specimen requires more than one blow of a geological hammer to fracture it
R3	Medium strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single blow from a geological hammer
R2	Weak	Can be peeled with a pocket knife with difficulty, shallow indentation made by firm blow with point of a geological hammer
R1	Very weak	Crumbles under firm blows with a geological hammer, can be peeled by a pocket knife
R0	Extremely weak	Indented by thumbnail

Note: From Barton (1978).

Table 3 Rock Characterization Based on Observed Joint Spacing

Joint Spacing (cm)	Block Size	Description
>100	Massive	Very well interlocked, undisturbed rock mass blocks formed by three or less discontinuity sets with very wide joint spacing
30 – 100	Blocky	Very well interlocked, undisturbed rock mass consisting of cubical blocks formed by three orthogonal discontinuity sets
10 – 30	Very blocky	Interlocked, partially disturbed rock mass with multifaceted angular blocks formed by four or more discontinuity sets
3 – 10	Blocky/disturbed	Folded and/ or faulted with angular blocks formed by many intersecting discontinuity sets
1 – 3	Disturbed	Poorly interlocked, heavily broken rock mass with a mixture of angular and rounded rock pieces
<1	Foliated/laminated/ sheared	Thinly laminated or foliated, tectonically sheared rock, closely spaced schistosity prevails over any other discontinuity set, resulting in complete lack of blockiness

Note: Modified from Hoek (2007).

Capturing observations related to assessing bedrock exposure and other surface constraints was done by manual indication in the field notes and with spatial reference to specific proximal stations.

A summary of the equipment requirements for the OGGF activities, along with information regarding calibration requirements, is provided in Table 4.

Table 4 Equipment Requirements

Equipment	Calibration Required
Compass (Brunton Pocket Transit or similar)	Y – Check magnetic declination setting daily
Digital Camera	N
Trimble (or equivalent) field data collector w/GPS	Y – Check against hand held GPS
ArcPAD + GanFeld software	N
Magnetic Susceptibility Meter (KT-10 or equivalent)	Y – Calibrated by supplier before rental and upon return from rental period / daily check of reading at a reference rock outcrop. Certificate of Calibration provided by supplier.
Notebook and Pen	N
Handheld GPS	N
Geological Hammer	N
Sample Bags	N
Personal Protective Equipment	N

A number of daily tasks were identified which align with the objectives of the OGGF activity. These are outlined below in Table 5 along with allocation of responsibility for completing these tasks between the senior (lead) and assistant mapper. This allocation of tasks was followed as a general guideline, noting that the senior field geologist had authority to make decisions in the field on how best to undertake the proposed work to meet the objectives within the schedule and accounting for field access constraints.

Table 5 Task Allocation

Task	Responsibility
Daily safety de-briefing	Assistant
Daily equipment calibration	Assistant
Host rock lithology characterization	Lead
Host rock structural characterization	Lead
Digital photographs	Lead
Fracture characterization	Lead
Data input into ArcPad	Lead
Manual (pencil and paper) note transcription	Assistant
Magnetic susceptibility measurements	Assistant
Rock strength assessment - Hammer test	Assistant
Bedrock overburden assessment	Assistant
Sample collection (if necessary)	Assistant
Surface constraint assessment	Both
Identification of potential detailed mapping areas	Lead
Daily log write-up and transmittal	Assistant
Daily data back-up and back-up for the back-up	Lead
Planning the next day traverse	Both

4.2 Synthesis and Reporting

Observations captured during the field work were compiled and synthesized from both members of the mapping team. Data collected included ArcPad/GanFeld data, field notes and sketches, digital photographs, rock samples, and magnetic susceptibility data. Data from the ArcPac/GanFeld was checked for consistency with field notes. Field notes from both mapping teams were scanned and compiled together with all digital photographs.

The deliverables of the OGGF activity, along with this report, are shapefiles with the types of information entered into the GanFeld database. Shapefiles contain station, lithology, structure, fracture density, photo, and sample information. The average magnetic susceptibility measurement is also recorded within the sample shapefile. Magnetic susceptibility measurements are provided in spreadsheet format with clear linkage to the associated station and lithological unit where the measurement was taken. All digital photographs and scanned field notebooks are delivered to NWMO in a zipped folder. Metadata accompanying each shapefile and zipped folder were prepared according to metadata guidelines provided by the NWMO.

5 FIELD OBSERVATIONS

This section summarizes the field observations that were made over 7 days, from September 10 to September 16, 2014 in the Schreiber area. The observations were conducted at select locations using the existing road and trail network in the Schreiber area, where possible, and also included some locations that required helicopter access. Observations were focused primarily within the previously identified potentially suitable areas on the Crossman Lake batholith, identified as Mapping Area A and Mapping Area B (Figure 2). The field mapping crews observed geological features at a total of 144 stations, including 53 in Mapping Area A (Figure 3A) and 91 in Mapping Area B (Figure 3B). The observational results are preliminary in nature and as such are presented in a factual manner below.

Each observation location has a unique station identification number made up of the two digit year (14), the senior geological mapper's initials (e.g. SK or TLG), and a unique sequential number indicating the order in which the mapping team visited each station during the field visit (Appendix A.1).

The Phase 2 OGGF activity was conducted to confirm and ground truth the presence and nature of key geological features in the area. This included:

- bedrock character (lithology, structure, magnetic susceptibility, geomechanical nature);
- fracture character; and
- bedrock exposure and surface constraints.

The collected data is provided in a series of tables in Appendix A at the end of the report, including:

- A.1 Summary of Observation Stations
- A.2a Summary of Intrusive Lithology Observations
- A.2b Summary of Metamorphic Lithology Observations
- A.2c Summary of Volcanic Flow Lithology Observations
- A.2d Summary of Geological Alteration Observations
- A.3 Summary of Field Magnetic Susceptibility Measurements
- A.4 Summary of Geological Structure Observations
- A.5 Summary of Geomechanical Characterization Observations
- A.6 Summary of Field Photos Taken During Field Observations
- A.7 Summary of Samples Collected

5.1 Bedrock Lithology and Intact Rock Strength

The majority of rocks in both Mapping Area A and B are intrusive rocks that fall into the granitoid subclass (i.e. granodiorites and granites), including sills and veins, with limited dioritoid rocks (e.g. quartz diorite) and mafic rocks (i.e. mafic dykes and rafts). Below are descriptions of the bedrock lithology for each of the mapping areas. The complete dataset of bedrock lithological observations is included in Appendix tables A.2a, A.2b and A.2c. In addition, bedrock alteration characteristics are provided in Appendix Table A.2d. Intact rock strength (IRS) is directly related to lithology and therefore the results of IRS testing are also presented below and included in Appendix A.5. The

reference material for the nomenclature used in the description of intact rock strength is included in Table 2 above.

5.1.1 Mapping Area A

Mapping Area A is dominantly underlain by granodiorite and granite, possibly representing two separate phases of intrusions. Below is a general description of each of the dominant lithologies:

- Granodiorite (Figure 4A) – Leucocratic to mesocratic; massive to weakly foliated; medium grained, occasionally fine grained; equigranular; accessory minerals vary from hornblende > biotite to biotite > hornblende to biotite alone; weak to strong, pervasive hematite alteration of alkali feldspars is common.
- Granite – Leucocratic to mesocratic; massive to weakly foliated; medium grained, occasionally fine grained; equigranular; biotite is the primary accessory mineral; locally contains porphyritic K-spar.

Spatially these rocks are not divided by a sharp contact but rather are present in a heterogeneous mixture throughout the area. No relative timing relationships between the two granitoid phases were observed.

Field intact rock strength (IRS) testing from Mapping Area A, undertaken on the granodioritic and granitic bedrock, indicates that these rocks have an IRS of very strong to extremely strong (R5-R6). In total 51 of 56 stations yielded IRS results of R5 (very strong), while 5 of 56 stations returned a value of R6 (extremely strong). There was no systematic difference noted in intact rock strength between the granodiorite and granitic intrusive phases.

Less common granitoid phases observed include, two outcrops that were mapped as quartz diorite and one outcrop that was mapped as monzodiorite. In the extreme southwest corner of Mapping Area A, one additional outcrop was mapped as biotite, quartz and feldspar orthogneiss.

In addition to the rock types described above, mafic dykes were observed at two locations in Mapping Area A. At station 14TLG046, a black, foliated dyke with amphibole was observed (Figures 3A and Figure 4B) to crosscut the main lithology of biotite granodiorite. At station 14SK039, a green, massive, and unzoned, mafic dyke crosscuts the main lithology of biotite granite. The dissimilarity of dyke character between these two occurrences suggests that they likely belong to different intrusive suites.

In general, the lithological observations are consistent with the previous mapping results reported by Carter (1981). Carter's (1981) mapping, which did not extend as far north into Mapping Area A as the locations covered during this work, primarily identified syenites and granites in that part of the Crossman Lake batholith. Though some variation in granitoid composition may be expected across the full extent of Mapping Area A, the occurrence of biotite +/- hornblende as the dominant mineral phase(s), does appear to be consistent.

5.1.2 Mapping Area B

Mapping Area B is primarily underlain by two phases of granodiorite. Below is a general description of the dominant lithologies:

- Phase 1 Granodiorite (Figure 4C) – Leucocratic to melanocratic; weakly foliated; medium grained to coarse grained; inequigranular; accessory minerals generally include hornblende and lesser biotite; weak to strong, pervasive hematite alteration of alkali feldspars common.
- Phase 2 Granodiorite – Leucocratic to mesocratic; massive to weakly foliated; medium grained, occasionally fine grained; equigranular; accessory minerals vary from hornblende > biotite to biotite > hornblende to biotite alone; weak to strong, pervasive hematite alteration of alkali feldspars common.

Phase 1 granodiorite is more prevalent on the eastern margin of Mapping Area B, and is characterized by the presence of mafic rafts, sills, sheets, and xenoliths (Figure 4D). Apparent rafts of Phase 1 granodiorite within Phase 2 granodiorite, suggest that the former is older than the latter.

Field IRS measurements from Mapping Area B, undertaken on the granodioritic bedrock, indicate that the rocks varying from strong to extremely strong (R4-R6). The majority of stations (71 of 91) in Mapping Area B yielded field strength test results of R6 (extremely strong) while 17 of 91 stations returned an IRS value of R5 (very strong). Three stations were noted as having a field strength IRS value of R4 (strong). There was no systematic difference noted in intact rock strength between the Phase 1 and Phase 2 granodiorite.

A suite of pink, granitic aplitic and pegmatite dykes and sills were observed to locally cross-cut both phases of granodiorite. These granitic intrusions can occupy up to 15% of the rock volume in some outcrops (Figure 4E). Generally, these contacts are chilled, occasionally they display sharp margins, and are very well healed.

The eastern margin of Mapping Area B (Figure 3B) is underlain by the contact between mafic volcanic rocks of the Schreiber-Hemlo greenstone belt and granodiorite of the Crossman Lake batholith. The contact is complex, with possible embayments and/or rafts of greenstone within the batholith and vice-versa.

North- to north-northeast-striking, green, massive and unzoned mafic dykes were observed in several locations (Stations 14SK020, 14SK021, 14SK023) to cross-cut all earlier rocks (Figure 4F). One north-northeast-trending mafic dyke intrudes along the general trend of the greenstone belt-granodiorite contact. The mafic dykes are 3-5 metres wide, and based on their consistent character they may represent examples of the same intrusive suite. Judging by their orientation in comparison to the regional geological setting, these mafic dykes are likely associated with either of the north-trending Marathon or northeast-trending Biscotasing suites.

In general, the lithological observations made in Mapping Area B are consistent with the previous mapping results reported by Carter (1982). However, the greenstone belt-granodiorite contact is much broader than portrayed on existing maps (Figure 3B). This lithological heterogeneity continues a bit further west into the eastern portion of Mapping Area B. However, the west-central and western portions of Mapping Area B are relatively homogenous with only minor variation in the relative abundance of accessory minerals and grain size.

5.2 Bedrock Magnetic Susceptibility

At each station, approximately five magnetic susceptibility readings were collected, dispersed evenly across the outcrop to provide a station average value. Additional magnetic susceptibility

measurements were collected and assigned to the corresponding rock type where multiple distinct lithologies were observed within a single rock outcrop.

The complete dataset of magnetic susceptibility measurements is included in Appendix Table A.3. No previous ground-based magnetic susceptibility measurements were available for either of the mapping areas.

5.2.1 Mapping Area A

A total of 200 magnetic susceptibility measurements, representing 42 unique locations/lithologies, were collected within Mapping Area A. The station average measurements range from 3.4 x 10^{-5} to 8.1 x 10^{-3} SI with a mean average of 2.3 x 10^{-3} SI from all stations collected within the area.

Twenty-six stations are representative of granodiorite, with an average reading of 2.4 x 10^{-3} SI and ranging from 3.4 x 10^{-5} to 8.1 x 10^{-3} SI. Similarly, magnetic susceptibility readings in the granite unit based on 15 stations range from 4.2 x 10^{-5} to 6.0 x 10^{-3} SI, with an average of 2.2 x 10^{-3} SI. Only one measurement was collected from the mafic rocks, with a reading of 2.9 x 10^{-4} SI.

In Mapping Area A there is a negligible difference in magnetic susceptibility readings between granodiorite and granite, which is expected based on the similar mineral composition. There is not enough data from mafic rocks in the area to provide a meaningful interpretation of their magnetic character at this stage.

5.2.2 Mapping Area B

In Mapping Area B, a total of 434 measurements were collected, representing 90 locations/lithologies. Station average measurements range from 6.4 x 10^{-5} to 2.9 x 10^{-3} SI with a mean average of 3.7 x 10^{-3} SI.

Of the 90 sets of magnetic susceptibility readings from Mapping Area B; 80 are representative of granodiorite, six of granite, and four of mafic rocks. The average reading in the granodiorite unit is 3.2 x 10^{-3} SI, and ranges from 1.5 x 10^{-4} to 2.0 x 10^{-2} SI. In the granite, values range from 6.4 x 10^{-5} to 3.6 x 10^{-3} SI, with an average of 1.7 x 10^{-3} SI. Average readings from the mafic units are slightly higher than the granodiorite and granite units at 1.6 x 10^{-2} SI, and a range of 9.7 x 10^{-4} to 2.9 x 10^{-2} SI. Overall, magnetic susceptibility measurements are comparable with the data collected from Mapping Area A.

5.3 Bedrock Structure

Mapping areas A and B appear to be relatively structurally homogeneous. No further sub-division into distinct structural domains was deemed to be necessary as a result of the current preliminary observations. Figures 5A through 5J provide summary rose diagrams and equal area lower hemisphere projections of measured structural data for Mapping Areas A and B. The complete dataset of structural observations is included in Appendix Table A.5.

Overall, the observed ductile structures across both mapping areas include a characteristically weak, but occasionally well-developed, foliation with a steep dip and an approximately east-trending (+/- 20°) strike. An associated, weakly developed, mineral stretching lineation was observed in both mapping

areas and displays a consistently shallow plunge (0-20°) to either the east-southeast (110°) or west-northwest (290°).

5.3.1 Mapping Area A

As displayed in Figure 5A the foliations within Mapping Area A have a mean strike and dip of 085°/75°. At one station (14TLG047) gneissic layering was measured with a strike and dip of 108°/80°. Mineral stretching lineation data is compiled for Mapping Area A on Figure 5A and displays a shallow plunge (0-20°) and an approximate trend of 290° or 110°.

5.3.2 Mapping Area B

Figure 5B displays a contoured, equal area lower hemisphere projection of the ductile structure data collected within Mapping Area B. The dominant ductile fabrics observed in Mapping Area B were identified as foliation, however, primary igneous layering was also measured at four stations. The ductile fabric has a mean strike and dip of 103°/87°. Mineral stretching lineation data, compiled for Mapping Area B on Figure 5B, displays a shallow plunge (0-20°) and an approximate trend of 290° or 110°. An additional mineral stretching lineation measurement has a trend and plunge of 192°/17°. Also, one measurement, a slickenside lineation, displays a steeper plunge with a value of 72° and a trend of 317°.

Very little information was previously available with respect to the bedrock structure of the Crossman Lake batholith. The observed easterly strike of the foliation in both Mapping Area A and Mapping Area B is consistent with the trend of ductile lineaments identified in the Phase 1 Lineament Interpretation (SRK, 2013), and foliation measurements from previous mapping (Carter, 1982). The distribution of poles to the foliation may also define a north-trending girdle, which would be consistent with the orientation of regional-scale folds associated with north-directed (D_3) shortening.

5.4 Fracture Characterization and Spacing

The brittle structure of the two mapping areas is described below based on the field observations of fractures. The dataset of structural observations associated with fracture characterization is included in Appendix Table A.4. Field observations of fracture spacing were also undertaken in Mapping Areas A and B in order to provide some baseline geomechanical information for the Schreiber area. The reference material for the nomenclature used in the description of joint spacing is included in Table 3 above. The observations associated with fracture spacing, included in the geomechanical characterization data set, are shown in Appendix Table A.5.

5.4.1 Mapping Area A

The brittle structure of Mapping Area A is characterized by four dominant fracture sets as shown in Figure 5C with both rose diagrams and equal-area lower hemisphere projections. Three steeply-dipping sets were observed, including south-southwest, east-west and northwest-striking fractures. In addition, one shallowly-dipping fracture set was observed. The fracture sets are described in more detail below.

Figures 5D through 5F show a closer look at fracture sets in Mapping Area A for individual subsets of the fracture data shown in Figure 5C, including joints, faults and veins respectively. Two dominant sets of joints are shown in Figure 5D, one with a strike of 196° and dip of 90° and a second with a strike of 272° and dip of 80°. An additional shallowly-dipping joint set is also identified (Figure 5D). Similarly, two dominant sets of faults are shown in Figure 5E, one with a strike of 190° and dip of 90° and a second with a strike of 317° and dip of 87°. Finally, veins also show two dominant sets of structure in Figure 5F, one with a strike of 273° and dip of 79° and a second with a strike of 189° and dip of 80°. All of these subsets are in general agreement with the overall parent dataset (fracture data) displayed in Figure 5D.

Quartz and hematite were present as fracture infilling minerals in steeply-dipping fractures, along with epidote in the case of the south-southwest oriented structures. Only hematite was observed in the shallowly-dipping fractures.

Near Station 14TLG50 (Figure 3A), a 10 m wide sheared zone comprised of a biotite, muscovite and hornblende schist was observed to strike parallel to a northeast-trending topographic lineament. No convincing kinematic indicators were noted. Relative timing relationship information within Mapping Area A was limited to observations from one station (14TLG45) displaying an apparent sinistral offset of a west-trending fracture by a south-southwest trending fault. However, with the limited dataset of field observations it is too early to draw any specific conclusions based on these observations.

Joint spacing within Mapping Area A is characterized by very blocky (10-40 cm) to blocky (30-100 cm) outcrops. At over 50% of the stations visited (29 of 56 stations) the rocks were described as having a joint spacing of 10-40 cm (very blocky). 26 of the remaining stations were described as blocky, having a joint spacing of 30-100 cm while one station was characterized as blocky-disturbed (3-10 cm joint spacing). There was no systematic difference noted in joint spacing between the granodiorite and granitic intrusive phases.

5.4.2 Mapping Area B

The brittle structure of Mapping Area B is characterized by three dominant fracture sets (Figure 5G). These sets include north-northeast, east-southeast and northwest-striking, steeply-dipping, fractures and are described in further detail below.

Figures 5H through 5J show a closer look at fracture sets in Mapping Area B for individual subsets of the fracture data shown in Figure 5G, including joints, faults and veins respectively. Steeply dipping joints were observed within Mapping Area B with two dominant sets as shown in Figure 5H, one with a strike of 109° and dip of 83° and a second with a strike of 017° and dip of 80°. Only one dominant set of faults is shown in Figure 5I and it has a strike of 148° and dip of 79°. Veins also show two dominant sets of structure (Figure 5J), one with a strike of 114° and dip of 79° and a second with a strike of 149° and dip of 68°. All of these subsets are in general agreement with the overall parent dataset (fracture data) displayed in Figure 5G. In addition, several steeply south-dipping ductile shear bands were noted with an average strike of approximately 110°.The shear bands commonly contain a sheared quartz infill and hematite alteration.

Apparent offset of aplite and pegmatite dykes by east-southeast trending faults is generally dextral. One example was observed of an east-southeast trending fault offsetting a north-northeast trending

fracture. However, apparent fracture cross-cutting relationships are commonly spurious and not considered reliable, in the absence of other data. The east-southeast-striking shear bands have an apparent dextral offset. Again, with the limited dataset of field observations it is too early to draw any specific conclusions based on this outcome.

Joint spacing within Mapping Area B is characterized by blocky (30-100 cm) outcrops at a majority of stations (67 of 91). At 18 of 91 stations visited the rocks were noted as having a joint spacing of 10-40 cm (very blocky). A joint spacing of massive (>100 cm) was recorded at 4 of the 91 stations, and two stations were noted as blocky-disturbed with a joint spacing of 3-10 cm. The was no systematic difference noted in joint spacing between the Phase 1 and Phase 2 granodiorite or the granitic sills and dykes. Rock quality was, however, poorer in one mafic dyke where a joint spacing in the blocky-disturbed (3-10 cm) category was observed.

The Phase 1 Lineament Interpretation identified three predominant structural orientations (SRK, 2013) including west-northwest (290°), northwest (320°) and a minor east-northeast orientation. As for Mapping Area A above, a comparison between the fracture sets in Mapping Area B and the existing lineament interpretation by SRK (2013) suggests that only the northwest-oriented features observed in the field show a direct correlation to the interpreted lineament orientations.

5.5 Bedrock Exposure and Surface Constraints

The Schreiber area is characterized, in general, as having large areas of exposed bedrock and only few isolated regions with overburden of significant (mappable) thickness (Figure 2). The road network is limited in terms of direct access to all parts of the mapping areas, especially Mapping Area A. The following descriptions provide further observational detail on the extent of overburden and on the natural constraints to accessing the mapping areas.

5.5.1 Mapping Area A

Bedrock exposure in Mapping Area A is considered good, with much visible rock (Figures 6A and 6B). Valleys between the topographic highs are invariably filled with overburden of some thickness (Figure 6C). Access to Mapping Area A is difficult. Ultimately the observation team accessed Mapping Area A by helicopter over a three day period and even using this mode of transportation there were only sparse, readily-available, safe helicopter landing locations. Helicopter access is also very weather dependent as fog-filled valleys, a common morning condition at least in late fall, can preclude safe passage. Additionally, near vertical cliffs and an adjacent valley characterize a very rugged topography in the southern portion of Mapping Area A. This area requires care to be taken when traveling by foot due to large escarpments and rugged terrain.

5.5.2 Mapping Area B

Bedrock exposure in Mapping Area B is considered very good, with overburden cover generally in the 0 – 2 m range and with visible rock common on topographic highs and along the edges of major lineaments. Valleys between the topographic highs are filled with overburden of some thickness. Road access is excellent in Mapping Area B, with roads crossing the area from east to west with several trails/old road spurs north and south of the main access road (Figure 6D). Steep valleys are present within Mapping Area B (e.g. south of the road network on the western portion of the area), but with care they are generally passable on foot. The extreme southern end of Mapping Area B is only

accessible via helicopter. Several camps exist off of the main access road into Mapping Area B with vehicle traffic along this road common (i.e. one - two cars a day).

The Phase 1 Geoscientific Desktop Preliminary Assessment (AECOM, 2013a) found that the large expanse mapped as being exposed bedrock over the Crossman Lake batholith may exhibit patchy overburden, often less than 1 metre thick, and thickening on the flanks of, and between, bedrock hills. In general, the observations made during the OGGF activity, as described above are consistent with this understanding.

6 SUMMARY

This report presents the results of the Phase 2 Observation of General Geological Features (OGGF) activity conducted in the Schreiber area. Observations were made at select locations, with some requiring helicopter-access, within the two mapping areas (Mapping Area A and Mapping Area B; Figure 2) using the existing road and trail network, where possible (Figures 3A and 3B). The Phase 2 OGGF activity was conducted using a consistent approach to confirm and ground truth the presence and nature of key geological features of the Crossman Lake batholith, including bedrock lithological, structural and geomechanical character, fracture character, bedrock exposure and surface constraints. The work included planning, implementation and synthesis and reporting stages. Main results are summarized below and in Table 6.

The majority of rocks in both of Mapping Area A and B are intrusive rocks that fall into the granitoid subclass (i.e. granodiorites and granites). Two phases of granodiorite, and granitic aplite and pegmatite dykes, are identifiable as distinct lithological phases in Mapping Area B. In contrast, in Mapping Area A they are present in a heterogeneous mixture. Limited dioritoid rocks and mafic dykes and rafts were also identified. In general, the lithological observations are consistent with the previous mapping results reported by Carter (1981) and Carter (1982). The observed ductile structure of the Crossman Lake batholith, across both mapping areas, includes a characteristically weak, but occasionally well-developed, foliation with a steep dip and an approximately east-trending (+/- 20°) strike. An associated, weakly developed, mineral stretching lineation was observed in both mapping areas and displays a consistently shallow plunge (0°-20°) to either the east-southeast (110°) or west-northwest (290°).

Mafic dykes of two different suites were observed to crosscut the main granitoid host rock. One occurrence of a black, foliated dyke with amphibole represents one suite, while several examples of north- to north-northeast-striking, green, massive and unzoned, mafic dykes represent the other suite. One green mafic dike was observed to be 3-5 metres wide. Judging by their orientation in comparison to the regional geological setting, the green and massive mafic dykes are likely associated with either of the north-trending Marathon or northeast-trending Biscotasing suites. It is unclear which regional dyke suite the black foliated dyke is associated with.

Bedrock magnetic susceptibility measurements were recorded at all station locations. Overall, magnetic susceptibility measurements are comparable between Mapping Area A and Mapping Area B. Granodiorite in Mapping Area A yielded an average reading of 2.4×10^{-3} SI (ranging from 3.4×10^{-5} to 8.1×10^{-3} SI), while granite yielded an average of 2.2×10^{-3} SI (ranging from 4.2×10^{-5} to 6.0×10^{-3} SI). Granodiorite in Mapping Area B yielded an average reading of 3.2×10^{-3} SI (ranging from 1.5×10^{-4} to 2.0×10^{-2} SI), while the granitic dykes yielded an average of 1.7×10^{-3} SI (ranging from 6.4×10^{-5} to 3.6×10^{-3} SI). Average readings from the mafic units are slightly higher than the granitoid units at 1.6×10^{-2} SI (ranging from 9.7×10^{-4} to 2.9×10^{-2} SI).

The brittle structure of the Crossman Lake batholith is characterized by four dominant discontinuity sets, including three steeply-dipping fracture sets striking to the south-southwest, west and northwest, as well as one shallowly-dipping set. The latter shallow set was only observed in Mapping Area A. Quartz, hematite and epidote and chlorite were observed to be the dominant infilling minerals. In one instance in Mapping Area A, an apparent sinistral offset of a west-striking fracture by a south-

southwest-striking fracture set was interpreted. In Mapping Area B, east-southeast-striking fractures and shear bands exhibit evidence of dextral movement, including, in one instance, an apparent dextral offset of a north-northeast-striking fracture. Additionally, north-trending topographic lineaments are present in both of Mapping Area A and Mapping Area B. One prominent west-northwest-trending topographic lineament that transects the northern portion of Mapping Area B is coincident with a previously mapped fault. In general, the northwest-striking fractures are the dominant control on topography in both of Mapping Area A and Mapping Area B.

In general, the rocks of the Crossman Lake batholith have an intact rock strength that varies from strong to extremely strong (R4-R6). There was no systematic difference noted in intact rock strength or joint spacing between the granodiorite and granitic intrusive phases. Joint spacing within Mapping Area A is characterized predominantly as very blocky (10-40 cm) to blocky (30-100 cm), with local blocky-disturbed (3-10 cm) conditions. Joint spacing within Mapping Area B is characterized predominantly as blocky (30-100 cm), with local massive (>100 cm) and blocky-disturbed (3-10 cm) conditions.

The Schreiber area is characterized, in general, as having large areas of exposed bedrock and only few isolated regions with overburden of significant (mappable) thickness. Visible rock was observed on the majority of the topographic highs and often on the edge of topographic lows across Mapping Area A and Mapping Area B. Access to Mapping Area A is difficult with only limited helicopter landing locations and steep, impassable valleys. Road access is excellent into the central part of Mapping Area B with roads crossing the area from east to west. The extreme southern end of Mapping Area B is only accessible via helicopter.

Table 6 Summary of Geological Attributes by Mapping Area

Domain	Host Rock Character	Fracture Characterization	Bedrock Exposure and Surface Constraints

Mapping Area A
Northwest of the Township of Schreiber
	• Massive to weakly foliated, medium grained, occasionally fine grained, equigranular granodiorite to granite;
	• Host rock displays two phases of intrusion (granodiorite and granite), which are present in a heterogeneous mixture;
	• Measured magnetic susceptibility ranges from 3.4 x 10^{-5} to 8.1 x 10^{-3} with a mean average of 2.3 x 10^{-3}. There is a negligible difference in magnetic susceptibility readings between granodiorite and granite
	• Very strong to extremely strong (R5-R6)
		• Four dominant fracture sets: three steeply-dipping and one shallowly-dipping fracture sets (including joints, veins and faults);
		• Two dominant sets of faults:
		  • One set with a strike of 190° and dip of 90°
		  • Second set with a strike of 317° and dip of 87°
		• Two dominant steeply dipping joint sets, striking 196° and 272° and dip of 80°, in addition to a shallowly-dipping joint set;
		• Joint spacing is very blocky to blocky;
		• Overall fracture density is moderate to sparse.
			• Bedrock exposure is good;
			• Valleys between topographic highs are invariably filled with overburden of some thickness;
			• Access is difficult, with a limited road network and limited helicopter landing locations;
			• Near vertical cliffs and adjacent valleys make the southern portion of this area largely impassible on foot.

Mapping Area B
Northeast of the Township of Schreiber
	• Two phases of granodiorite:
	  • Phase 1 Granodiorite is weakly foliated, medium to coarse grained, and inequigranular.
	  • Phase 2 Granodiorite is massive to weakly foliated, medium grained, occasionally fine grained, and equigranular.
	• Phase 1 granodiorite more prevalent on the eastern margin, and characterized by the presence of mafic rafts, sills, sheets, and xenoliths;
	• Granitic aplitic and pegmatite dykes and sills locally observed, comprising up to 15% of the rock volume in some outcrops;
	• N- to NNE-striking mafic dykes (Marathon or Biscotasing suite) observed in several locations;
	• Average magnetic susceptibility in granodiorite is 3.2 x 10^{-3}, and ranges from 1.5 x 10^{-4} to 2.0 x 10^{-2}. In the granite, values range from 6.4 x 10^{-5} to 3.6 x 10^{-3}, with an average of 1.7 x 10^{-3};
	• Very strong to extremely strong (R5-R6).
		• Three dominant steeply-dipping fracture sets, including joints, faults, and shear zones;
		• Only one dominant set of faults observed, with a strike of 148° and dip of 79°;
		• Two steeply dipping joints sets, striking 109° and 017°;
		• Several steeply south-dipping ductile shear bands observed with an average strike of approximately 110°;
		• No significant fault damage zones observed;
		• Joint spacing is block to very blocky;
		• Overall fracture density is moderate to sparse.
			• Bedrock exposure is very good
			• Valleys between topographic highs are invariably filled with overburden of some thickness;
			• Road access is excellent, with roads crossing the area from east to west with several trails/old road spurs north and south of the main access road;
			• Steep valleys are present, but with care they are generally passable on foot.
			• Extreme southern end only accessible via helicopter.

7 REFERENCES

AECOM (AECOM Canada Ltd.), 2013a. Phase 1 Geoscientific Desktop Preliminary Assessment of Potential Suitability for Siting a Deep Geological Repository for Canada's Used Nuclear Fuel, Township of Schreiber, Ontario. Prepared for Nuclear Waste Management Organization (NWMO). NWMO Report Number: APM-REP-06144-0035.

AECOM Canada Ltd., 2013b. Phase 1 Geoscientific Desktop Preliminary Assessment, Terrain and Remote Sensing Study, Township of Schreiber, Ontario. Prepared for Nuclear Waste Management Organization (NWMO). NWMO Report Number: APM-REP-06144-0036.

Barton N.R., 1978. Suggested Methods for the Quantitavive Description of Discontinuities in Rock Masses, International Journal of Rock Mechanics and Mining Sciences, 15 (6), 319-368.

Bostock, H.S. 1970. Physiographic subdivisions of Canada; In: Geology and Economic Minerals of Canada, Geological Survey of Canada, Economic Geology Report no. 1, p.11-30.

Buchan, K.L. and Ernst, R.E. 2004. Diabase Dyke Swarms and Related Units in Canada and Adjacent Regions. Geological Survey of Canada, Map 2022A, scale 1:5,000,000.

Buchan, K.L., Halls, H.C. and Mortensen, J.K. 1996. Paleomagnetism, U-Pb geochronology, and Geochemistry of Marathon Dykes, Superior Province, and Comparison With the Fort Frances Wwarm. Canadian Journal of Earth Sciences, v. 33, pp. 1583-1595.

Carter, M.W, 1981. Precambrian Geology of the Schreiber Area, West Part, Thunder Bay District, Ontario Geological Survey, Map P 2390, Geological Series-Preliminary Map. Scale 1:15 840 or 1 inch to ¼ mile. Geology 1979

Carter, M.W. 1982. Precambrian Geology of the Terrace Bay Area, Northwest Sheet, Thunder Bay District, Ontario Geological Survey, Map P 2556, Geological Series-Preliminary Map. Scale 1:15 840 or 1 inch to ¼ mile. Geology 1981

Carter, M.W. 1988. Geology of Schreiber-Terrace Bay area, District of Thunder Bay; Ontario Geological Survey, Open File Report 5692, 287p.

CDED Digital Elevation Model, Geobase, 2011. Geobase 2011, Canadian Digital Elevation Data: http://www.geobase.ca/

Geofirma (Geofirma Engineering Ltd.), 2015. Phase 2 Geoscientific Preliminary Assessment, Findings from Initial Field Studies, Township of Schreiber, Ontario. Prepared for the Nuclear Waste Management Organization (NWMO), NWMO Report Number: APM-REP-06145-0005.

Geographical Township Improved: Land Information Ontario (LIO), http://www.appliometadata.lrc.gov.on.ca/geonetwork/srv/en/main.home.

Golder (Golder Associates Ltd.). 2011. Initial Screening for Siting a Deep Geological Repository for Canada's Used Nuclear Fuel, Township of Schreiber, Ontario; Nuclear Waste Management Organization, Golder Associates Report 10-1152-0110 (5000), 32p, plus figures.

Hamilton, M.A., David, D.W., Buchan, K.L. and Halls H.C. 2002. Precise U-Pb Dating of Reversely Magnetized Marathon Diabase Dykes and Implications for Emplacement of Giant Dyke Wwarms Along the Southern Margin of the Superior Province, Ontario. Geological Survey of Canada, Current Research 2002-F6, 10 p.

Hoek, E. 2007. Practical Rock Engineering. e-book 47 p. https://www.rocscience.com/hoek/corner/Practical_Rock_Engineering.pdf

Lin, S. 2001. Stratigraphic and Structural Setting of the Hemlo Gold Deposit, Ontario, Canada; Economic Geology, v. 96, p.477–507.

LIO OHN Waterbody: Land Information Ontario (LIO), http://www.appliometadata.lrc.gov.on.ca/geonetwork/srv/en/main.home

LIO OHN Watercourse: Land Information Ontario (LIO), http://www.appliometadata.lrc.gov.on.ca/geonetwork/srv/en/main.home

Muir, T.L. 2003. Structural Evolution of the Hemlo Greenstone Belt in the Vicinity of the World-Class Hemlo Gold Deposit. Canadian Journal of Earth Sciences, vol. 40, pp. 395-430.

MRD126_REV1-Bedrock Geology of Ontario, 2011. Ontario Geological Survey (OGS), 2011, 1:250 000 Scale Bedrock Geology of Ontario; OGS Miscellaneous Release–Data 126 - Revision 1.

NWMO (Nuclear Waste Management Organization), 2010. Moving Forward Together. Process for Selecting a Site for Canada's Deep Geological Repository for Used Nuclear Fuel. Nuclear Waste Management Organization, May 2010.

NWMO (Nuclear Waste Management Organization), 2013. Preliminary Assesment for Siting a Deep Geological Repository for Canada's Used Nuclear Fuel - Township of Ignace, Ontario - Findings from Phase One Studies. NWMO Report APM-REP-06144-0009. Toronto, Canada.

Provincial Park and Forested Reserves: MNR, LIO, 2009-2013. Land Information Ontario (LIO). http://www.appliometadata.lrc.gov.on.ca/geonetwork/srv/en/main.home.

Road Segment 2014 AECOM: Land Information Ontario (LIO) http://www.appliometadata.lrc.gov.on.ca/geonetwork/srv/en/main.home.

Shimamura, K., Williams, S. P. and Buller, G. 2008. Ganfeld User Guide: a Map-Based Field Data Capture System for Geoscientists; Geological Survey of Canada, Open File 5912, 90 p.

SGL (Sander Geophysics Limited), 2015. Phase 2 Geoscientific Preliminary Assessment, Acquisition, Processing and Interpretation of High-Resolution Airborne Geophysical Data, Township of Schreiber, Ontario. Prepared for Nuclear Waste Management Organization (NWMO). NWMO Report Number: APM-REP-06145-0006.

SRK, 2013. Phase 1 Geoscientific Desktop Preliminary Assessment, Lineament Interpretation, Township of Schreiber, Ontario, Nuclear Waste Management Organization Report Number 06144-0038. November 2013, 50p plus figures.

Thurston, P.C. 1991. Archean Geology of Ontario: Introduction; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, pp. 3-25.

Williams, H. R., G.M. Stott, K.B. Heather, T.L. Muir and R.P. Sage. 1991. Wawa Subprovince. In Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, pp. 485-525.

460000 470000 480000 490000

5430000 5420000 5410000 5400000

N

Rope Lake
Carib Lake
Aguasabon Lake
Big Duck Lake
Winston Lake
Winston Lake Mine Site
GRAVEL RIVER CONSERVATION RESERVE
Pays Plat Lake
Charlotte Lake
Lyne Lake
SCHREIBER CHANNEL PROVINCIAL NATURE RESERVE
Ellis Lake
RAINBOW FALLS PROVINCIAL PARK
Rossport
Whitesand Lake
Selim
Walker Lake
Schreiber
Hays Lake
Aguasabon River
Terrace Bay
LAKE SUPERIOR ARCHIPELAGO CONSERVATION RESERVE
Lake Superior (lac Supérieur)
LAKE SUPERIOR NORTH SHORE CONSERVATION RESERVE

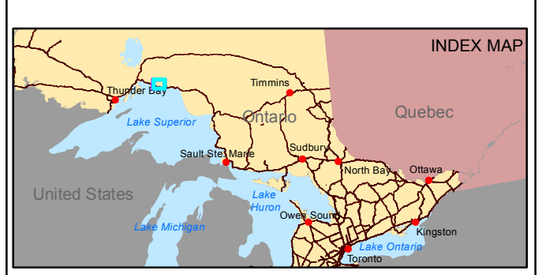
G:\Data\Project\Schreiber\Maps\OGGF Report Maps\Schreiber_Figure1_Location Map and Area.mxd

LEGEND

- City / Town
- Township of Schreiber
- Township of Terrace Bay
- Main Road
- Local Road
- Railway
- Transmission Line
- Waterbody, Permanent
- Watercourse, Permanent
- Watercourse, Intermittent
- Winston Lake Mine, Past Producing Mine Without Reserves

Protected Areas

- Provincial Park
- Conservation Reserve
- Conservation Reserve (Recommended)



SCALE 1:125,000

0 1 2 4 6 8

Kilometers

PROJECTION: UTM NAD83 Zone 16N
SOURCE:
Provincial Park and Forested Reserves: MNR, LIO, 2009-2013
Road: MNR Road Segment 2014, AECOM
Township: LIO Geographical Township Improved
Waterbody: LIO OHN Waterbody
Watercourse: LIO OHN Watercourse
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-10

NWMO Observation of General Geological Features, Schreiber Area

TITLE

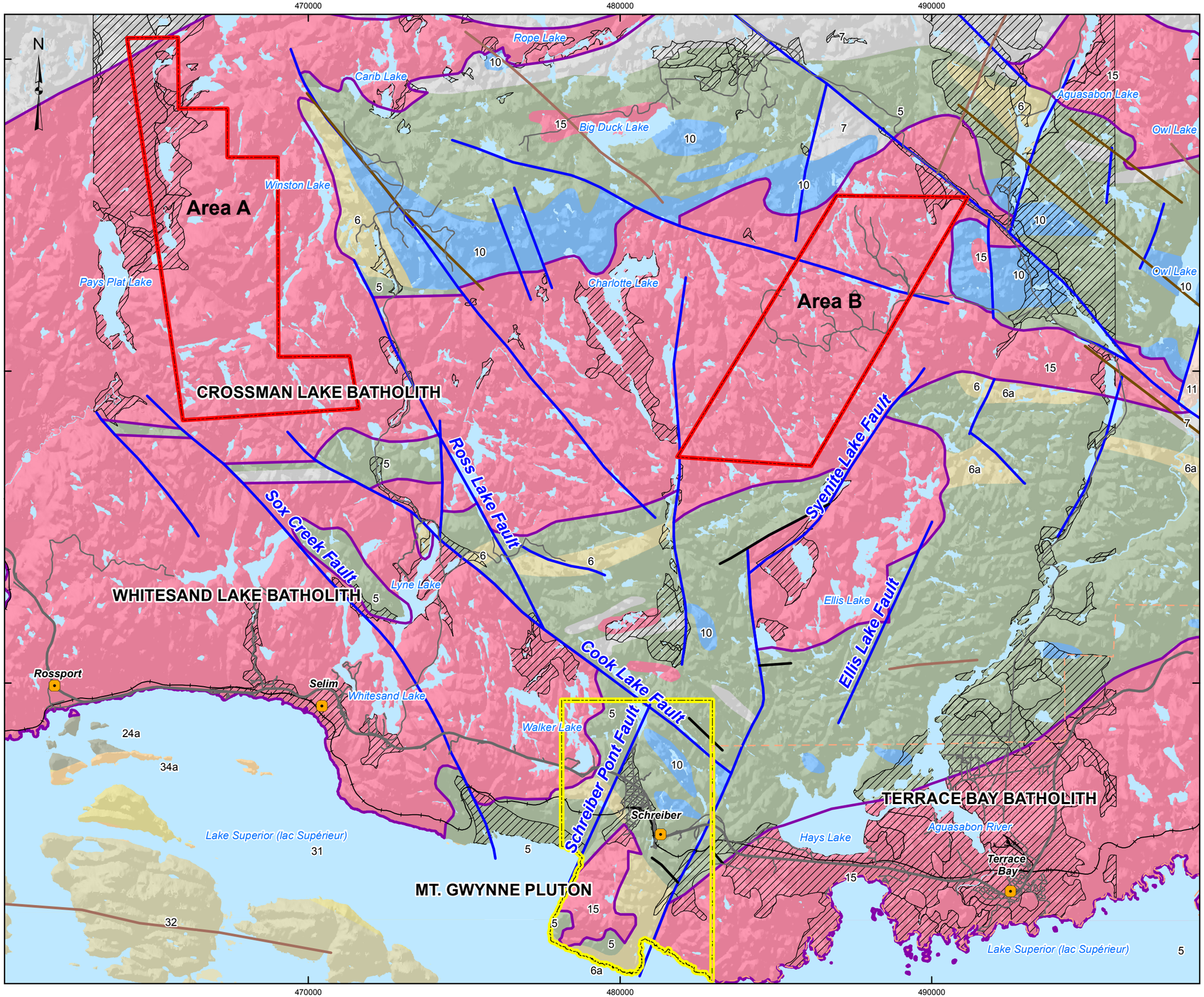
The Schreiber Area

FIGURE 1

DESIGN: VMS
CAD/GIS: VMS
CHECK: SNS
REV: 0

DATE: 04/02/2015

Geofirma Engineering Ltd



LEGEND

- City / Town
- Schreiber Mapping Areas
- Township of Schreiber
- Main Road
- Railway
- Waterbody, Permanent
- Watercourse, Permanent
- Watercourse, Intermittent
- Mapped Fault

Mapped Dyke

- Matachewan dyke
- Marathon, Kapuskasing or Biscotasing Mafic Dyke
- Dyke (Other)
- Outline of Batholith/Pluton
- Areas with Overburden Cover

Bedrock Geology

- 34a Logan and Nipigon sills (1109 Ma): diabase sills
- 32 Osler Gp., Maminse Point Fm., Michipicoten
- 31 Sibley Gp.
- 24a Rove formation: argillite, shale, wacke, minor volcanic rocks
- 15 Massive granodiorite to granite
- 11 Gneissic Tonalite Suite
- 10 Mafic and ultramafic rocks
- 7 Metasedimentary rocks
- 6 Felsic to intermediate metavolcanic rocks
- 6a Dacitic and Andesitic flows, tuffs and breccias
- 5 Mafic to intermediate metavolcanic rocks

SCALE 1:123,047

0 1 2 4 6 8 Kilometers

PROJECTION: UTM NAD83 Zone 16N
SOURCE:
Geology: MRD126_REV1-Bedrock Geology of Ontario, 2011, AECOM
Road: MNR Road Segment 2014, AECOM
Township: LIO Geographical Township Improved, 2014
Underlying DEM: CDED Digital Elevation Model, Geobase, 2011
Waterbody: LIO OHN Waterbody, 2014
Watercourse: LIO OHN Watercourse, 2014
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-10

NWMO Observation of General Geological Features, Schreiber Area

TITLE **Bedrock Geology and Overburden Cover of the Schreiber Area**

FIGURE 2

DESIGN: VMS
CAD/GIS: VMS
CHECK: SNS
REV: 0

DATE: 2/17/2015

Geofirma Engineering Ltd

G:\Data\Project\Schreiber\Maps\OGGF Report Maps\Schreiber_Figure2_Bedrock Geology and Overburden Cover.mxd

460000

470000

5430000

5420000

N

7

15

10

5

6

Carib Lake

Winston Lake

Pays Plat Lake

Ross Lake Fault

Sox Creek Fault

CROSSMAN LAKE BATHOLITH

14SK089
14SK088
14SK087
14SK086
14SK085
14SK084
14SK083
14SK051
14SK050
14SK052
14TLG049
14SK049
14SK048
14SK046
14SK047
14SK045
14SK044
14SK043
14SK066
14SK042
14SK067
14SK041
14SK068
14SK040
14SK039
14SK070
14TLG040
14SK071
14TLG041
14SK069
14SK073
14TLG046
14SK072
14TLG045
14SK074
14SK075
14TLG044
14SK076
14TLG043
14SK077
14TLG042
14SK078
14SK038
14TLG053
14TLG050
14TLG051
14TLG052
14TLG048
14TLG047
14SK001
14SK002
14SK003
14SK004
14SK005

LEGEND

- Schreiber Mapping Area
- Highway
- Local Road
- Railway
- Waterbody, Permanent
- Watercourse, Permanent
- Watercourse, Intermittent

Mapped Dyke

- Matachewan Dyke
- Marathon, Kapuskasing or Biscotasing Mafic Dyke
- Dyke (Other)
- Outline of Batholith/Pluton
- Mapped Geological Fault
- Station Visited

Bedrock Geology

- 15 Massive granodiorite to granite
- 10 Mafic and ultramafic rocks
- 7 Metasedimentary rocks
- 6 Felsic to intermediate metavolcanic rocks
- 5 Mafic to intermediate metavolcanic rocks

INDEX MAP

SCALE 1:55,000

0 0.5 1 2 3 4

Kilometers

PROJECTION: UTM NAD83 Zone 16N
SOURCE:
Geology: MRD126_REV1-Bedrock Geology of Ontario, 2011, AECOM
Road: MNR Road Segment 2014, AECOM
Underlying DEM: CDED Digital Elevation Model, Geobase, 2011
Waterbody: LIO OHN Waterbody
Watercourse: LIO OHN Watercourse
Produced by Geofirma Engineering Ltd under license from
Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-10 NWMO Observation of General Geological Features, Schreiber Area

TITLE **Bedrock Geology and Station Locations in Mapping Area A**

FIGURE 3A

DESIGN: VMS
CAD/GIS: VMS
CHECK: SNS
REV: 0

DATE: 2/17/2015

Geofirma Engineering Ltd

G:\Data\Project\Schreiber\Maps\OGGR Report Maps\Schreiber_Figure3a_Stations Visited.mxd

480000

490000

5420000

N

Big Duck Lake

Charlotte Lake

Aguasabon Lake

Syenite Lake Fault

14TLG034
14TLG033
14TLG032
14SK007
14SK008
14SK010
14SK012
14SK013
14SK019
14SK006
14SK009
14SK011
14SK014
14SK016
14SK018
14SK059
14SK060
14SK061
14SK062
14SK058
14SK057
14SK056
14SK055
14SK054
14SK053
14SK015
14SK017
14TLG039
14TLG038
14TLG037
14TLG035
14SK020
14TLG036
14SK021
14SK065
14SK064
14SK022
14SK023
14SK024
14SK025
14SK026
14SK027
14SK029
14SK030
14SK033
14SK034
14SK031
14SK063
14SK028
14SK035
14SK032
14SK037
14SK036
14TLG005
14TLG002
14TLG006
14TLG008
14TLG010
14TLG014
14TLG015
14TLG017
14TLG004
14TLG003
14TLG001
14TLG007
14TLG009
14TLG011
14TLG012
14TLG013
14TLG026
14TLG016
14TLG018
14TLG022
14TLG023
14TLG024
14TLG025
14TLG027
14TLG028
14TLG029
14TLG030
14TLG031
14TLG054
14TLG021
14TLG020
14TLG019
14SK090
14SK079
14SK081
14SK082
14SK080
14SK091

5
6
6a
7
10
15

LEGEND

- Schreiber Mapping Area
- Highway
- Local Road
- Railway
- Waterbody, Permanent
- Watercourse, Permanent
- Watercourse, Intermittent

Mapped Dyke

- Matachewan Dyke
- Marathon, Kapuskasing or Biscotasing Mafic Dyke
- Dyke (Other)
- Outline of Batholith/Pluton
- Mapped Geological Fault
- Station Visited

Bedrock Geology

- 15 Massive granodiorite to granite
- 10 Mafic and ultramafic rocks
- 7 Metasedimentary rocks
- 6 Felsic to intermediate metavolcanic rocks
- 6a Dacitic and Andesitic flows, tuffs and breccias
- 5 Mafic to intermediate metavolcanic rocks

INDEX MAP

SCALE 1:45,000

0 0.25 0.5 1 1.5 2

Kilometers

PROJECTION: UTM NAD83 Zone 16N
SOURCE:
Geology: MRD126_REV1-Bedrock Geology of Ontario, 2011, AECOM
Road: MNR Road Segment 2014, AECOM
Underlying DEM: CDED Digital Elevation Model, Geobase, 2011
Waterbody: LIO OHN Waterbody
Watercourse: LIO OHN Watercourse
Produced by Geofirma Engineering Ltd under license from
Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-10

NWMO Observation of
General Geological Features, Schreiber Area

TITLE

Bedrock Geology and Station Locations in Mapping Area B

FIGURE 3B

DESIGN: VMS
CAD/GIS: VMS
CHECK: SNS
REV: 0

DATE: 2/17/2015

Geofirma Engineering Ltd

G:\Data\Project\Schreiber\Maps\OGGF Report Maps\Schreiber_Figure3b_Stations Visited_.mxd

(A)

(B)

(C)

(D)

(E)

(F)

Representative Lithology of Rock Units in the Two Mapping Areas

**Both Areas are within the Crossman Lake Batholith*

(A) Mapping Area A, quartz-rich granodiorite specimen, leucocratic, weakly foliated, Sta. 14TLG045

(B) Mapping Area A, Black, foliated mafic dyke crosscuts host granodiorite, Sta. 14TLG046

(C) Mapping Area B, biotite-hornblende granodiorite specimen, melanocratic, Sta. 14TLG039

(D) Mapping Area B, mafic xenoliths within hornblende-biotite granodiorite, 14TLG026

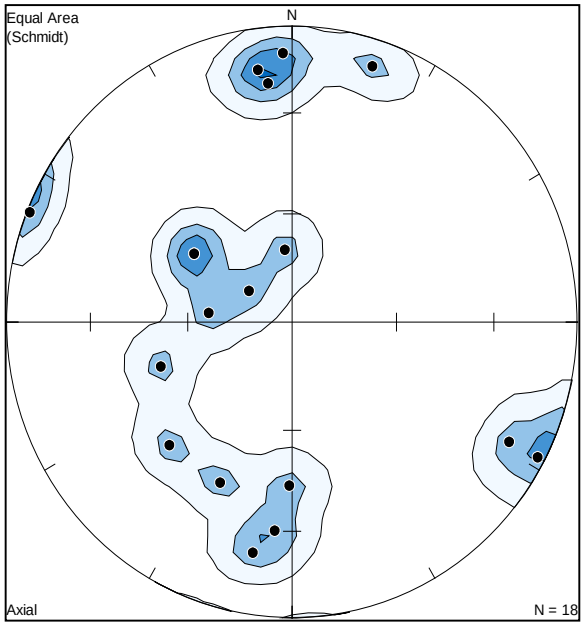
(E) Mapping Area B, Aplite dyke and sills crosscutting host granodiorite, 14SK031

(F) Mapping Area B, Green, massive and unzoned mafic dyke, Sta. 14SK020

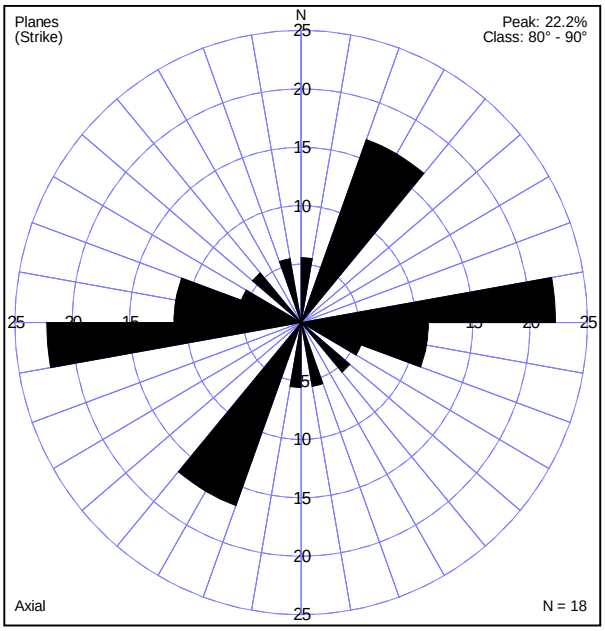
10-214-10 Observation of General Geological Features in Schreiber Area

FIGURE 4	10-214-10_Figure4_Photos_R0.doc	Prepared by: VMS Reviewed by: SNS Date: Feb 18, 2015

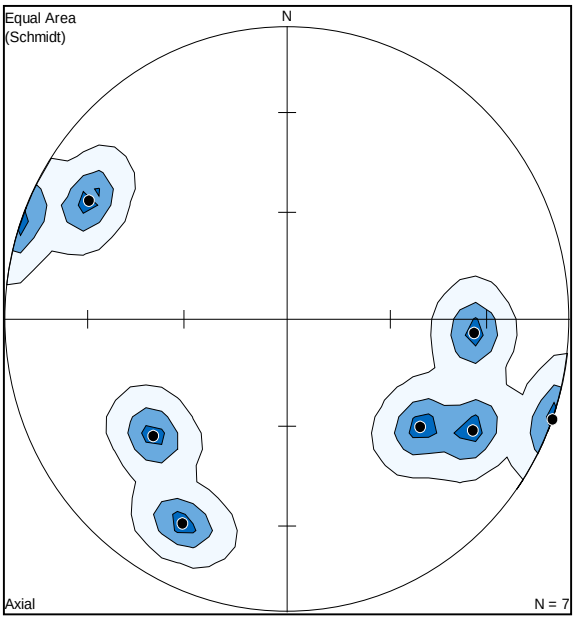
Geofirma Engineering Ltd



A.

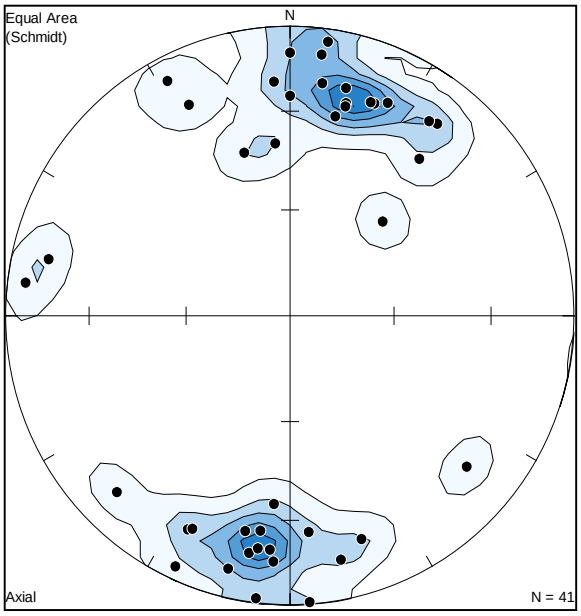


B.

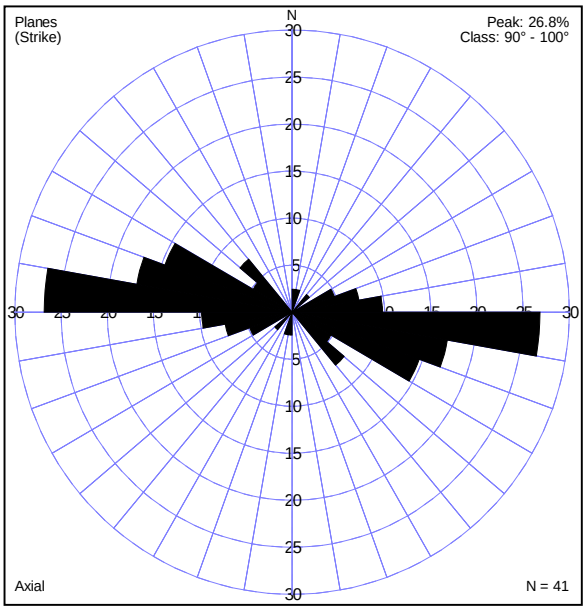


C.

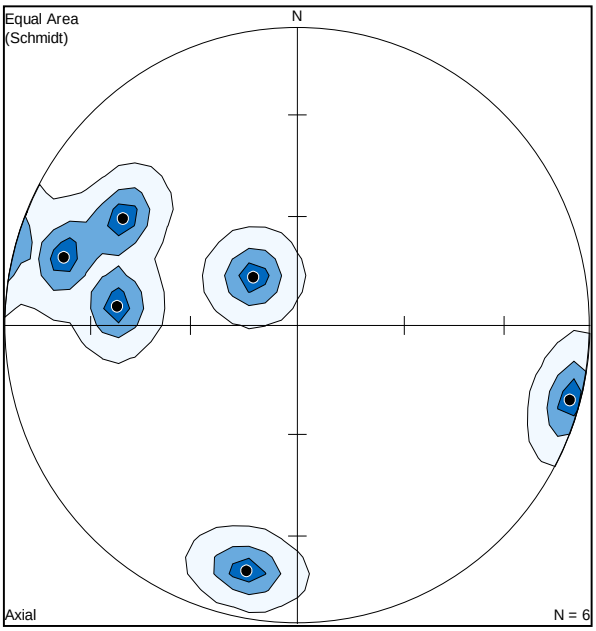
Mapping Area A Foliation and Lineation Data. Top - Equal Area Lower Hemisphere Projection (left) and Rose Diagram (right) of Foliation. Bottom - Equal Area Lower Hemisphere Projection of Lineation Data.			Prepared by: VMS
			Reviewed by: SNS
10-214-10 Observation of General Geologic Features in the Schreiber Area			
FIGURE 5A	Doc. No.: Figure5A_AreaA_FoliationLineation.xls	Geofirma Engineering Ltd	Date: 17-Feb-15



A.

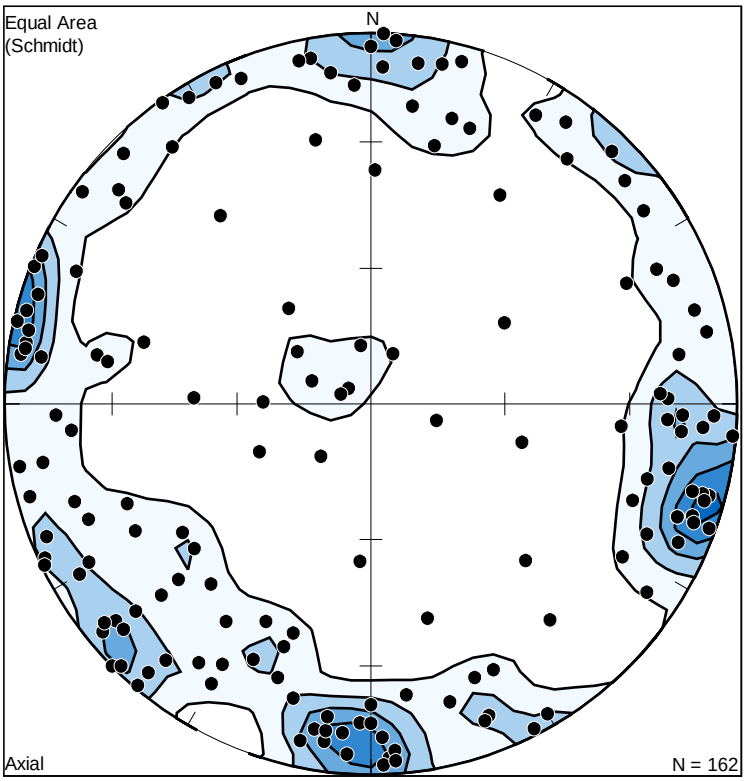


B.

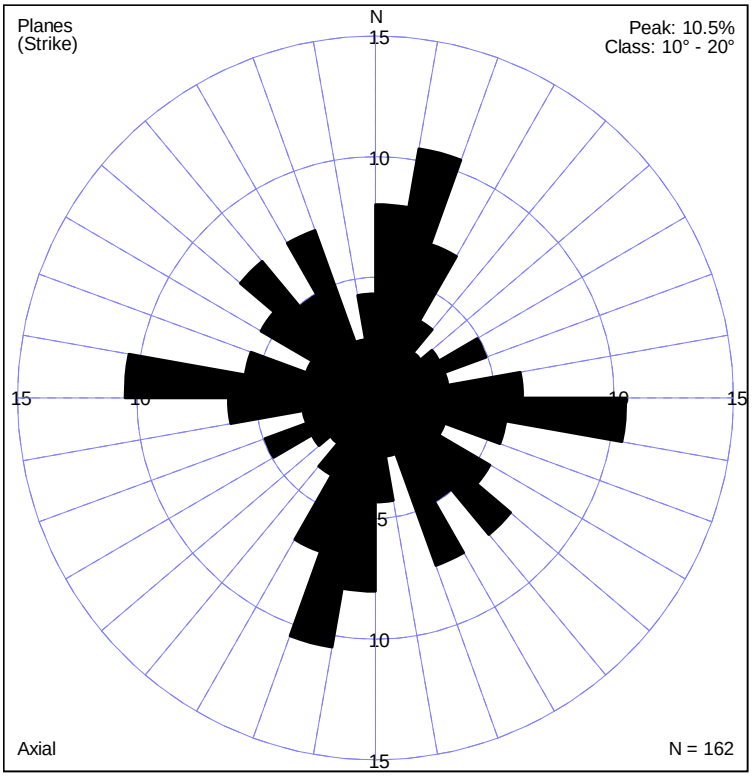


C.

Mapping Area B Foliation and Lineation Data. Top - Equal Area Lower Hemisphere Projection (left) and Rose Diagram (right) of Foliation. Bottom - Equal Area Lower Hemisphere Projection of Lineation Data.			Prepared by: VMS
			Reviewed by: SNS
10-214-10 Observation of General Geologic Features in the Schreiber Area			
FIGURE 5B	Doc. No.: Figure5B_Areab_FoliationLineation.xls	Geofirma Engineering Ltd	Date: 17-Feb-15

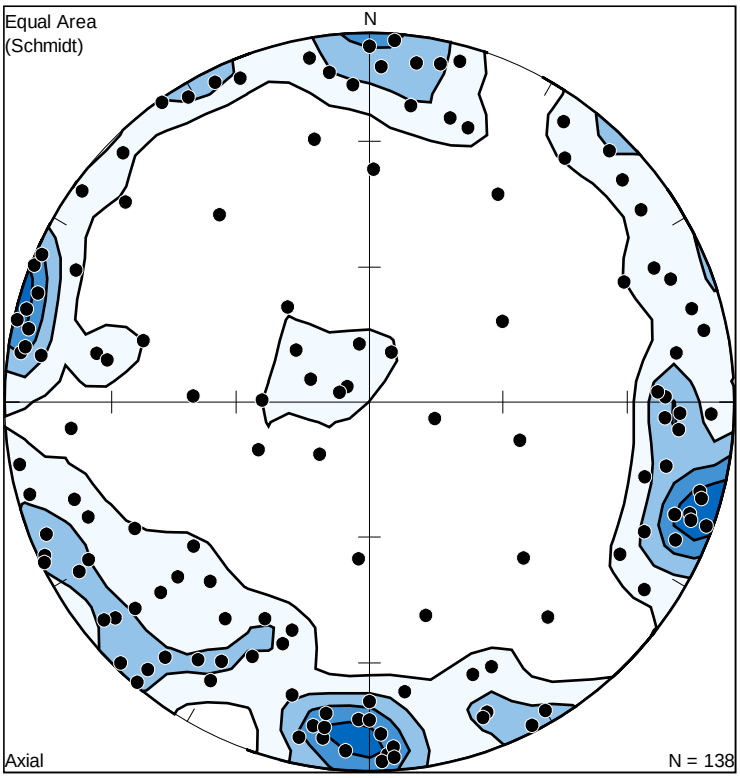


A.

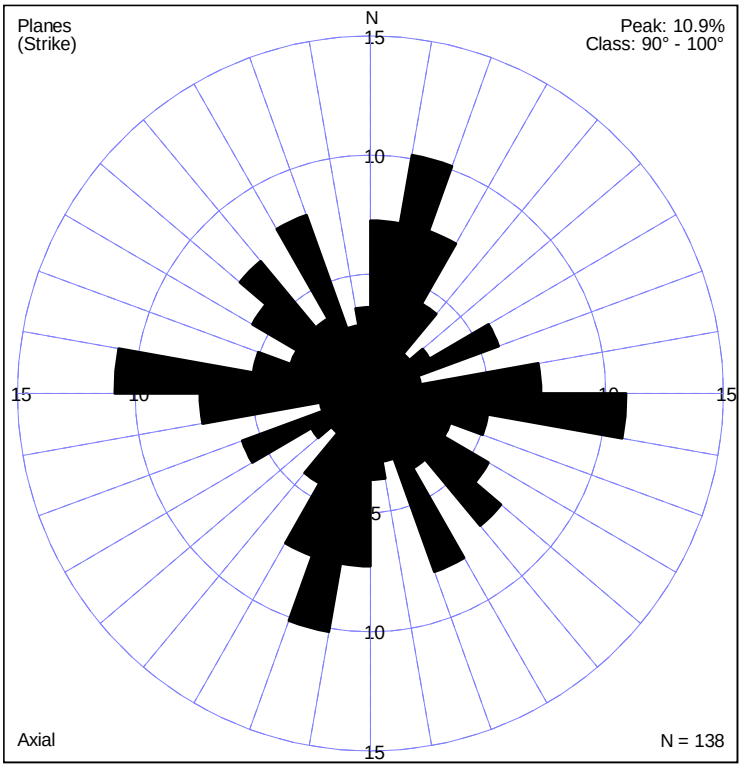


B.

Mapping Area A Fracture Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.			Prepared by: VMS
10-214-10 Observation of General Geologic Features in the Schreiber Area			Reviewed by: SNS
FIGURE 5C	Doc. No.: Figure5C_AreaA_Fracture.xls	Geofirma Engineering Ltd	Date: 17-Feb-15

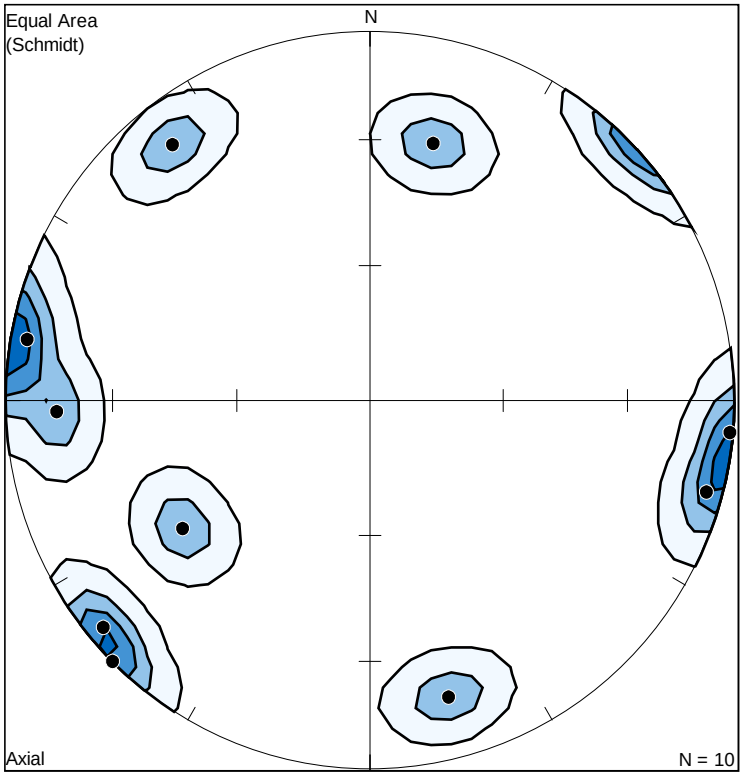


A.

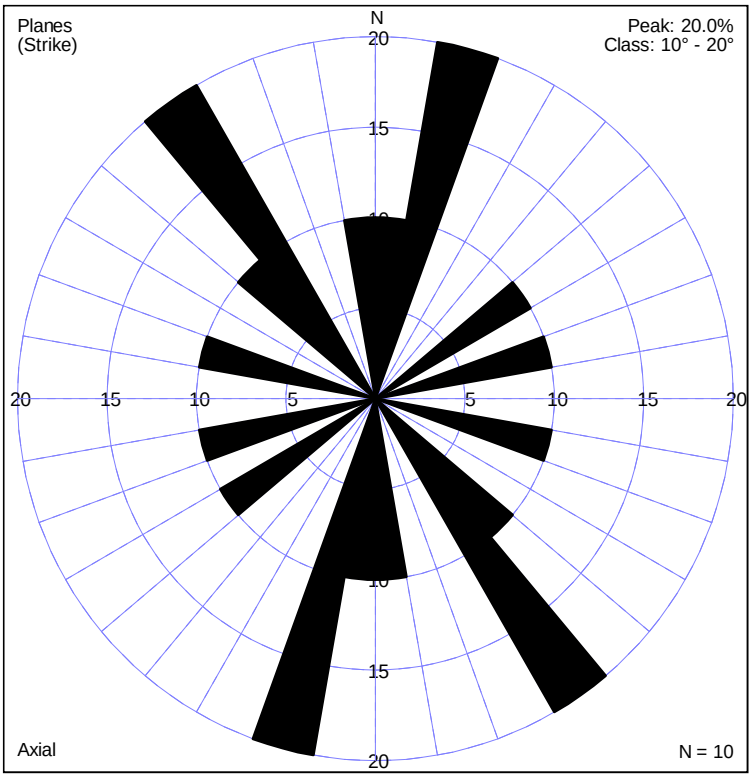


B.

Mapping Area A Joint Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.			Prepared by: VMS
10-214-10 Observation of General Geologic Features in the Schreiber Area			Reviewed by: SNS
FIGURE 5D	Doc. No.: Figure5D_AreaA_Joints.xls	Geofirma Engineering Ltd	Date: 17-Feb-15



A.

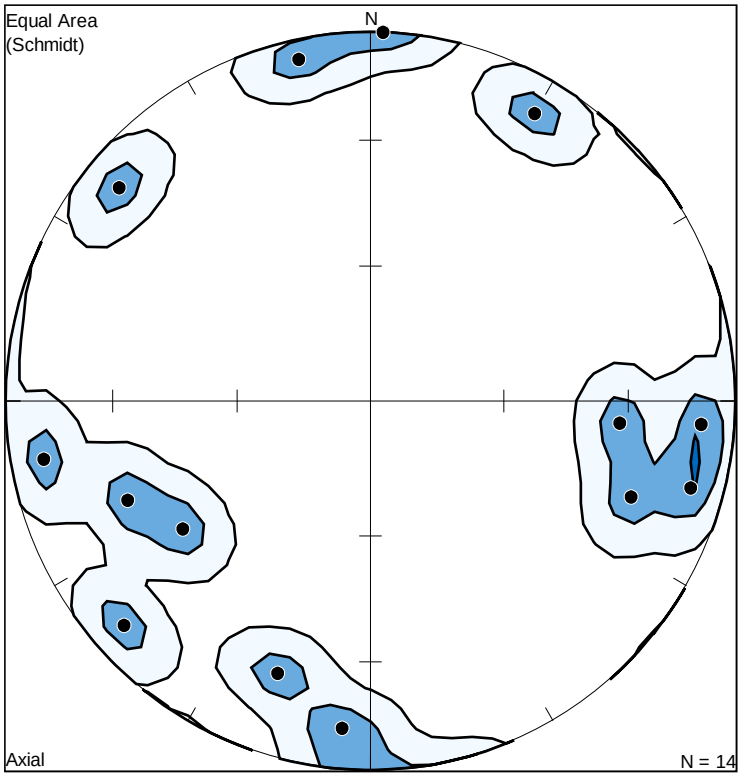


B.

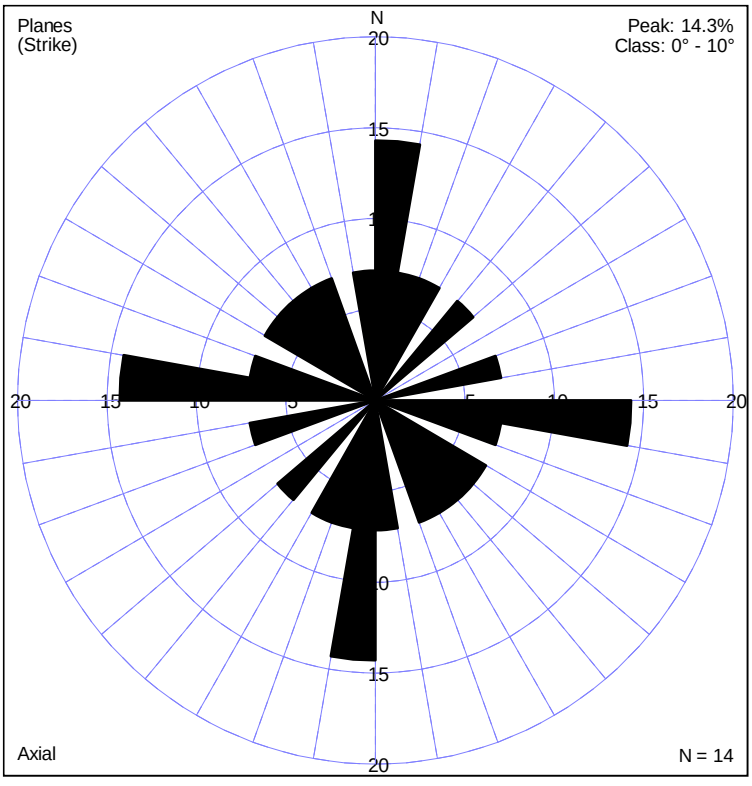
Mapping Area A Fault Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram

10-214-10 Observation of General Geologic Features in the Schreiber Area

FIGURE 5E	Doc. No.: Figure5E_AreaA_Faults.xls	Geofirma Engineering Ltd	Prepared by: VMS Reviewed by: SNS Date: 17-Feb-15

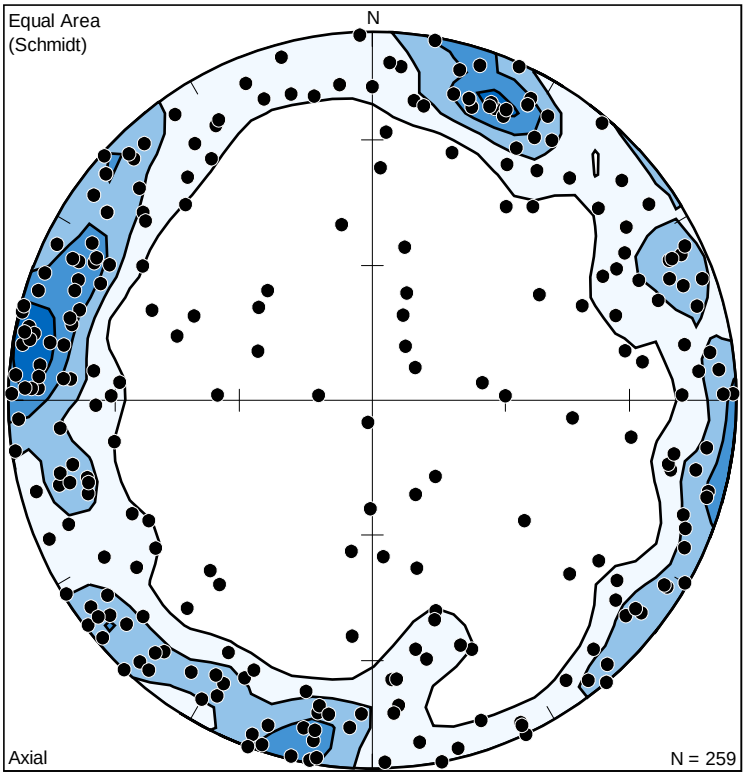


A.

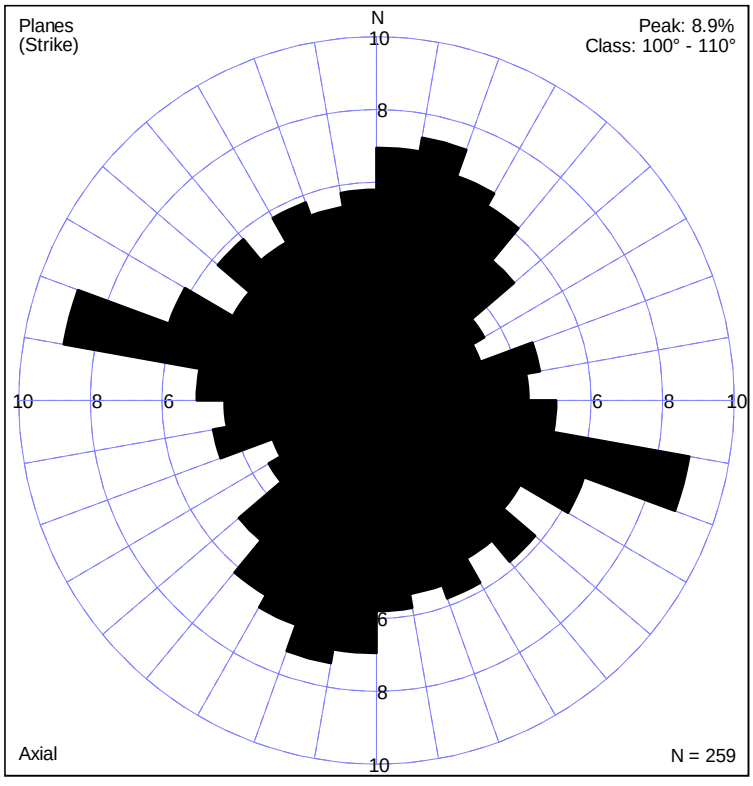


B.

Mapping Area A Vein Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.			Prepared by: VMS
10-214-10 Observation of General Geologic Features in the Schreiber Area			Reviewed by: SNS
FIGURE 5F	Doc. No.: Figure5F_AreaA_Veins.xls	Geofirma Engineering Ltd	Date: 17-Feb-15



A.

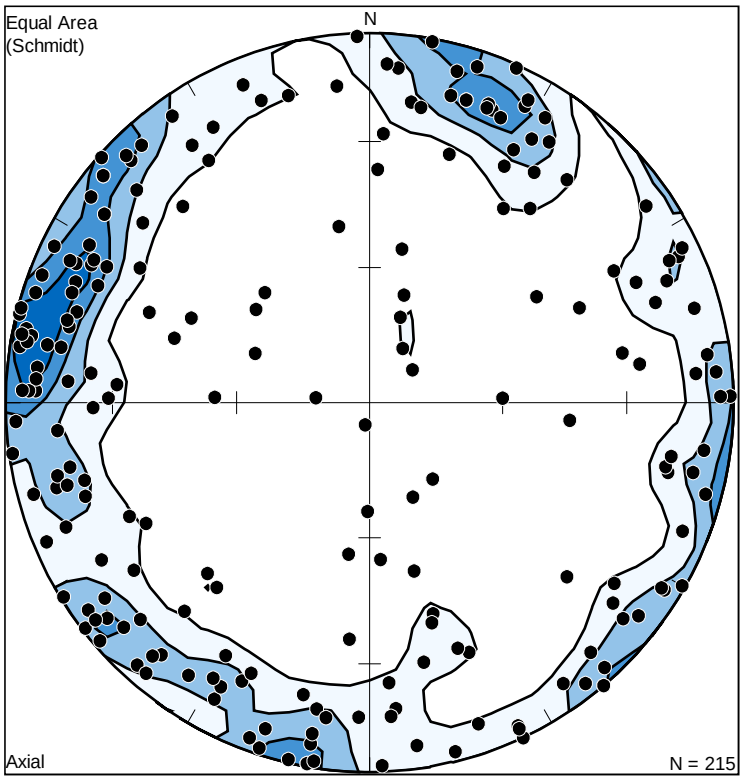


B.

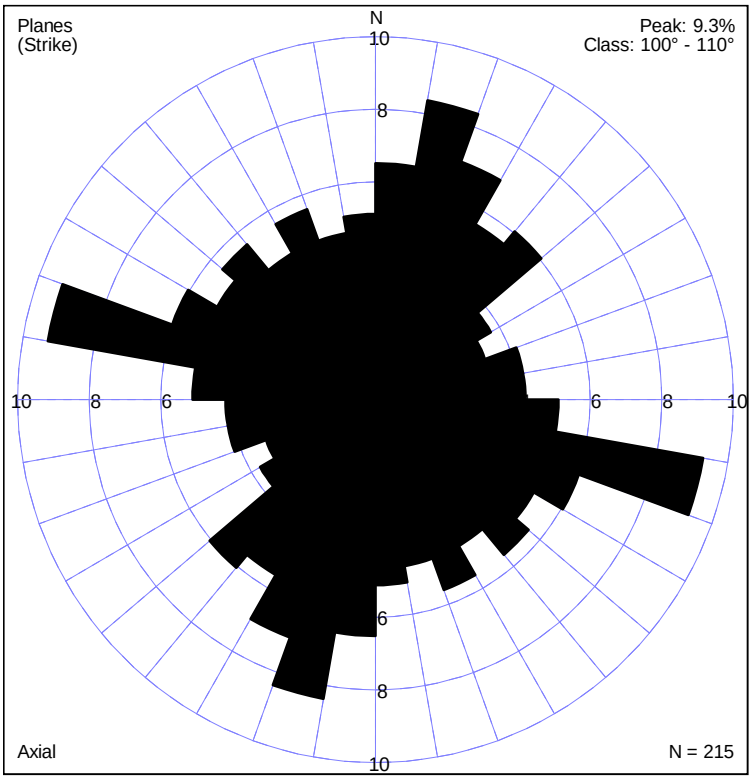
Mapping Area B All Fracture Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.

10-214-10 Observation of General Geologic Features in the Schreiber Area

FIGURE 5G	Doc. No.: Figure5G_AreaB_Fractures.xls	Geofirma Engineering Ltd	Prepared by: VMS Reviewed by: SNS Date: 17-Feb-15

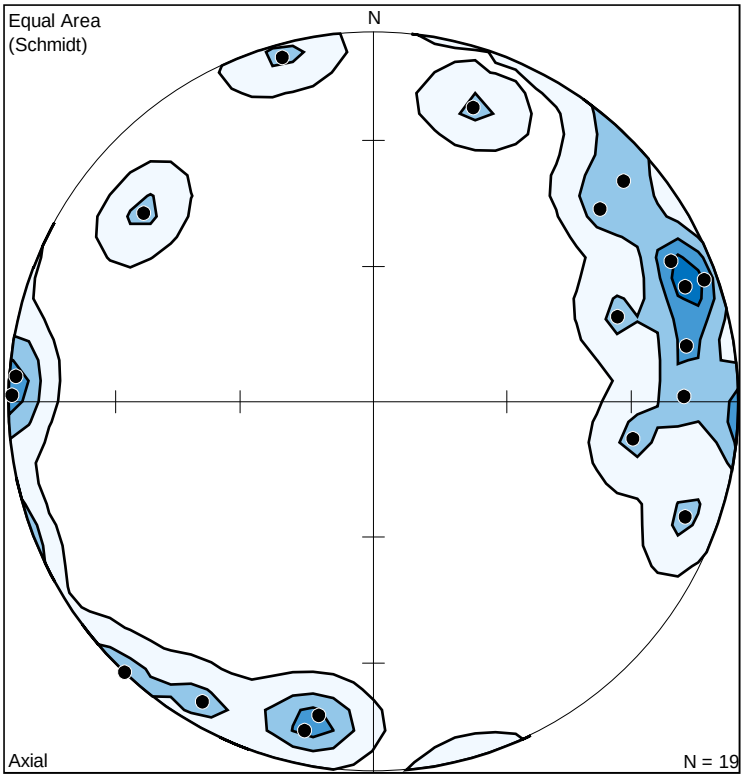


A.

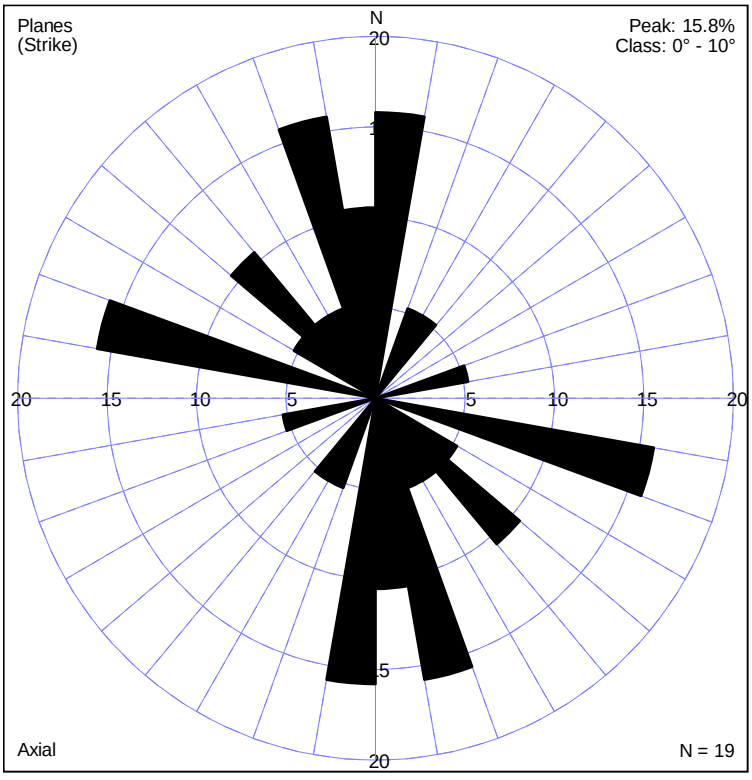


B.

Mapping Area B Joint Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.			Prepared by: VMS
10-214-10 Observation of General Geologic Features in the Schreiber Area			Reviewed by: SNS
FIGURE 5H	Doc. No.: Figure5H_AreaB_Faults.xls	Geofirma Engineering Ltd	Date: 17-Feb-15



A.

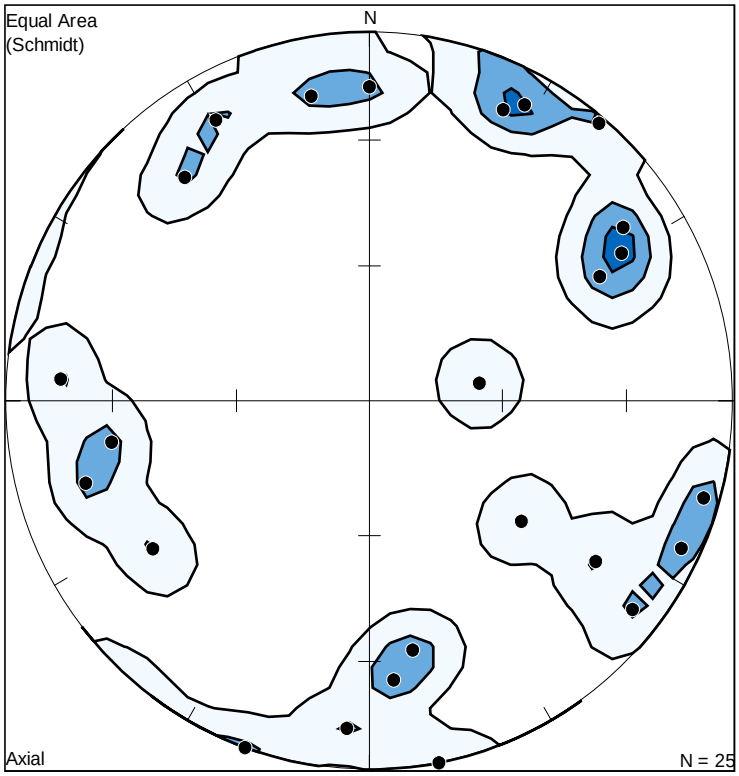


B.

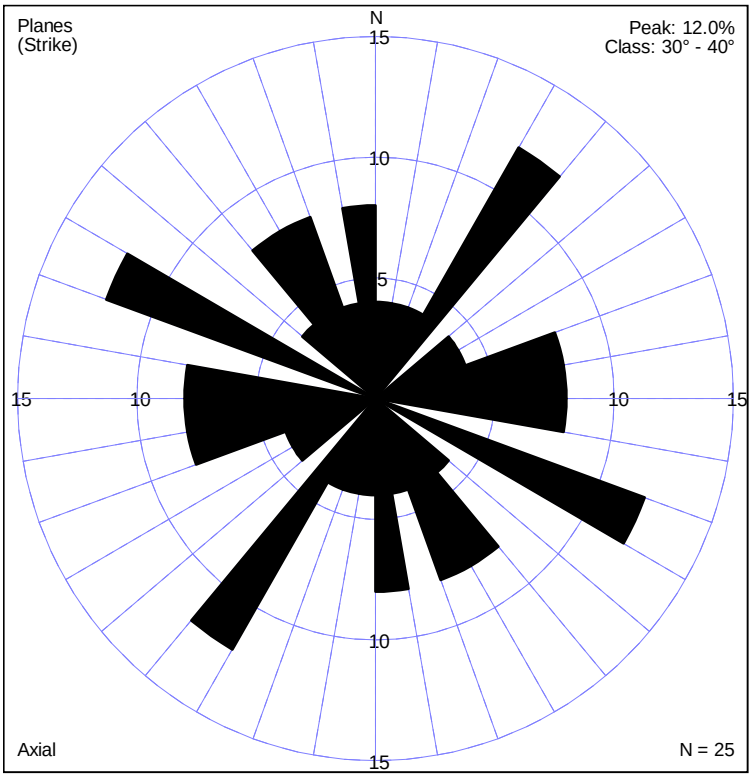
Mapping Area B Fault Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.

10-214-10 Observation of General Geologic Features in the Schreiber Area

FIGURE 5I	Doc. No.: Figure5I_AreaB_Faults.xls	Geofirma Engineering Ltd	Prepared by: VMS Reviewed by: SNS Date: 17-Feb-15



A.



B.

Mapping Area B Vein Data. Top - Equal Area Lower Hemisphere Projection. Bottom - Rose Diagram.			Prepared by: VMS
10-214-10 Observation of General Geologic Features in the Schreiber Area			Reviewed by: SNS
FIGURE 5J	Doc. No.: Figure5J_AreaB_Veins.xls	Geofirma Engineering Ltd	Date: 17-Feb-15

(A)

(B)

(C)

(D)

Representative Examples of Bedrock Exposure and Surface Constraints in the Two Mapping Areas
(A) Mapping Area A, view across valley to illustrate variable topography, looking southeast, Sta. 14SK039
(B) Mapping Area A, typical decent outcrop exposure at higher elevation, Sta. 14TLG052
(C) Mapping Area A, typical outcrop exposure with heavy vegetation in lower lying area, Sta. 14SK038
(D) *Mapping Area B, old logging road and large clearing with excellent exposure, looking south, Sta. 14TLG016*

10-214-10 Observation of General Geological Features in Schreiber Area		Prepared by: VMS Reviewed by: SNS Date: Feb 18, 2015
FIGURE 6	10-214-10_Figure6_BedrockExposure_SurfaceConstraints_R0.doc	

Geofirma Engineering Ltd

APPENDIX A – Data Tables

Table A.1 Summary of Observation Stations

STATIONID	VISITDATE	LATITUDE	LONGITUDE	EASTING	NORTHING	ELEVATION	ENTRYTYPE	PDOP	SATSUSED	OBSTYPE	TRAV_NO	STATION NOTES
14TLG001	9/11/2014	48.9459027	-87.208705	484718	5421460	402.9	GPS	3.5	6	outcrop	0	
14TLG002	9/11/2014	48.9469193	-87.209702	484646	5421580	412.8	GPS	1.4	11	outcrop	0	
14TLG003	9/11/2014	48.9476164	-87.209706	484646	5421650	9999	tap	1.4	0	outcrop	0	Overburden 10-20cm veneer
14TLG004	9/11/2014	48.9485077	-87.21104	484548	5421750	420.9	GPS	2	9	outcrop	0	Overburden 10-20cm
14TLG005	9/11/2014	48.949528	-87.211713	484500	5421870	9999	tap	2	0	outcrop	0	Overburden 10-20cm
14TLG006	9/11/2014	48.9451277	-87.208174	484757	5421380	406.9	GPS	1.7	9	outcrop	0	Overburden 10cm
14TLG007	9/11/2014	48.9445593	-87.206935	484847	5421310	408.3	GPS	1.7	9	outcrop	0	Overburden <10cm
14TLG008	9/11/2014	48.9444643	-87.205157	484978	5421300	403.9	GPS	1.6	9	outcrop	0	
14TLG009	9/11/2014	48.943866	-87.204949	484993	5421240	400	GPS	2.7	7	outcrop	0	
14TLG010	9/11/2014	48.9426777	-87.204682	485012	5421100	403.1	GPS	2.2	7	outcrop	0	To the east of 14TLG010A, overburden thickens and there is no outcrop for ~100m
14TLG011	9/11/2014	48.9422443	-87.203157	485123	5421060	403.1	GPS	2	7	outcrop	0	
14TLG012	9/11/2014	48.941691	-87.202592	485165	5420990	400.5	GPS	3.1	6	outcrop	0	
14TLG013	9/12/2014	48.9416393	-87.201297	485259	5420990	412.8	GPS	2.7	7	outcrop	0	Overburden 20-100cm
14TLG014	9/12/2014	48.941876	-87.199225	485411	5421010	412.4	GPS	3.4	7	outcrop	0	Overburden 30-150cm
14TLG015	9/12/2014	48.9416523	-87.197177	485562	5420990	9999	tap	3.4	0	outcrop	0	Overburden 20-100cm
14TLG016	9/12/2014	48.940071	-87.195317	485697	5420810	396.3	GPS	1.9	8	outcrop	0	Overburden 50-100cm; in the vicinity of station 016 there are several well exposed outcrops that display several cross cutting relationships and dyke emplacement
14TLG017	9/12/2014	48.940326	-87.192754	485885	5420840	395	GPS	4	4	outcrop	0	
14TLG018	9/12/2014	48.940291	-87.19038	486058	5420840	385.3	GPS	2.3	5	outcrop	0	Overburden 50cm
14TLG019	9/12/2014	48.939906	-87.186834	486318	5420790	388.3	GPS	2.1	5	outcrop	0	Overburden 50-100cm
14TLG020	9/12/2014	48.9399543	-87.185109	486444	5420800	374.9	GPS	2.1	8	outcrop	0	Overburden 20-100cm in vicinity of outcrop
14TLG021	9/12/2014	48.938831	-87.183204	486584	5420670	395.2	GPS	3	6	outcrop	0	Overburden 20-50cm; outcrop is 3mx3m with little vertical extent
14TLG022	9/12/2014	48.938821	-87.194552	485753	5420670	409.2	GPS	2	8	outcrop	0	
14TLG023	9/12/2014	48.9375893	-87.196069	485641	5420540	403.2	GPS	2	8	outcrop	0	Overburden 100-200cm; low-lying outcrop
14TLG024	9/12/2014	48.936191	-87.198275	485479	5420380	379.2	GPS	1.9	8	outcrop	0	Overburden 100-200cm
14TLG025	9/12/2014	48.9349243	-87.199285	485405	5420240	402	GPS	1.9	7	outcrop	0	The base of a large fault. A mapped fault is shown on OGS map P2556 at FWIS location. No evidence of the fault other than topography was observed
14TLG026	9/13/2014	48.9386277	-87.202375	485180	5420650	394.3	GPS	5.3	4	outcrop	0	Overburden 20-200cm; outcrop is a cliff with 3m vertical extent
14TLG027	9/13/2014	48.933821	-87.202862	485143	5420120	429.6	GPS	8.8	4	outcrop	0	Overburden 50-100cm
14TLG028	9/13/2014	48.9320227	-87.204905	484992	5419920	433.4	GPS	2.6	4	outcrop	0	Overburden 50cm; 3mx10m outcrop, at the edge of the pond
14TLG029	9/13/2014	48.9297893	-87.203184	485118	5419670	439.3	GPS	3.4	4	outcrop	0	Small outcrop 0.5mx0.5m
14TLG030	9/13/2014	48.9274927	-87.20247	485169	5419420	427.3	GPS	3.2	4	outcrop	0	Overburden 50-200cm; small outcrop 1mx5m
14TLG031	9/13/2014	48.9253043	-87.201217	485260	5419170	426.6	GPS	2.2	3	outcrop	0	Overburden and moss 100-200cm
14TLG032	9/14/2014	48.977911	-87.129015	490559	5425010	347.6	GPS	3.5	7	outcrop	0	
14TLG033	9/14/2014	48.9779393	-87.133322	490244	5425010	339.2	GPS	2.1	8	outcrop	0	Overburden 100-500cm; outcrop is a 3m cliff
14TLG034	9/14/2014	48.9790077	-87.132014	490340	5425130	314.1	GPS	4.5	6	outcrop	0	Outcrop found at river, no vertical extent
14TLG035	9/14/2014	48.955166	-87.14694	489243	5422480	387.6	GPS	1.7	10	outcrop	0	
14TLG036	9/14/2014	48.956921	-87.146709	489260	5422680	399.9	GPS	1.8	10	outcrop	0	Small outcrop 1mx0.5m
14TLG037	9/14/2014	48.9584227	-87.148029	489164	5422840	380	GPS	1.7	10	outcrop	0	Overburden 20-100cm; 3mx6m outcrop
14TLG038	9/14/2014	48.9601343	-87.149879	489029	5423030	399.4	GPS	2	8	outcrop	0	Overburden 10 to 100cm; 4mx10m outcrop
14TLG039	9/14/2014	48.9601877	-87.152434	488842	5423040	399.9	GPS	1.8	8	outcrop	0	20m x10m outcrop with little vertical extent
14TLG040	9/15/2014	48.9649044	-87.434869	468170	5423650	375.9	GPS	7.5	5	outcrop	1	Overburden 20-100cm; outcrop is 8mx5m with 3m vertical extent
14TLG041	9/15/2014	48.9642777	-87.43324	468289	5423580	429.7	GPS	3.4	4	outcrop	1	Overburden 10-100cm; outcrop is 10mx10m at the top of the hill
14TLG042	9/15/2014	48.9631194	-87.430772	468469	5423450	384.4	GPS	8.8	4	outcrop	1	
14TLG043	9/15/2014	48.962996	-87.4275	468708	5423430	421.6	GPS	5.4	3	outcrop	1	Outcrop is a small cliff, ~2 meters high, limited horizontal exposure, at the base of a 4m escarpment
14TLG044	9/15/2014	48.9627127	-87.425079	468886	5423400	384.8	GPS	7.9	5	outcrop	1	
14TLG045	9/15/2014	48.962711	-87.42351	469000	5423400	366.2	GPS	5.3	3	outcrop	1	5mx5m outcrop

Table A.1 Summary of Observation Stations

STATIONID	VISITDATE	LATITUDE	LONGITUDE	EASTING	NORTHING	ELEVATION	ENTRYTYPE	PDOP	SATSUSED	OBSTYPE	TRAV_NO	STATION NOTES
14TLG046	9/15/2014	48.961866	-87.420564	469215	5423300	351.4	GPS	3	6	outcrop	1	
14TLG047	9/15/2014	48.9212544	-87.46458	465966	5418810	344	GPS	1.8	8	outcrop	1	
14TLG048	9/15/2014	48.9255744	-87.463714	466032	5419290	344.6	GPS	2.4	7	outcrop	1	
14TLG049	9/16/2014	48.976836	-87.45466	466730	5424980	319.5	GPS	2.9	6	outcrop	2	Overburden 50-100cm; outcrop 4mx4m with little vertical extent
14TLG050	9/16/2014	48.9503127	-87.466587	465839	5422040	378.1	GPS	3.4	6	outcrop	2	
14TLG051	9/16/2014	48.9465194	-87.45476	466702	5421610	466.2	GPS	4.8	6	outcrop	2	Overburden 100-200cm; outcrop is 3mx3m at the edge of the swamp
14TLG052	9/16/2014	48.9336127	-87.445064	467404	5420170	390.7	GPS	3.4	3	outcrop	2	
14TLG053	9/16/2014	48.9521894	-87.427505	468701	5422230	343.3	GPS	3.7	6	outcrop	2	Overburden 100-300cm; outcrop is 8mx10m with little vertical extent, on the edge of the bog
14TLG054	9/16/2014	48.920621	-87.198942	485426	5418650	406.9	GPS	12.2	4	outcrop	2	Outcrop is small 5mx2m with little vertical extent on the edge of the bog
14SK001	9/10/2014	48.9618994	-87.373862	472634	5423290	380	GPS	1.5	9	outcrop	1	
14SK002	9/10/2014	48.9535527	-87.372944	472697	5422360	357.8	GPS	2.1	7	outcrop	1	
14SK003	9/10/2014	48.9496444	-87.376917	472404	5421930	331.9	GPS	2.7	6	outcrop	1	
14SK004	9/10/2014	48.9475644	-87.375164	472531	5421690	319.5	GPS	3.6	6	outcrop	1	
14SK005	9/10/2014	48.9440044	-87.373909	472621	5421300	292.9	GPS	4.1	6	outcrop	1	
14SK006	9/11/2014	48.9725543	-87.168192	487691	5424420	443.5	GPS	1.3	10	outcrop	1	Poor outcrop
14SK007	9/11/2014	48.9719877	-87.166852	487789	5424360	448.5	GPS	1.4	10	outcrop	1	Grown over logging road, 2-5m overburden
14SK008	9/11/2014	48.9706077	-87.166365	487824	5424200	447.1	GPS	1.5	10	outcrop	1	Good oucrop with less than 1m overburden. Good for stripping/detailed mapping
14SK009	9/11/2014	48.9697977	-87.165572	487882	5424110	435.6	GPS	1.7	9	outcrop	1	Boggy area, with some exposure on high points
14SK010	9/11/2014	48.9689627	-87.164982	487925	5424020	434.3	GPS	1.8	9	outcrop	1	Thin overburden, 1-2m
14SK011	9/11/2014	48.967951	-87.164674	487948	5423910	433.9	GPS	1.4	11	outcrop	1	Low outcrop along logging road. 1-2m overburden.
14SK012	9/11/2014	48.967081	-87.164525	487958	5423810	431.3	GPS	1.9	8	outcrop	1	1-2 m overburden
14SK013	9/11/2014	48.966666	-87.163912	488003	5423760	426.3	GPS	1.7	9	outcrop	1	Inclined outcrop on thevside of a valley.
14SK014	9/11/2014	48.965746	-87.163574	488028	5423660	423.7	GPS	1.7	8	outcrop	1	20m-High scarp barrier to access, but good area to get info on low angle structure
14SK015	9/11/2014	48.9653827	-87.161125	488207	5423620	424.8	GPS	1.6	7	outcrop	1	High point next to road, 1-2 m overburden
14SK016	9/11/2014	48.9641077	-87.159764	488306	5423480	429.8	GPS	4.3	5	outcrop	1	Outcrop next to small pond
14SK017	9/11/2014	48.9625543	-87.158514	488397	5423310	420.2	GPS	1.8	9	outcrop	1	Road-side outcrop. 1-2 m overburden
14SK018	9/11/2014	48.9617043	-87.15559	488611	5423210	409.7	GPS	1.7	9	outcrop	1	High point on the road. 1-2 m overburden
14SK019	9/11/2014	48.965766	-87.163247	488052	5423660	407	manual	0	0	outcrop	1	
14SK020	9/12/2014	48.955121	-87.143515	489493	5422480	403.3	GPS	4.2	5	outcrop	2	Starting traverse 3B in mafic volcanics to constrain contact
14SK021	9/12/2014	48.9544193	-87.146037	489309	5422400	389.3	GPS	3.2	7	outcrop	2	Road-side outcrop. 1-2 m overburden
14SK022	9/12/2014	48.953101	-87.14865	489117	5422250	390	GPS	3.8	5	outcrop	2	Outcrop to constrain contact with volcanics
14SK023	9/12/2014	48.9526077	-87.151935	488877	5422200	388.6	GPS	2.1	6	outcrop	2	Road side outcrop. Steep exposure
14SK024	9/12/2014	48.950171	-87.153925	488730	5421930	392	GPS	7.8	4	outcrop	2	
14SK025	9/12/2014	48.9485977	-87.155277	488631	5421750	377.1	GPS	2.6	5	outcrop	2	Outcrop on the bank of a pond. Good exposure
14SK026	9/12/2014	48.9460927	-87.155854	488588	5421470	380.1	GPS	2.9	4	outcrop	2	Road side outcrop with 1-2 m overburden
14SK027	9/12/2014	48.9439593	-87.15741	488474	5421240	389.5	GPS	1.6	9	outcrop	2	Polished outcrop, 10m north of road. 1-2 m overburden
14SK028	9/12/2014	48.9447743	-87.160419	488254	5421330	387.9	GPS	1.6	8	outcrop	2	Road side outcrop, 1-2 m overburden
14SK029	9/12/2014	48.9451877	-87.16466	487943	5421380	397.4	GPS	1.6	8	outcrop	2	Road side outcrop. 1-2 m overburden
14SK030	9/12/2014	48.9448543	-87.168935	487630	5421340	393.5	GPS	1.8	9	outcrop	2	Road side outcrop. 1-2 m overburden
14SK031	9/12/2014	48.9439243	-87.172197	487391	5421240	414.2	GPS	2.3	8	outcrop	2	Large cleared area at intersection of roads. Suitable for stripping
14SK032	9/12/2014	48.9434643	-87.172414	487375	5421190	407.4	GPS	2.1	8	outcrop	2	Cleared area, suitable for stripping and detailed mapping
14SK033	9/12/2014	48.9421877	-87.170085	487545	5421040	407.6	GPS	2	7	outcrop	2	Cleared area, suitable for stripping and detailed mapping
14SK034	9/12/2014	48.9399443	-87.16714	487760	5420790	407.5	GPS	1.8	7	outcrop	2	Cleared area adjacent to road. Road not driveable past previous outcrop
14SK035	9/12/2014	48.945766	-87.17987	486830	5421440	404.7	GPS	1.8	7	outcrop	2	End of access road/path. Thin cover, moderate vegetation
14SK036	9/12/2014	48.9441127	-87.17855	486926	5421260	413.7	GPS	3.2	6	outcrop	2	Poor outcrop near road
14SK037	9/12/2014	48.9438543	-87.175667	487137	5421230	413.6	GPS	1.8	8	outcrop	2	Flat outcrop in clear-cut area adjacent to road. Good area for detail mapping
14SK038	9/13/2014	48.9647177	-87.436864	468024	5423630	388.1	GPS	2.6	7	outcrop	3	Helicopter landing spot on a bog
14SK039	9/13/2014	48.9659527	-87.437284	467994	5423760	398.8	GPS	2.4	8	outcrop	3	Steep face adjacent to a bog
14SK040	9/13/2014	48.9668827	-87.437352	467990	5423870	400.4	GPS	2.4	8	outcrop	3	Poor outcrop in forest

Table A.1 Summary of Observation Stations

STATIONID	VISITDATE	LATITUDE	LONGITUDE	EASTING	NORTHING	ELEVATION	ENTRYTYPE	PDOP	SATSUSED	OBSTYPE	TRAV_NO	STATION NOTES
14SK041	9/13/2014	48.9675927	-87.436677	468040	5423950	407.7	GPS	2.7	7	outcrop	3	Moss covered outcrop. 5-10 m overburden
14SK042	9/13/2014	48.968876	-87.436482	468055	5424090	386.3	GPS	2.9	6	outcrop	3	Poor outcrop in forest. 5-10m overburden
14SK043	9/13/2014	48.9709494	-87.437029	468016	5424320	414.9	GPS	2.8	7	outcrop	3	Poor outcrop in forest. 5-10 m overburden
14SK044	9/13/2014	48.9713144	-87.43972	467819	5424360	450.4	GPS	2.6	7	outcrop	3	Poor outcrop in forest. 5-10 m overburden
14SK045	9/13/2014	48.9721044	-87.442209	467638	5424450	419.2	GPS	2.6	6	outcrop	3	Flat outcrop in forest. 5-10 m overburden
14SK046	9/13/2014	48.9728377	-87.444182	467494	5424530	413.4	GPS	2.5	6	outcrop	3	Small outcrop in forest. 5-10 m overburden
14SK047	9/13/2014	48.973476	-87.444989	467435	5424600	420	GPS	3.8	5	outcrop	3	Good outcrop in clearing
14SK048	9/13/2014	48.9744227	-87.444749	467453	5424710	427.5	GPS	3.3	5	outcrop	3	Clearing on top hill. Good exposure. 1-2 m overburden
14SK049	9/13/2014	48.9753544	-87.442289	467634	5424810	422.4	GPS	3.7	4	outcrop	3	Small outcrop on steep slope. 5-10 overburden
14SK050	9/13/2014	48.9762094	-87.442254	467637	5424910	397.3	GPS	6	3	outcrop	3	Steep fault scarp, 15 m high, bounding E-W valley
14SK051	9/13/2014	48.9827894	-87.435147	468161	5425630	400.2	GPS	3.3	7	outcrop	3	Outcrop on the edge of a bog. Helicopter access
14SK052	9/13/2014	48.9775077	-87.43997	467805	5425050	381.5	GPS	1.9	7	outcrop	3	Large outcrop on north side of valley/lineament
14SK053	9/14/2014	48.9470493	-87.167567	487731	5421580	391.4	GPS	2	8	outcrop	4	Cleared area near logging road. 1-2 m overburden
14SK054	9/14/2014	48.9486427	-87.169099	487619	5421760	410.9	GPS	2.8	7	outcrop	4	Outcrop in clear-cut. 1-2 m overburden
14SK055	9/14/2014	48.9503743	-87.171714	487428	5421950	416.3	GPS	3.5	7	outcrop	4	Good exposure in clear cut. 1-2 m overburden
14SK056	9/14/2014	48.951911	-87.172572	487366	5422120	404.9	GPS	4.7	6	outcrop	4	Outcrop in boggy area
14SK057	9/14/2014	48.9535643	-87.172622	487362	5422310	423.1	GPS	5.6	5	outcrop	4	Outcrop near overgrown logging road. 1-2 m overburden
14SK058	9/14/2014	48.9552193	-87.17402	487260	5422490	420	GPS	4	7	outcrop	4	Poor outcrop adjacent to stream
14SK059	9/14/2014	48.9574027	-87.168764	487646	5422730	404.8	GPS	4.9	5	outcrop	4	Poor outcrop on the side of a lake
14SK060	9/14/2014	48.954631	-87.166995	487774	5422430	426.4	GPS	11.9	5	outcrop	4	Moss covered outcrop near overgrown logging road
14SK061	9/14/2014	48.952696	-87.166314	487824	5422210	425.7	GPS	14.9	5	outcrop	4	Cleared area with good exposure. 1-2 m overburden
14SK062	9/14/2014	48.9504993	-87.165564	487878	5421970	408.7	GPS	4.2	5	outcrop	4	Outcrop in clear cut area. 1-2 m overburden
14SK063	9/14/2014	48.9480943	-87.162785	488081	5421700	388	GPS	3.5	5	outcrop	4	Outcrop in clear cut area adjacent to road. 1-2 m overburden
14SK064	9/14/2014	48.9549343	-87.136652	489996	5422460	412	GPS	2.2	6	outcrop	4	Steep scarp, parallel to road
14SK065	9/14/2014	48.954171	-87.125934	490780	5422370	369.7	GPS	2.2	6	outcrop	4	Poor outcrop. Area to the west of this station covered by thick blanket of till
14SK066	9/15/2014	48.965871	-87.439919	467801	5423760	400.5	GPS	2.2	9	outcrop	5	Poor outcrop in forest. 5-10m overburden between topographic high points
14SK067	9/15/2014	48.9658677	-87.442057	467645	5423760	389.9	GPS	1.9	10	outcrop	5	Poor outcrop in forest. 5-10 m overburden
14SK068	9/15/2014	48.966406	-87.444605	467459	5423820	394	GPS	1.7	10	outcrop	5	Poor outcrop in forest. 5-10 m overburden
14SK069	9/15/2014	48.9657877	-87.446549	467316	5423750	425.6	GPS	2	9	outcrop	5	Flat outcrop on ridge. 5-10 overburden
14SK070	9/15/2014	48.9670327	-87.452335	466893	5423890	448.2	GPS	2.6	8	outcrop	5	Moss covered outcrop in forest. 5-10 overburden
14SK071	9/15/2014	48.965781	-87.451362	466964	5423750	423.3	GPS	2.5	8	outcrop	5	Small scarp in forest. 5-10m overburden
14SK072	9/15/2014	48.963621	-87.449799	467077	5423510	454.1	GPS	2.3	7	outcrop	5	Poor outcrop in forest. 5-10m overburden
14SK073	9/15/2014	48.9625244	-87.446809	467295	5423390	472.5	GPS	4.8	7	outcrop	5	Flat outcrop on ridge. 5-10m overburden
14SK074	9/15/2014	48.9612744	-87.444232	467483	5423250	438.8	GPS	4.8	6	outcrop	5	Large clearing. 1-2m overburden
14SK075	9/15/2014	48.9598077	-87.441077	467713	5423080	437.1	GPS	1.8	10	outcrop	5	Poor moss covered outcrop in forest. 5-10m overburden
14SK076	9/15/2014	48.959301	-87.440012	467790	5423020	458.1	GPS	1.7	10	outcrop	5	Exposed ridge line. Attempted a helicopter landing here, but ground too uneven
14SK077	9/15/2014	48.9568794	-87.438899	467870	5422760	429.3	GPS	1.7	9	outcrop	5	Small clearing on hillside. 5-10 m overburden
14SK078	9/15/2014	48.9532994	-87.43692	468013	5422360	392.7	GPS	1.9	7	outcrop	5	Outcrop on the shore of a small lake. Possible helicopter landing area here
14SK079	9/15/2014	48.911671	-87.232045	482998	5417660	379.6	GPS	2	8	outcrop	5	On Carter transect in the SW portion on block B
14SK080	9/15/2014	48.9099294	-87.230595	483103	5417470	383	GPS	1.5	9	outcrop	5	Angled outcrop on lake shore. 5-10 m overburden away from lake
14SK081	9/15/2014	48.9087994	-87.228815	483233	5417340	386.5	GPS	2	9	outcrop	5	Moss covered outcrop in forest. 5-10 m overburden.
14SK082	9/15/2014	48.9082444	-87.227559	483325	5417280	373.6	GPS	2.3	8	outcrop	5	Outcrop beside a small lake
14SK083	9/16/2014	48.9893744	-87.45628	466619	5426370	352.39	GPS	2	9	outcrop	6	Small scarp in forest. 5-10 m overburden.
14SK084	9/16/2014	48.9908844	-87.453804	466802	5426540	398.19	GPS	1.6	10	outcrop	6	Small scarp in forest. 5-10 m overburden
14SK085	9/16/2014	48.9939677	-87.455562	466675	5426890	382.69	GPS	2.2	8	outcrop	6	Poor outcrop in forest. >10 m overburden
14SK086	9/16/2014	48.9953994	-87.459365	466398	5427050	365.79	GPS	3	6	outcrop	6	Clearing on ridge, in an area of generally poor outcrop. 5-10 m overburden
14SK087	9/16/2014	48.9962844	-87.460695	466301	5427140	325.99	GPS	3.2	5	outcrop	6	Moss-covered outcrop in forest. 5-10 m overburden
14SK088	9/16/2014	48.997851	-87.461464	466246	5427320	282.39	GPS	8.5	4	outcrop	6	Clearing on ridge. 5-10 m overburden. Poor satellite reception (PDOP>5)
14SK089	9/16/2014	48.999611	-87.461292	466260	5427520	305.19	GPS	2.3	7	outcrop	6	Moss covered outcrop in forest . 5-10 m overburden
14SK090	9/16/2014	48.924761	-87.218392	484002	5419110	405.3	GPS	2.1	6	outcrop	6	Outcrop in bog. 5-10 m overburden

Table A.1 Summary of Observation Stations

STATIONID	VISITDATE	LATITUDE	LONGITUDE	EASTING	NORTHING	ELEVATION	ENTRYTYPE	PDOP	SATSUSED	OBSTYPE	TRAV_NO	STATION NOTES
14SK091	9/16/2014	48.906766	-87.203262	485105	5417110	417.2	GPS	8	4	outcrop	6	Outcrop beside bog. 5-10 m overburden

Table A.2a - Summary of Intrusive Lithology Observations

STATIONID	LITHOID	SUBCLASS	ROCKTYPE	MINERAL	OCCURRENCE	COLOUR	COLOUR	ROCKFAB	FORM	XTALSIZE[1.]	XTALFORM[2.]	GROUNDMASS	MEGAXST[3.]	NOTES
14TLG001	14TLG001A	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white and pink	Foliated	Batholith	Medium grained 1-5mm	Equigranular			
14TLG001	14TLG001B	Granitoid	granodiorite	plagioclase	dyke	Melanocratic	pink	Massive	Dike-unzoned					
14TLG002	14TLG002A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and pink	Foliated				Hornblende < Biotite	Subhedral	
14TLG003	14TLG003A	Granitoid	granite	biotite;hornblende	main lithology	Melanocratic	white and black	Foliated				Hornblende < Biotite		
14TLG003	14TLG003B	Granitoid	granodiorite	quartz;plagioclase	dyke	Melanocratic	White	Massive	Dike-unzoned					
14TLG004	14TLG004A	Granitoid	granite	biotite;hornblende	main lithology	Melanocratic	white and black	Foliated	Pluton		Equigranular	Hornblende < Biotite		
14TLG005	14TLG005A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Massive	Undetermined		Equigranular	Hornblende < Biotite	Subhedral;Coarse grained	
14TLG006	14TLG006A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Massive	Pluton		Equigranular	Hornblende < Biotite	Subhedral;Subhedral;Coarse grained	
14TLG007	14TLG007A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Massive	Pluton		Equigranular	Hornblende < Biotite	Subhedral;Coarse grained	
14TLG008	14TLG008A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	black and white	Massive	Pluton		Equigranular	Biotite < Hornblende	Euhedral	
14TLG009	14TLG009A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black	Foliated	Pluton		Equigranular	Biotite < Hornblende		
14TLG009	14TLG009B	Granitoid	granodiorite		dyke	Mesocratic	pink	Massive	Dike-unzoned			Biotite < Hornblende		
14TLG009	14TLG009C	Granitoid	granodiorite	quartz;plagioclase	dyke	Melanocratic	white	Foliated	Dike-unzoned					
14TLG010	14TLG010A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black w pink	Massive	Pluton			Biotite < Hornblende		
14TLG011	14TLG011A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black	Massive	Pluton		Equigranular	Biotite < Hornblende		
14TLG012	14TLG012A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black	Massive	Pluton		Equigranular	Biotite < Hornblende		
14TLG013	14TLG013A	Granitoid	granodiorite	biotite	main lithology	Melanocratic	white and black w pink	Massive	Pluton		Equigranular	Biotite		
14TLG013	14TLG13B	Granitoid	granodiorite	plagioclase;quartz	dyke	Melanocratic	pink and white	Massive	Dike-unzoned					
14TLG014	14TLG014A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black	Massive	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG015	14TLG015A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG016	14TLG016A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	white and black w pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG016	14TLG016B	Granitoid	granodiorite	plagioclase;quartz	dyke	Melanocratic	white and pink	Massive	Undetermined	Unsubdivided				
14TLG016	14TLG016C	Granitoid	granodiorite	quartz;plagioclase	dyke	Mesocratic	pink	Massive	Dike-unzoned	Very fine grained 0.1-0.5mm	Equigranular			Aplite
14TLG017	14TLG017A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Massive	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG018	14TLG018A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG019	14TLG019A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	white and black		Pluton	Fine grained 0.5-1mm;Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG020	14TLG020A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	whute w pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG021	14TLG021A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	white and black		Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG022	14TLG022A	Special cases	dike	pyroxene;plagioclase	dyke	Melanocratic	dark grey to black	Massive	Dike-unzoned					
14TLG023	14TLG023A	Granitoid	granodiorite	biotite	main lithology	Melanocratic	white and black			Medium grained 1-5mm	Equigranular	Biotite		
14TLG024	14TLG024A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	white and black w pink	Massive	Undetermined	Fine grained 0.5-1mm;Medium grained 1-5mm	Equigranular	Biotite		Plagioclase stained D/T hematite
14TLG025	14TLG025A	Granitoid	granodiorite	biotite	main lithology	Melanocratic	white and black w pink	Massive	Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG026	14TLG026A	Granitoid	granodiorite	biotite		Mesocratic	pink and white	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG027	14TLG027A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	black and white		Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG028	14TLG028A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	white and black w pink		Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG029	14TLG029A	Granitoid	granodiorite	biotite	main lithology	Melanocratic	white and black		Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG030	14TLG030A	Granitoid	granodiorite	biotite	main lithology	Melanocratic	white and black	Massive	Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG031	14TLG031A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	white and black w pink		Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG032	14TLG032A	Special cases	dike	pyroxene;plag	main lithology	Melanocratic	dark gray to greenish		Dike-unzoned	Fine grained 0.5-1mm	Equigranular			
14TLG032	14TLG032B	Syenitoid	quartz syenite	K-spar;biotite;hblde	main lithology	Mesocratic	black w pink		Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG033	14TLG033A	Syenitoid	quartz syenite	alkali-feldsp;biotite;hornblende		Mesocratic	pink and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG034	14TLG034A	Granitoid	granodiorite	biotite		Mesocratic	green and pink		Pluton	Medium grained 1-5mm	Equigranular			
14TLG035	14TLG035A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink		Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG036	14TLG036A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG037	14TLG037A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	white and black w pink	Massive	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG037	14TLG037B	Granitoid	granodiorite	plagioclase;quartz	dyke	Mesocratic	pink and white	Massive	Dike-unzoned		Equigranular		Plagioclase	
14TLG038	14TLG038A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	white and black w pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG039	14TLG039A	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic	white and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG039	14TLG039B	Granitoid	granodiorite	plagioclase;quartz	dyke	Mesocratic	pink		Dike-unzoned					
14TLG040	14TLG040A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	pink and white	Massive	Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite	Plagioclase;Coarse grained	
14TLG041	14TLG041A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	pink and white		Pluton	Medium grained 1-5mm	Equigranular	Hornblende < Biotite		
14TLG042	14TLG042A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG043	14TLG043A	Granitoid	granodiorite	biotite;hornblende	main lithology	Mesocratic	white and black w pink	Foliated	Pluton	Coarse grained 5-10mm		Hornblende < Biotite		
14TLG044	14TLG044A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	white and black w pink		Pluton	Medium grained 1-5mm	Equigranular	Biotite		

Table A.2a - Summary of Intrusive Lithology Observations

STATIONID	LITHOID	SUBCLASS	ROCKTYPE	MINERAL	OCCURRENCE	COLOUR	COLOUR	ROCKFAB	FORM	XTALSIZE[1.]	XTALFORM[2.]	GROUNDMASS	MEGAXST[3.]	NOTES
14TLG045	14TLG045A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	white and black w pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite		
14TLG046	14TLG046A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white and black w pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14TLG046	14TLG046B	Special cases	mafic dike	amphibole	dyke	Mesocratic	black	Foliated						
14TLG047	14TLG047B	Granitoid	granodiorite	quartz;feldspar	minor lithology	Melanocratic	pink	Massive		Unsubdivided				Pegmatite
14TLG048	14TLG048A	Dioritoid	quartz diorite	hornblende;biotite;plagioclase;quartz;plagioclase	main lithology	Mesocratic	black and white	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG049	14TLG049A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	green and pink w white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14TLG049	14TLG049B	Granitoid	granite	plagioclase;alkali-feldsp;quartz	dyke	Mesocratic	white and pink		Dike-unzoned	Unsubdivided				
14TLG050	14TLG050A	Granitoid	granite	alkali-feldsp;plagioclase;quartz;biotite;hornblende;muscovite	main lithology	Mesocratic	pink		Pluton	Fine grained 0.5-1mm	Equigranular	Hornblende < Biotite		
14TLG051	14TLG051A	Granitoid	granodiorite	biotite		Mesocratic	pink	Massive	Pluton			Biotite		
14TLG052	14TLG052A	Dioritoid	quartz diorite	alkali-feldsp;plagioclase;hornblende;biotite	main lithology	Melanocratic	pink and black	Foliated	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG053	14TLG053A	Dioritoid	quartz monzodiorite	plagioclase;biotite;hornblende;alkali-feldsp	main lithology	Mesocratic	pink and black	Foliated	Pluton	Fine grained 0.5-1mm;Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14TLG054	14TLG054A	Granitoid	granodiorite	hornblende;biotite		Melanocratic	black w pink	Massive	Pluton	Medium grained 1-5mm	Equigranular	Biotite < Hornblende		
14SK002	14SK002A	Granitoid	granodiorite		main lithology	Mesocratic	Pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular		K-feldspar	
14SK002	14SK002B	Granitoid	granodiorite	biotite;hornblende	main lithology	Melanocratic		Foliated		Medium grained 1-5mm	Inequigranular	Euhedral;Plagioclase		
14SK002	14SK002C	Granitoid	granodiorite	biotite	sill	Leucocratic		Foliated	Sill-zoned					
14SK003	14SK003A	Granitoid	granodiorite	hornblende;biotite	main lithology	Melanocratic	pink	Foliated		Medium grained 1-5mm	Equigranular		Igneous lamination;Colour	
14SK004	14SK004A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	pink	Foliated		Medium grained 1-5mm	Inequigranular	Plagioclase		
14SK004	14SK004B	Granitoid	granite	biotite	dyke	Mesocratic	pink	Massive	Dike-unzoned					
14SK005	14SK005A	Granitoid	granodiorite	hornblende;biotite		Mesocratic	pink	Massive		Medium grained 1-5mm	Equigranular			
14SK005	14SK005B	Granitoid	granite	biotite	dyke	Mesocratic	pink		Dike-unzoned	Cryptocrystalline <0.1mm				
14SK006	14SK006A	Granitoid	granodiorite	biotite		Leucocratic	grey	Foliated		Medium grained 1-5mm	Equigranular			
14SK007	14SK007A	Granitoid	granodiorite	biotite		Leucocratic	WHITE	Foliated		Medium grained 1-5mm				
14SK008	14SK008A	Granitoid	granodiorite	biotite		Leucocratic	White	Foliated		Medium grained 1-5mm				
14SK008	14SK008B	Granitoid	granite			Leucocratic	pink		Dike-zoned					
14SK009	14SK009A	Granitoid	granodiorite	biotite		Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK010	14SK010A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK011	14SK011A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK012	14SK012A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK013	14SK013A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated		Coarse grained 5-10mm	Equigranular			
14SK014	14SK014A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	grey	Foliated		Medium grained 1-5mm	Equigranular			
14SK015	14SK015A	Granitoid	granodiorite	biotite		Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK016	14SK016A	Granitoid	granodiorite	biotite		Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK017	14SK017A	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK018	14SK018A	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK019	14SK019A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK020	14SK020B	Special cases	mafic dike		dyke	Melanocratic	green		Dike-unzoned		Inequigranular			
14SK021	14SK021A	Special cases	mafic dike	plagioclase;feldspar	dyke	Melanocratic	green	Massive	Dike-unzoned		Inequigranular			
14SK021	14SK021B	Granitoid	granodiorite	hornblende	minor lithology	Leucocratic	white	Massive	Irregular-unzoned	Medium grained 1-5mm	Equigranular			
14SK022	14SK022A	Granitoid	granite	hornblende	main lithology	Mesocratic	pink	Massive		Medium grained 1-5mm	Equigranular			
14SK023	14SK023A	Special cases	mafic dike		dyke	Melanocratic	green/black	Massive	Dike-unzoned	Cryptocrystalline <0.1mm	Equigranular			
14SK024	14SK024A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive		Medium grained 1-5mm	Equigranular			
14SK025	14SK025A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	red	Massive		Medium grained 1-5mm	Equigranular			
14SK026	14SK026A	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK026	14SK026B	Granitoid	granodiorite	hornblende	raft	Mesocratic	general		Irregular-unzoned	Coarse grained 5-10mm	Equigranular			
14SK027	14SK027A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK028	14SK028A	Granitoid	granodiorite	hornblende;biotite		Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK029	14SK029A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK031	14SK031A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK031	14SK031B	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK031	14SK031C	Granitoid	granite	hornblende	dyke	Leucocratic	pink		Dike-zoned					
14SK032	14SK032A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK033	14SK033A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			

Table A.2a - Summary of Intrusive Lithology Observations

STATIONID	LITHOID	SUBCLASS	ROCKTYPE	MINERAL	OCCURRENCE	COLOUR	COLOUR	ROCKFAB	FORM	XTALSIZE[1.]	XTALFORM[2.]	GROUNDMASS	MEGAXST[3.]	NOTES
14SK034	14SK034A	Granitoid	granodiorite	hornblende	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm				
14SK034	14SK034B	Granitoid	granite		dyke	Leucocratic	pink		Dike-zoned	Very fine grained 0.1-0.5mm				
14SK035	14SK035A	Granitoid	granodiorite	hornblende	sheet	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK036	14SK036A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK037	14SK037A	Granitoid	granodiorite	hornblende;biotite	enclave	Leucocratic	white	Foliated	Irregular-unzoned	Medium grained 1-5mm	Equigranular			
14SK037	14SK037B	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white	Foliated		Medium grained 1-5mm	Equigranular			
14SK038	14SK038A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK039	14SK039A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK039	14SK039B	Special cases	mafic dike		dyke	Melanocratic	green	Massive	Dike-unzoned	Cryptocrystalline <0.1mm				
14SK040	14SK040A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK041	14SK041A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white/pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK042	14SK042A	Granitoid	granodiorite	biotite	main lithology	Leucocratic		Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK043	14SK043A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK044	14SK044A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm				
14SK045	14SK045A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK046	14SK046A	Granitoid	granite	biotite	main lithology	Leucocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK047	14SK047A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK048	14SK048A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK049	14SK049A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK050	14SK050A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton					
14SK051	14SK051A	Granitoid	granite	biotite	main lithology	Leucocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK052	14SK052A	Granitoid	granite	biotite	main lithology	Leucocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK053	14SK053A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK054	14SK054A	Granitoid	granite	biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK055	14SK055A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular		Igneous lamination	
14SK056	14SK056A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	grey	Foliated	Pluton	Medium grained 1-5mm	Inequigranular		Igneous lamination	
14SK057	14SK057A	Granitoid	granite	hornblende;biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK058	14SK058A	Granitoid	granodiorite	hornblende	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK059	14SK059A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK060	14SK060A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK061	14SK061A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK062	14SK062A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white =	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK063	14SK063A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK064	14SK064A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK066	14SK066A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK067	14SK067A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK068	14SK068A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	grey/pink	Foliated	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK069	14SK069A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK070	14SK070A	Granitoid	granodiorite	biotite	main lithology	Mesocratic	pink/grey	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK071	14SK071A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm				
14SK072	14SK072A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	pink/white	Foliated	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK073	14SK073A	Granitoid	granite	biotite	main lithology	Leucocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK074	14SK074A	Granitoid	granite	biotite	sill	Mesocratic	pink	Massive	Sill-unzoned	Fine grained 0.5-1mm	Equigranular			
14SK075	14SK075A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white/pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK076	14SK076A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Inequigranular			
14SK077	14SK077A	Granitoid	granodiorite	biotite;hornblende	main lithology	Leucocratic	white/pink	Massive	Pluton	Coarse grained 5-10mm;Medium grained 1-5mm	Equigranular			
14SK078	14SK078A	Granitoid	granite	biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Fine grained 0.5-1mm	Graphic			
14SK079	14SK079A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK080	14SK080A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK081	14SK081A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	grey/pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK082	14SK082A	Granitoid	granodiorite	biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK083	14SK083A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK084	14SK084A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	pink	Foliated	Pluton					
14SK085	14SK085A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	dark red	Massive	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK086	14SK086A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK086	14SK086B	Granitoid	granite	biotite	minor lithology	Mesocratic	pink	Foliated	Dike-unzoned	Unsubdivided	Equigranular			
14SK087	14SK087A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	white/pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			
14SK088	14SK088A	Granitoid	granodiorite	hornblende;mica	main lithology	Leucocratic	white/pink	Foliated	Pluton	Medium grained 1-5mm	Equigranular			

Table A.2a - Summary of Intrusive Lithology Observations

STATIONID	LITHOID	SUBCLASS	ROCKTYPE	MINERAL	OCCURRENCE	COLOUR	COLOUR	ROCKFAB	FORM	XTALSIZE[1.]	XTALFORM[2.]	GROUNDMASS	MEGAXST[3.]	NOTES
14SK088	14SK088B	Granitoid	granite	biotite	dyke	Mesocratic	pink	Massive	Dike-unzoned					
14SK089	14SK089A	Granitoid	granodiorite	hornblende;biotite	main lithology	Leucocratic	pink	Massive	Pluton	Fine grained 0.5-1mm	Equigranular			
14SK090	14SK090A	Granitoid	granodiorite	hornblende;biotite	main lithology			Massive	Pluton	Medium grained 1-5mm	Equigranular			
14SK091	14SK091A	Granitoid	granodiorite	hornblende;biotite	main lithology	Mesocratic	pink	Massive	Pluton	Medium grained 1-5mm	Equigranular			

Notes:

1. XTALSIZE - Crystal Size
2. XTALFORM - Crystal Form
3. MEGAXST - Megacryst

Table A.2b - Summary of Metamorphic Lithology Observations

STATIONID	LITHOID	SUBCLASS	ROCKTYPE	MINERAL	OCCURRENCE	METAGRADE	ROCKFAB	CONGROUP	CONTACT	C1DSCGROUP	C1DESC	NOTES
14TLG047	14TLG047A	Gneiss	orthogneiss	biotite; quartz; feldspar	main lithology		Gneissose	Not observed	Not observed	Layer Form	Parallel-Planar Continuous	Mylonite?
14TLG050	14TLG050B	Schist	mafic schist	biotite; muscovite; hornblende	minor lithology	Greenschist/Amphibolite						Shear zone

Table A.2c Summary of Volcanic Flow Lithology Observations

STATION ID	LITHO ID	SUBCLASS	ROCKTYPE	OCCURRENCE	METAGRADE	COLOUR	ROCKFAB	CONGROUP	CONTACT	FORM	XTALSIZE	XTALFORM
14TLG034	14TLG034B	Mafic	lava flow			green	Foliated					
14TLG035	14TLG035B	Mafic	lava flow				Massive					
14TLG038	14TLG038B	Mafic	lava flow	xenolith		dark gray	Massive				Fine grained 0.5-1mm	
14SK020	14SK020A	Mafic	lava flow	main lithology	Greenschist	green	Foliated - phyllite	Not observed	Not observed	Undetermined		
14SK065	14SK065A	Mafic	lava flow	main lithology		green	Massive	Not observed	Not observed	Undetermined	Very fine grained 0.1-0.5mm	Equigranular

Table A.2d - Summary of Geological Alteration Observations

STATION ID	ALTER ID	ASSOLITH	FORM	FRACGROUP	TEXTFRACT	MINGROUP	MINERAL	INTENSITY	RELATION	COLOUR_U	COLOUR	NOTES
14TLG016	14TLG016A01	14TLG016C	Pervasive;Saturated	Grain size	Fine	Oxide	hematite	Moderate	Undetermined	Uniform	pink	
14TLG020	14TLG020A01	14TLG020A	Non-Pervasive;Vein-controlled			Orthosilicates;Orthosilicates; Orthosilicates	epidote	Moderate to strong		Uniform	pistachio green	
14TLG026	14TLG026A01	14TLG026A	Pervasive;Disseminated	Replacement	Crystals-Groundmass	Oxide	hematite	Moderate to strong		Uniform	red to pink	Fault-related alteration
14TLG031	14TLG031A01	14TLG031A	Non-Pervasive;Disseminated			Oxide	hematite	Moderate	Undetermined	Uniform	pink	
14TLG035	14TLG035A01	14TLG035A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite	Moderate to strong		Uniform	pink	
14TLG035	14TLG035A02	14TLG035B	Non-Pervasive;Vein-controlled	Replacement	Other	Orthosilicates; Orthosilicates	epidote	Moderate to strong		Uniform	pistachio green	
14TLG037	14TLG037A01	14TLG037A		Replacement	Crystals-Groundmass	Oxide	hematite	Weak to moderate			pink	
14TLG038	14TLG038A01	14TLG038A		Replacement	Crystals-Groundmass	Oxide	hematite	Weak to moderate				
14TLG040	14TLG040A01	14TLG040A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite	Moderate to strong		Uniform		
14TLG041	14TLG041A01	14TLG041A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite	Moderate to strong				Pink and white
14TLG042	14TLG042A01	14TLG042A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite					
14TLG043	14TLG043A01	14TLG043A		Replacement	Crystals-Groundmass	Oxide	hematite	Weak to moderate			pink	
14TLG044	14TLG044A01	14TLG044A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite					
14TLG045	14TLG045A01	14TLG045A		Replacement	Crystals-Groundmass	Oxide	hematite	Weak to moderate		Uniform	pink	
14TLG049	14TLG049A01	14TLG049A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite	Weak to moderate				
14TLG049	14TLG049A02	14TLG049A		Replacement	Crystals-Groundmass	Sheet Silicates	chlorite					
14TLG050	14TLG050A01	14TLG050A	Non-Pervasive;Disseminated			Oxide	magnetite					
14TLG051	14TLG051A01	14TLG051A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite					
14TLG053	14TLG053A01	14TLG053A	Pervasive;Saturated	Replacement	Layering	Oxide	hematite					
14TLG054	14TLG054A01	14TLG054A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	ilmenite	Weak			pink	
14SK003	14SK003A01	14SK003A	Pervasive;Saturated			Oxide	hematite	Moderate	Conformable	Uniform	pink	
14SK004	14SK004A01	14SK004A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide;Orthosilicates; Orthosilicates	hematite;;epidote	Moderate		Motley	pink	
14SK005	14SK005A01	14SK005A	Pervasive;Saturated			Oxide	hematite					
14SK008	14SK008A01	14SK008A	Non-Pervasive;Fracture controlled			Oxide	hematite			Motley	pink	
14SK025	14SK025A01	14SK025A	Pervasive;Saturated			Oxide;Orthosilicates	hematite;epidote					
14SK055	14SK055A01	14SK055A	Non-Pervasive;Vein-controlled			Orthosilicates	epidote	Weak	Discordant			
14SK056	14SK056A01	14SK056A	Non-Pervasive;Fracture controlled			Sheet Silicates	chlorite	Weak			green	
14SK058	14SK058A01	14SK058A	Pervasive;Saturated			Oxide	hematite	Moderate				
14SK085	14SK085A01	14SK085A	Pervasive;Saturated	Replacement	Crystals-Groundmass	Oxide	hematite	Moderate		Uniform	dark red	
14SK091	14SK091A01	14SK091A	Pervasive;Saturated			Oxide	hematite	Weak		Uniform	red	

Table A.3 - Summary of Field Magnetic Susceptibility Measurements

SitingArea	Easting	Northing	STATIONID	LITHOID	SAMPLEID	Reading1	Reading2	Reading3	Reading4	Reading5	Avg_Reading	Lithology
A	472697	5422360	14SK002	14SK002A	14SK002AG01	2.80E-03	4.29E-04	2.78E-03	4.28E-03	--	2.6E-03	granodiorite
A	472697	5422360	14SK002	14SK002B	14SK002BG02	1.26E-02	1.38E-02	3.71E-03	3.15E-03	6.45E-03	7.9E-03	granodiorite
A	472404	5421930	14SK003	14SK003A	14SK003AG01	6.90E-03	6.74E-03	1.17E-02	--	6.96E-03	8.1E-03	granodiorite
A	472531	5421690	14SK004	14SK004A	14SK004AG01	2.22E-04	2.77E-04	2.62E-04	2.53E-04	2.21E-04	2.5E-04	granodiorite
A	472621	5421300	14SK005	14SK005A	14SK005AG01	6.90E-04	1.97E-04	3.30E-05	1.04E-04	1.41E-04	2.3E-04	granodiorite
A	468024	5423630	14SK038	14SK038A	14SK038AG02	5.80E-05	1.03E-04	8.00E-06	1.30E-05	6.80E-05	5.0E-05	granite
A	467994	5423760	14SK039	14SK039A	14SK039AG01	6.30E-05	2.30E-05	3.75E-04	3.80E-04	5.00E-06	1.7E-04	granite
A	467994	5423760	14SK039	14SK039B	14SK039BG02	2.85E-04	--	--	--	--	2.9E-04	mafic dike
A	467990	5423870	14SK040	14SK040A	14SK040AG01	2.21E-03	3.60E-03	1.47E-03	4.06E-03	1.07E-03	2.5E-03	granite
A	468040	5423950	14SK041	14SK041A	14SK041AG01	5.46E-03	3.33E-03	4.66E-04	2.97E-03	5.11E-03	3.5E-03	granodiorite
A	468055	5424090	14SK042	14SK042A	14SK042AG01	3.70E-05	8.35E-04	5.37E-03	5.06E-03	6.35E-03	3.5E-03	granodiorite
A	468016	5424320	14SK043	14SK043A	14SK043AG01	2.16E-03	5.07E-04	5.12E-03	2.46E-03	3.42E-03	2.7E-03	granodiorite
A	467819	5424360	14SK044	14SK044A	14SK044AG01	1.79E-03	5.43E-04	1.95E-04	5.49E-04	2.54E-03	1.1E-03	granite
A	467638	5424450	14SK045	14SK045A	14SK045AG01	6.50E-05	6.20E-05	6.50E-05	2.22E-04	5.80E-05	9.4E-05	granodiorite
A	467494	5424530	14SK046	14SK046A	14SK046AG01	7.70E-05	7.00E-06	--	--	--	4.2E-05	granite
A	467453	5424710	14SK048	14SK048A	14SK048AG01	2.60E-05	6.30E-04	3.20E-03	3.20E-03	3.98E-03	2.2E-03	granodiorite
A	467634	5424810	14SK049	14SK049A	14SK049AG01	4.82E-03	4.52E-04	3.49E-03	3.07E-03	3.77E-03	3.1E-03	granodiorite
A	467637	5424910	14SK050	14SK050A	14SK050AG01	2.45E-04	9.80E-05	2.82E-04	2.32E-04	5.80E-05	1.8E-04	granite
A	468161	5425630	14SK051	14SK051A	14SK051AG01	3.85E-03	4.54E-03	3.61E-03	2.64E-03	1.46E-03	3.2E-03	granite
A	467805	5425050	14SK052	14SK052A	14SK052AG01	4.55E-03	6.33E-03	3.26E-03	3.30E-03	2.81E-03	4.1E-03	granite
A	467801	5423760	14SK066	14SK066A	14SK066AG01	2.46E-03	3.15E-03	2.44E-03	3.23E-03	1.69E-03	2.6E-03	granite
A	467645	5423760	14SK067	14SK067A	14SK067AG01	2.50E-03	1.92E-03	4.21E-03	5.33E-03	4.57E-03	3.7E-03	granite
A	467459	5423820	14SK068	14SK068A	14SK068AG01	2.70E-05	3.50E-05	1.60E-05	4.30E-05	5.00E-05	3.4E-05	granodiorite
A	467316	5423750	14SK069	14SK069A	14SK069AG01	4.18E-03	5.36E-03	2.45E-03	4.43E-03	3.90E-03	4.1E-03	granite
A	466893	5423890	14SK070	14SK070A	14SK070AG01	2.59E-03	4.52E-03	5.20E-03	5.06E-03	5.89E-03	4.7E-03	granodiorite
A	466964	5423750	14SK071	14SK071A	14SK071AG01	2.04E-03	4.25E-03	3.45E-03	3.70E-03	2.29E-03	3.1E-03	granite
A	467077	5423510	14SK072	14SK072A	14SK072AG01	4.29E-03	4.70E-03	4.96E-03	5.22E-03	4.97E-03	4.8E-03	granodiorite
A	467295	5423390	14SK073	14SK073A	14SK073AG01	2.03E-03	2.13E-03	1.04E-03	1.78E-03	--	1.7E-03	granite
A	467483	5423250	14SK074	14SK074A	14SK074AG01	2.36E-03	2.90E-04	5.80E-04	7.74E-04	2.34E-04	8.5E-04	granite
A	467713	5423080	14SK075	14SK075A	14SK075AG01	1.67E-04	1.90E-05	1.58E-03	1.93E-03	1.79E-03	1.1E-03	granodiorite
A	467870	5422760	14SK077	14SK077A	14SK077AG01	4.84E-03	5.11E-03	4.13E-03	2.92E-03	5.06E-03	4.4E-03	granodiorite
A	468013	5422360	14SK078	14SK078A	14SK078AG01	3.30E-03	5.43E-03	8.47E-03	9.71E-03	3.03E-03	6.0E-03	granite
A	466619	5426370	14SK083	14SK083A	14SK083AG01	2.53E-04	1.32E-04	2.04E-04	1.15E-04	1.64E-04	1.7E-04	granodiorite
A	466802	5426540	14SK084	14SK084A	14SK084AG01	1.46E-03	3.61E-04	1.21E-03	6.26E-04	2.47E-04	7.8E-04	granodiorite
A	466675	5426890	14SK085	14SK085A	14SK085AG01	3.81E-04	8.36E-04	2.26E-04	5.95E-04	8.82E-04	5.8E-04	granodiorite
A	466398	5427050	14SK086	14SK086A	14SK086AG01	9.90E-04	1.89E-03	2.62E-03	2.37E-03	1.86E-03	1.9E-03	granodiorite
A	466301	5427140	14SK087	14SK087A	14SK087AG01	9.11E-04	1.00E-03	1.00E-03	4.14E-03	2.66E-03	1.9E-03	granodiorite
A	466246	5427320	14SK088	14SK088A	14SK088AG01	1.47E-03	1.72E-03	5.09E-03	4.44E-03	2.15E-03	3.0E-03	granodiorite
A	466260	5427520	14SK089	14SK089A	14SK089AG01	1.55E-03	2.37E-03	2.44E-03	1.55E-03	1.81E-03	1.9E-03	granodiorite
A	468170	5420170	14TLG052	14TLG052A	14TLG052AG01	2.93E-04	3.33E-04	5.84E-04	2.16E-04	7.43E-04	4.3E-04	granodiorite
A	468289	5422230	14TLG053	14TLG053A	14TLG053AG01	1.24E-03	6.20E-04	3.97E-04	4.36E-03	2.36E-03	1.8E-03	granodiorite
A	468469	5418650	14TLG054	14TLG054A	14TLG054AG01	1.83E-03	6.92E-04	7.42E-04	1.61E-03	1.94E-04	1.0E-03	granodiorite
B	487691	5424420	14SK006	14SK006A	14SK006AG01	4.62E-03	1.32E-03	6.58E-04	1.64E-03	1.51E-03	1.9E-03	granodiorite
B	487789	5424360	14SK007	14SK007A	14SK007AG01	9.50E-04	7.86E-04	4.56E-04	8.66E-04	6.57E-04	7.4E-04	granodiorite
B	487824	5424200	14SK008	14SK008A	14SK008AG01	4.77E-03	4.85E-03	4.05E-03	5.67E-03	5.61E-03	5.0E-03	granodiorite
B	487882	5424110	14SK009	14SK009A	14SK009AG01	9.76E-04	9.88E-04	1.45E-03	1.00E-04	7.55E-04	8.5E-04	granodiorite
B	487925	5424020	14SK010	14SK010A	14SK010AG01	3.65E-03	2.88E-03	3.46E-03	3.90E-03	2.38E-03	3.3E-03	granodiorite

Table A.3 - Summary of Field Magnetic Susceptibility Measurements

SitingArea	Easting	Northing	STATIONID	LITHOID	SAMPLEID	Reading1	Reading2	Reading3	Reading4	Reading5	Avg_Reading	Lithology
B	487948	5423910	14SK011	14SK011A	14SK011AG01	1.71E-03	1.81E-03	1.52E-03	1.97E-04	2.26E-04	1.1E-03	granodiorite
B	487958	5423810	14SK012	14SK012A	14SK012AG01	1.26E-03	3.32E-04	1.19E-03	1.43E-03	1.42E-03	1.1E-03	granodiorite
B	488003	5423760	14SK013	14SK013A	14SK013AG01	--	--	1.76E-04	2.26E-04	8.84E-04	4.3E-04	granodiorite
B	488028	5423660	14SK014	14SK014A	14SK014AG01	5.50E-04	6.90E-04	1.09E-03	6.06E-04	5.50E-04	7.0E-04	granodiorite
B	488207	5423620	14SK015	14SK015A	14SK015AG01	1.48E-04	1.13E-04	1.90E-04	1.88E-04	1.22E-04	1.5E-04	granodiorite
B	488306	5423480	14SK016	14SK016A	14SK016AG01	1.39E-03	1.20E-03	7.64E-04	1.80E-04	7.28E-04	8.5E-04	granodiorite
B	488397	5423310	14SK017	14SK017A	14SK017AG01	1.67E-03	1.06E-03	1.24E-03	5.50E-02	5.64E-03	1.3E-02	granodiorite
B	488611	5423210	14SK018	14SK018A	14SK018AG01	8.67E-03	4.41E-03	1.81E-04	8.95E-03	9.87E-03	6.4E-03	granodiorite
B	488052	5423660	14SK019	14SK019A	14SK019AG01	3.21E-03	3.87E-03	4.13E-03	5.50E-03	4.83E-03	4.3E-03	granodiorite
B	489493	5422480	14SK020	14SK020A	14SK020AG01	7.50E-04	3.88E-04	7.05E-04	7.09E-04	--	6.4E-04	granodiorite
B	489493	5422480	14SK020	14SK020B	14SK020BG02	1.57E-02	3.94E-02	3.29E-02	--	--	2.9E-02	mafic dike
B	489309	5422400	14SK021	14SK021A	14SK021AG01	1.05E-03	1.00E-03	1.21E-03	9.14E-04	6.87E-04	9.7E-04	mafic dike
B	489117	5422250	14SK022	14SK022A	14SK022AG01	7.40E-05	7.10E-05	7.40E-05	3.50E-05	6.40E-05	6.4E-05	granite
B	488877	5422200	14SK023	14SK023A	14SK023AG01	8.70E-03	2.89E-02	7.33E-03	2.12E-03	5.57E-03	1.1E-02	mafic dike
B	488631	5421750	14SK025	14SK025A	14SK025AG01	6.99E-04	1.79E-03	5.57E-03	2.63E-03	3.47E-04	2.2E-03	granodiorite
B	488588	5421470	14SK026	14SK026A	14SK026AG01	5.63E-04	8.93E-03	1.42E-02	3.57E-03	1.09E-02	7.6E-03	granodiorite
B	488474	5421240	14SK027	14SK027A	14SK027AG01	8.58E-04	6.74E-04	1.19E-03	1.70E-02	1.54E-02	7.0E-03	granodiorite
B	488254	5421330	14SK028	14SK028A	14SK028AG01	1.26E-04	1.04E-02	2.32E-04	2.71E-04	1.77E-04	2.2E-03	granodiorite
B	487943	5421380	14SK029	14SK029A	14SK029AG01	1.93E-03	3.02E-03	1.22E-03	1.49E-03	2.17E-03	2.0E-03	granodiorite
B	487391	5421240	14SK031	14SK031A	14SK031AG02	6.67E-04	1.07E-03	9.19E-04	8.03E-04	8.11E-04	8.5E-04	granodiorite
B	487391	5421240	14SK031	14SK031A	14SK031AG04	4.62E-04	2.69E-04	4.51E-04	5.33E-04	2.10E-04	3.9E-04	granodiorite
B	487375	5421190	14SK032	14SK032A	14SK032AG01	1.49E-02	1.47E-02	6.79E-03	1.50E-02	1.31E-02	1.3E-02	granodiorite
B	487545	5421040	14SK033	14SK033A	14SK033AG01	2.83E-03	3.90E-03	1.51E-03	2.50E-04	1.02E-03	1.9E-03	granodiorite
B	487760	5420790	14SK034	14SK034A	14SK034AG01	2.20E-04	8.11E-04	8.76E-04	2.21E-04	--	5.3E-04	granodiorite
B	487760	5420790	14SK034	14SK034B	14SK034BG02	3.75E-03	3.53E-03	--	--	--	3.6E-03	granite
B	486830	5421440	14SK035	14SK035A	14SK035AG01	4.07E-03	2.19E-03	1.11E-03	1.48E-03	7.16E-03	3.2E-03	granodiorite
B	486926	5421260	14SK036	14SK036A	14SK036AG01	1.98E-03	1.55E-03	3.70E-04	1.29E-03	4.41E-03	1.9E-03	granodiorite
B	487137	5421230	14SK037	14SK037A	14SK037AG01	1.95E-03	6.65E-04	3.14E-03	4.61E-04	5.37E-04	1.4E-03	granodiorite
B	487137	5421230	14SK037	14SK037B	14SK037BG02	4.40E-03	9.53E-03	8.33E-03	1.05E-02	--	8.2E-03	granodiorite
B	487731	5421580	14SK053	14SK053A	14SK053AG01	2.75E-03	2.90E-05	1.00E-03	9.84E-04	2.20E-03	1.4E-03	granodiorite
B	487619	5421760	14SK054	14SK054A	14SK054AG01	1.85E-03	2.72E-03	2.70E-03	2.95E-03	1.90E-03	2.4E-03	granite
B	487428	5421950	14SK055	14SK055A	14SK055AG01	2.01E-03	1.91E-03	8.83E-03	7.27E-03	1.24E-03	4.3E-03	granodiorite
B	487366	5422120	14SK056	14SK056A	14SK056AG01	2.95E-02	1.75E-02	7.45E-03	1.56E-02	1.92E-02	1.8E-02	granodiorite
B	487362	5422310	14SK057	14SK057A	14SK057AG01	3.88E-04	4.29E-04	3.74E-04	3.17E-04	2.08E-04	3.4E-04	granite
B	487260	5422490	14SK058	14SK058A	14SK058AG01	4.53E-03	4.17E-03	4.39E-03	5.78E-03	6.16E-03	5.0E-03	granodiorite
B	487646	5422730	14SK059	14SK059A	14SK059AG01	1.94E-03	3.22E-03	3.24E-03	2.37E-03	3.83E-03	2.9E-03	granodiorite
B	487774	5422430	14SK060	14SK060A	14SK060AG01	1.60E-04	1.57E-04	2.61E-04	2.47E-04	1.94E-04	2.0E-04	granodiorite
B	487824	5422210	14SK061	14SK061A	14SK061AG01	1.81E-03	1.39E-03	1.57E-03	8.66E-04	6.55E-04	1.3E-03	granodiorite
B	487878	5421970	14SK062	14SK062A	14SK062AG01	5.66E-03	2.97E-03	2.38E-03	6.01E-03	8.40E-03	5.1E-03	granodiorite
B	488081	5421700	14SK063	14SK063A	14SK063AG01	4.20E-04	3.09E-04	3.96E-03	5.74E-03	--	2.6E-03	granodiorite
B	489996	5422460	14SK064	14SK064A	14SK064AG01	9.80E-05	1.01E-04	1.10E-02	1.09E-04	1.04E-04	2.3E-03	granodiorite
B	489996	5422460	14SK065	14SK065A	14SK065AG01	5.00E-03	5.32E-03	3.57E-02	2.11E-02	1.96E-02	1.7E-02	granodiorite
B	482998	5417660	14SK079	14SK079A	14SK079AG01	1.03E-03	1.63E-03	1.43E-03	1.48E-03	4.68E-04	1.2E-03	granodiorite
B	483103	5417470	14SK080	14SK080A	14SK080AG01	4.07E-03	4.21E-03	3.66E-03	3.32E-03	4.08E-03	3.9E-03	granodiorite
B	483233	5417340	14SK081	14SK081A	14SK081AG01	3.75E-03	2.82E-03	3.40E-03	3.62E-03	4.21E-03	3.6E-03	granodiorite
B	483325	5417280	14SK082	14SK082A	14SK082AG01	2.78E-03	3.76E-03	3.23E-03	1.98E-03	3.03E-03	3.0E-03	granodiorite
B	484002	5419110	14SK090	14SK090A	14SK090AG01	8.80E-05	1.53E-04	2.41E-04	1.85E-04	1.51E-04	1.6E-04	granodiorite

Table A.3 - Summary of Field Magnetic Susceptibility Measurements

SitingArea	Easting	Northing	STATIONID	LITHOID	SAMPLEID	Reading1	Reading2	Reading3	Reading4	Reading5	Avg_Reading	Lithology
B	485105	5417110	14SK091	14SK091A	14SK091AG01	8.93E-04	4.21E-04	3.76E-04	9.50E-05	1.07E-04	3.8E-04	granodiorite
B	484718	5421460	14TLG001	14TLG001A	14TLG001AG01	6.47E-04	1.04E-03	1.14E-03	6.88E-03	4.73E-03	2.9E-03	granodiorite
B	484646	5421580	14TLG002	14TLG002A	14TLG002AG01	3.34E-03	4.23E-03	3.51E-03	2.52E-03	2.50E-04	2.8E-03	granodiorite
B	484548	5421750	14TLG004	14TLG004A	14TLG004AG01	5.32E-04	7.90E-04	7.93E-04	4.05E-04	5.97E-04	6.2E-04	granite
B	484500	5421870	14TLG005	14TLG005A	14TLG005AG01	3.47E-04	5.73E-04	3.89E-04	1.79E-03	1.31E-03	8.8E-04	granodiorite
B	484757	5421380	14TLG006	14TLG006A	14TLG006AG01	6.02E-03	3.15E-03	2.84E-03	5.10E-03	6.71E-03	4.8E-03	granodiorite
B	484847	5421310	14TLG007	14TLG007A	14TLG007AG01	1.27E-03	2.41E-03	2.95E-03	2.91E-03	6.36E-03	3.2E-03	granodiorite
B	484978	5421300	14TLG008	14TLG008A	14TLG008AG01	1.78E-03	3.35E-03	5.14E-03	3.12E-03	2.94E-03	3.3E-03	granodiorite
B	485012	5421100	14TLG010	14TLG010A	14TLG010AG01	3.03E-03	1.38E-03	1.52E-03	2.86E-02	1.55E-04	6.9E-03	granodiorite
B	485165	5420990	14TLG012	14TLG012A	14TLG012AG01	5.36E-04	7.78E-04	2.63E-03	1.20E-03	1.46E-03	1.3E-03	granodiorite
B	484718	5420990	14TLG013	14TLG013A	14TLG013AG01	1.74E-04	1.59E-04	1.99E-04	1.96E-04	2.38E-04	1.9E-04	granodiorite
B	484646	5421010	14TLG014	14TLG014A	14TLG014AG01	3.90E-04	9.11E-04	3.91E-04	3.40E-04	3.12E-04	4.7E-04	granodiorite
B	484646	5420990	14TLG015	14TLG015A	14TLG015AG01	3.04E-04	3.51E-04	6.76E-03	2.99E-04	7.47E-03	3.0E-03	granite
B	484500	5420810	14TLG016	14TLG016A	14TLG016AG01	8.25E-04	4.37E-04	6.02E-03	2.11E-04	1.61E-03	1.8E-03	granodiorite
B	484847	5420840	14TLG018	14TLG018A	14TLG018AG01	4.84E-04	5.68E-04	8.29E-04	8.39E-04	8.77E-04	7.2E-04	granodiorite
B	484978	5420790	14TLG019	14TLG019A	14TLG019AG01	5.39E-04	6.57E-04	3.50E-04	5.69E-03	3.27E-03	2.1E-03	granodiorite
B	484993	5420800	14TLG020	14TLG020A	14TLG020AG01	3.50E-04	4.82E-04	4.11E-04	3.71E-04	2.73E-04	3.8E-04	granodiorite
B	484993	5420670	14TLG021	14TLG021A	14TLG021AG01	5.79E-03	2.86E-04	3.26E-04	3.28E-04	3.34E-04	1.4E-03	granodiorite
B	484993	5420670	14TLG022	14TLG022A	14TLG022AG01	2.27E-02	1.64E-02	2.20E-02	1.13E-02	2.87E-02	2.0E-02	granodiorite
B	485012	5420540	14TLG023	14TLG023A	14TLG023AG01	3.78E-04	2.44E-04	3.15E-04	3.12E-04	5.43E-04	3.6E-04	granodiorite
B	485123	5420380	14TLG024	14TLG024A	14TLG024AG01	1.82E-04	1.45E-04	1.59E-04	1.74E-04	1.61E-04	1.6E-04	granodiorite
B	485165	5420240	14TLG025	14TLG025A	14TLG025AG01	1.60E-04	1.25E-04	1.81E-04	1.28E-04	1.40E-04	1.5E-04	granodiorite
B	485259	5420650	14TLG026	14TLG026A	14TLG026AG01	1.64E-03	1.62E-04	2.67E-04	8.16E-04	1.46E-04	6.1E-04	granodiorite
B	485259	5420120	14TLG027	14TLG027A	14TLG027AG01	2.83E-03	1.78E-03	2.27E-03	2.03E-03	1.83E-03	2.1E-03	granodiorite
B	485411	5419920	14TLG028	14TLG028A	14TLG028AG01	2.01E-04	8.00E-05	6.08E-04	2.54E-04	4.64E-04	3.2E-04	granodiorite
B	485562	5419670	14TLG029	14TLG029A	14TLG029AG01	2.23E-03	1.37E-03	1.67E-03	2.27E-03	1.65E-03	1.8E-03	granodiorite
B	485697	5419420	14TLG030	14TLG030A	14TLG030AG01	8.58E-04	1.51E-03	6.18E-04	1.14E-03	2.43E-03	1.3E-03	granodiorite
B	485697	5419170	14TLG031	14TLG031A	14TLG031AG01	3.40E-03	4.04E-03	3.72E-03	3.34E-03	2.65E-03	3.4E-03	granodiorite
B	485885	5425010	14TLG032	14TLG032A	14TLG032AG01	1.52E-02	8.54E-03	6.59E-03	1.09E-02	1.42E-02	1.1E-02	granodiorite
B	486058	5425010	14TLG033	14TLG033A	14TLG033AG01	3.91E-04	2.31E-04	6.21E-04	1.41E-04	4.77E-04	3.7E-04	granodiorite
B	485753	5422480	14TLG035	14TLG035A	14TLG035AG01	1.96E-04	8.80E-05	2.17E-04	8.50E-05	1.88E-04	1.5E-04	granodiorite
B	485641	5422680	14TLG036	14TLG036A	14TLG036AG01	8.48E-03	4.40E-03	1.23E-03	8.72E-03	8.62E-03	6.3E-03	granodiorite
B	485405	5422840	14TLG037	14TLG037A	14TLG037AG01	3.34E-03	1.15E-03	3.78E-03	2.49E-03	3.58E-03	2.9E-03	granodiorite
B	485143	5423030	14TLG038	14TLG038A	14TLG038AG01	2.43E-04	--	--	--	--	2.4E-04	granodiorite
B	485118	5423040	14TLG039	14TLG039A	14TLG039AG01	2.28E-03	3.46E-03	5.13E-03	1.25E-03	--	3.0E-03	granodiorite
B	489029	5424980	14TLG049	14TLG049A	14TLG049AG01	9.70E-05	6.94E-04	1.04E-04	1.06E-04	9.70E-05	2.2E-04	granodiorite
B	488842	5422040	14TLG050	14TLG050A	14TLG050AG03	3.92E-02	2.20E-03	4.62E-02	3.12E-02	1.28E-03	2.4E-02	lava flow
B	488842	5421610	14TLG051	14TLG051A	14TLG051AG01	1.45E-03	1.06E-03	7.99E-03	1.14E-03	6.19E-04	2.5E-03	granodiorite

Notes:

-- no reading collected

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14TLG001	14TLG001A	14TLG001AS01	Joint	joint	179	89			80.00		
14TLG001	14TLG001A	14TLG001AS02	Joint	joint	55	84			80.00	hematite;	
14TLG001	14TLG001A	14TLG001AS03	Fault Brittle	UnknB-Dex	139	80				quartz;	
14TLG001	14TLG001A	14TLG001AS04	Fault Brittle	UnknB-Dex	4	88				quartz;	
14TLG002	14TLG002A	14TLG002AS01	Joint	joint	4	72			50.00		Clean
14TLG002	14TLG002A	14TLG002AS02	Joint	joint	266	35			20.00		Clean
14TLG002	14TLG002A	14TLG002AS03	Joint	joint	360	65			120.00		Clean
14TLG002	14TLG002A	14TLG002AS04	Lineation	mineral	286	18	LIN WEAK	L>S			
14TLG003	14TLG003A	14TLG003AS01	Joint	joint	12	86			150.00		Clean
14TLG003	14TLG003A	14TLG003AS02	Joint	joint	95	80			40.00		Clean
14TLG003	14TLG003A	14TLG003AS03	Joint	joint	278	34				hematite;	Spacing not available
14TLG003	14TLG003A	14TLG003AS04	Fault Brittle	UnknB-horiz	160	86					slickenlines described on following entry
14TLG003	14TLG003A	14TLG003AS05	Lineation	slickenside	317	72	LIN STRONG				SW side down
14TLG003	14TLG003A	14TLG003AS06	Fault Brittle	UnknB-Dex	161	60				quartz;	Dextral
14TLG004	14TLG004A	14TLG004AS01	Joint	joint	221	61			80.00	hematite;	
14TLG004	14TLG004A	14TLG004AS02	Joint	joint	321	82			50.00	hematite;	
14TLG004	14TLG004A	14TLG004AS03	Fault Brittle	UnknB-Dex	300	83					Kinematics from riedel shears, dextral movement
14TLG005	14TLG005A	14TLG005AS01	Joint	joint	325	68			50.00	hematite;	Later than other set, truncates other set
14TLG005	14TLG005A	14TLG005AS02	Joint	joint	22	55			40.00	hematite;	
14TLG005	14TLG005A	14TLG005AS03	Vein	extension-unknown	326	61				quartz;	
14TLG006	14TLG006A	14TLG006AS01	Joint	joint	300	68			30.00	hematite;	
14TLG006	14TLG006A	14TLG006AS02	Joint	joint	23	70			30.00		
14TLG007	14TLG007A	14TLG007AS01	Joint	joint	312	85			70.00		Clean
14TLG007	14TLG007A	14TLG007AS02	Joint	joint	2	81			150.00	biotite;	
14TLG008	14TLG008A	14TLG008AS01	Joint	joint	27	70			100.00	epidote;	
14TLG008	14TLG008A	14TLG008AS02	Vein	net-unknown	250	90					Pegmatite Dyke
14TLG008	14TLG008A	14TLG008AS03	Fault-Brittle-Ductile	UnknDB-Dex	313	99					Dextral
14TLG008	14TLG008A	14TLG008AS04	Joint	joint	25	78			100.00		
14TLG008	14TLG008A	14TLG008AS05	Joint	joint	122	73					
14TLG009	14TLG009A	14TLG009AS01	Joint	joint	193	73			20.00		Clean
14TLG009	14TLG009A	14TLG009AS02	Joint	joint	98	71			100.00		Clean
14TLG009	14TLG009A	14TLG009AS03	Vein	extension-unknown	178	30					Quartz vein
14TLG009	14TLG009C	14TLG009CS04	Vein	foliation-unknown	115	76					Aplite dyke
14TLG010	14TLG010A	14TLG010AS01	Joint	joint	21	86			40.00		Clean
14TLG010	14TLG010A	14TLG010AS02	Joint	joint	280	73			30.00	hematite;	
14TLG011	14TLG011A	14TLG011AS01	Joint	joint	1	61			40.00		Clean
14TLG011	14TLG011A	14TLG011AS02	Joint	joint	17	73			70.00	quartz;	
14TLG011	14TLG011A	14TLG011AS03	Joint	joint	100	70					
14TLG011	14TLG011A	14TLG011AS04	Fault-Brittle-Ductile	UnknBD-Sin	39	70				quartz;	Sinistral displacement
14TLG012	14TLG012A	14TLG012AS01	Vein	extension-unknown	351	61				quartz;	
14TLG012	14TLG012A	14TLG012AS02	Joint	joint	255	39			55.00		Clean
14TLG012	14TLG012A	14TLG012AS03	Foliation	unknownf	98	85				hematite;	
14TLG013	14TLG013A	14TLG013AS01	Fault Brittle	UnknB-Dex	140	70				quartz;	Dextral offset of an aplite dyke
14TLG013	14TLG013A	14TLG013AS02	Joint	joint	26	74			60.00	hematite;	
14TLG013	14TLG013A	14TLG013AS03	Joint	joint	113	75			100.00	epidote;	
14TLG013	14TLG013A	14TLG013AS04	Joint	joint	18	47			30.00		
14TLG014	14TLG014A	14TLG014AS01	Fault Brittle	UnknB-Sin	188	61					Sinistral offset of joint
14TLG014	14TLG014A	14TLG014AS02	Joint	joint	93	81			120.00		Clean
14TLG014	14TLG014A	14TLG014AS03	Joint	joint	342	71			80.00		Clean

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14TLG014	14TLG014A	14TLG014AS04	Joint	joint	6	81			50.00		
14TLG015	14TLG015A	14TLG015AS01	Foliation	unknownf	7	83					
14TLG015	14TLG015A	14TLG015AS02	Fault Brittle	UnknB-Sin	109	73				hematite;	Sinitral offset of foliation siilar to structure at station 14
14TLG015	14TLG015A	14TLG015AS03	Joint	joint	332	59			75.00	quartz;	
14TLG016	14TLG016A	14TLG016AS01	Shear	Ductile-DexU	122	63				quartz;	Dextral normal
14TLG016	14TLG016A	14TLG016AS02	Joint	joint	230	90			120.00		
14TLG016	14TLG016A	14TLG016AS03	Foliation	unknownf	13	76			15.00		
14TLG016	14TLG016A	14TLG016AS04	Joint	joint	280	83			150.00	hematite;	
14TLG016	14TLG016A	14TLG016AS05	Lineation	stretch	276	38	LIN STRONG	L>S			
14TLG016	14TLG016A	14TLG016AS06	Joint	joint	9	87			55.00	hematite;	
14TLG016	14TLG016C	14TLG016CS07	Igneous-Layering	Igneous_Unsub2	271	86					
14TLG017	14TLG017A	14TLG017AS01	Joint	joint	98	71			150	hematite;	
14TLG017	14TLG017A	14TLG017AS02	Joint	joint	218	74			50		Clean
14TLG017	14TLG017A	14TLG017AS03	Joint	joint	302	66			30	hematite;	
14TLG017	14TLG017A	14TLG017AS04			332	80				quartz;	
14TLG018	14TLG018A	14TLG018AS01	Foliation	unknownf	62	81					
14TLG018	14TLG018A	14TLG018AS02	Joint	joint	298	80			30.00		Clean
14TLG018	14TLG018A	14TLG018AS03	Joint	joint	357	87			60.00	biotite;	
14TLG018	14TLG018A	14TLG018AS04	Vein	extension-unknown	274	78				quartz;	
14TLG018	14TLG018A	14TLG018AS05	Fault Brittle	UnknB-Sin	1	89					Sinistral
14TLG019	14TLG019A	14TLG019AS01	Joint	joint	2	35			120.00		Clean
14TLG019	14TLG019A	14TLG019AS02	Joint	joint	4	81			45.00		Clean
14TLG019	14TLG019A	14TLG019AS03	Joint	joint	108	60			100.00		Clean
14TLG020	14TLG020A	14TLG020AS01	Joint	joint	161	72			40.00	epidote;	
14TLG020	14TLG020A	14TLG020AS02	Joint	joint	156	69			40.00	epidote;	
14TLG020	14TLG020A	14TLG020AS03	Fault Brittle	UnknB-Sin	160	80				chlorite;	Sinistral offset
14TLG020	14TLG020A	14TLG020AS04	Vein	extension-unknown	61	76					Pegmatite
14TLG020	14TLG020A	14TLG020AS05	Joint	joint	70	76			50.00	epidote;	
14TLG021	14TLG021A	14TLG021AS01	Joint	joint	118	80			120.00	hematite;	
14TLG021	14TLG021A	14TLG021AS02	Joint	joint	345	70			45.00	hematite;	
14TLG023	14TLG023A	14TLG023AS01	Joint	joint	348	73			80.00		Clean
14TLG023	14TLG023A	14TLG023AS02	Joint	joint	100	89					
14TLG024	14TLG024A	14TLG024AS01	Joint	joint	253	50			100.00		
14TLG024	14TLG024A	14TLG024AS02	Joint	joint	148	45			25.00		
14TLG025	14TLG025A	14TLG025AS01	Joint	joint	312	65			30.00		Clean
14TLG025	14TLG025A	14TLG025AS02	Joint	joint	352	89			50.00		Clean
14TLG025	14TLG025A	14TLG025AS03	Joint	joint	108	85			40.00	quartz;	
14TLG026	14TLG026A	14TLG026AS01	Foliation	unknownf	135	38			20.00	hematite;	
14TLG026	14TLG026A	14TLG026AS02	Joint	joint	38	68			100.00		
14TLG027	14TLG027A	14TLG027AS01	Vein	extension-unknown	152	61				quartz;	
14TLG027	14TLG027A	14TLG027AS02	Joint	joint	2	83					
14TLG027	14TLG027A	14TLG027AS03	Joint	joint	258	61					
14TLG028	14TLG028A	14TLG028AS01	Joint	joint	18	86			100.00		Clean
14TLG028	14TLG028A	14TLG028AS02	Joint	joint	324	85			40.00		Clean
14TLG029	14TLG029A	14TLG029AS01	Joint	joint	42	89			25.00		Clean
14TLG029	14TLG029A	14TLG029AS02	Joint	joint	30	62			50.00		Clean
14TLG029	14TLG029A	14TLG029AS03	Joint	joint	108	75			100.00		
14TLG030	14TLG030A	14TLG030AS01	Joint	joint	42	75			50.00		Clean
14TLG030	14TLG030A	14TLG030AS02	Joint	joint	108	75			100.00		Clean

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14TLG030	14TLG030A	14TLG030AS03	Joint	joint	322	89					Clean
14TLG031	14TLG031A	14TLG031AS01	Joint	joint	118	82			30.00		Clean
14TLG031	14TLG031A	14TLG031AS02	Joint	joint	192	80			40.00		Clean
14TLG031	14TLG031A	14TLG031AS03	Joint	joint	122	80			40.00		
14TLG032	14TLG032A	14TLG032AS01	Joint	joint	235	82			10.00		Clean
14TLG033	14TLG033A	14TLG033AS01	Lineation	stretch	192	17	LIN STRONG	L=S			
14TLG033	14TLG033A	14TLG033AS02	Foliation	unknownf	74	49					
14TLG033	14TLG033A	14TLG033AS03	Joint	joint	110	20			20.00		
14TLG033	14TLG033A	14TLG033AS04	Joint	joint	310	78			10.00		
14TLG033	14TLG033A	14TLG033AS05	Joint	joint	228	80			25.00		
14TLG034	14TLG034A	14TLG034AS01	Joint	joint	10	75					Chlorite alteration
14TLG034	14TLG034A	14TLG034AS02	Joint	joint	312	50				chlorite;	Clean, moderate chlorite alteration
14TLG035	14TLG035A	14TLG035AS01	Fault Brittle	UnknB-Sin	200	80				hematite;	
14TLG035	14TLG035A	14TLG035AS02	Joint	joint	2	85			40.00		
14TLG035	14TLG035A	14TLG035AS03	Joint	joint	40	85			100.00	epidote;	
14TLG036	14TLG036A	14TLG036AS01	Joint	joint	304	78			80.00	hematite;	
14TLG036	14TLG036A	14TLG036AS02	Joint	joint	335	62			100.00		Clean
14TLG036	14TLG036A	14TLG036AS03	Foliation	unknownf	98	70				biotite;	
14TLG037	14TLG037A	14TLG037AS01	Joint	joint	338	79			20.00		Clean
14TLG037	14TLG037A	14TLG037AS02	Vein	extension-unknown	290	99					
14TLG037	14TLG037A	14TLG037AS03	Joint	joint	230	90			70.00		
14TLG037	14TLG037B	14TLG037BS04	Igneous	foliation	268	90					
14TLG038	14TLG038A	14TLG038AS01	Foliation	unknownf	90	65					
14TLG038	14TLG038A	14TLG038AS02	Joint	joint	10	75			100.00		
14TLG038	14TLG038A	14TLG038AS03	Joint	joint	310	85			100.00		
14TLG039	14TLG039A	14TLG039AS01	Foliation	unknownf	90	80					
14TLG039	14TLG039A	14TLG039AS02	Joint	joint	345	78			100.00		
14TLG039	14TLG039A	14TLG039AS03	Joint	joint	88	89			100.00		
14TLG040	14TLG040A	14TLG040AS01	Joint	joint	312	55			30.00		Clean
14TLG040	14TLG040A	14TLG040AS02	Joint	joint	199	82			35.00		
14TLG040	14TLG040A	14TLG040AS03	Joint	joint	320	80			40.00		
14TLG040	14TLG040A	14TLG040AS04	Joint	joint	45	85			20.00		
14TLG041	14TLG041A	14TLG041AS01	Joint	joint	278	81			50.00		Clean
14TLG041	14TLG041A	14TLG041AS02	Joint	joint	350	87			25.00		
14TLG041	14TLG041A	14TLG041AS03	Vein	extension-unknown	120	79				quartz;	
14TLG041	14TLG041A	14TLG041AS04	Fault Brittle	UnknB-Dex	320	85					
14TLG041	14TLG041A	14TLG041AS05	Vein	extension-unknown	92	99				quartz;	
14TLG042	14TLG042A	14TLG042AS01	Joint	joint	200	83			30.00		
14TLG042	14TLG042A	14TLG042AS02	Foliation	unknownf	324	87					
14TLG042	14TLG042A	14TLG042AS03	Joint	joint	83	79			40.00		
14TLG042	14TLG042A	14TLG042AS04	Lineation	mineral	120	25					
14TLG043	14TLG043A	14TLG043AS01	Joint	joint	78	62			10.00		
14TLG043	14TLG043A	14TLG043AS02	Joint	joint	2	40			100.00		
14TLG043	14TLG043A	14TLG043AS03	Joint	joint	8	86					
14TLG043	14TLG043A	14TLG043AS04	Joint	joint	318	60			55.00		
14TLG044	14TLG044A	14TLG044AS01	Foliation	unknownf	208	75					
14TLG044	14TLG044A	14TLG044AS02	Vein	extension-unknown	195	80				epidote;	
14TLG044	14TLG044A	14TLG044AS03	Joint	joint	318	66			100.00	hematite;	
14TLG044	14TLG044A	14TLG044AS04	Joint	joint	270	70			20.00		
14TLG044	14TLG044A	14TLG044AS05	Vein	extension-unknown	318	80				quartz;	

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14TLG045	14TLG045A	14TLG045AS01	Fault Brittle	UnknB-Dex	255	72					Clean. Dextral fault
14TLG045	14TLG045A	14TLG045AS02	Fault Brittle	UnknB-Sin	195	85				quartz;	Clean. Sinistral fault
14TLG045	14TLG045A	14TLG045AS03	Joint	joint	338	85			10.00	hematite;	
14TLG045	14TLG045A	14TLG045AS04	Joint	joint	267	85			25.00	hematite;	
14TLG045	14TLG045A	14TLG045AS05	Foliation	unknownf	22	89					
14TLG045	14TLG045A	14TLG045AS06	Lineation	stretch	208	22	LIN MODERATE	L=S			
14TLG045	14TLG045A	14TLG045AS07	Vein	extension-unknown	350	80				quartz;	
14TLG047	14TLG047A	14TLG047AS01	Shear	Ductile-DexU	10	72					
14TLG047	14TLG047A	14TLG047AS02	Gneiss	gneiss-A-unkn	108	80					
14TLG047	14TLG047A	14TLG047AS03	Fault-Brittle-Ductile	UnknDB-Dex	358	75				quartz;	Dextral offset
14TLG047	14TLG047A	14TLG047AS04	Joint	joint	22	89			55.00		
14TLG047	14TLG047B	14TLG047BS05	Igneous	foliation	352	78					
14TLG048	14TLG048A	14TLG048AS01	Foliation	unknownf	280	68					
14TLG048	14TLG048A	14TLG048AS02	Joint	joint	18	85			50.00		
14TLG048	14TLG048A	14TLG048AS03	Fault Brittle	UnknB-Sin	10	85					Sinistral offset
14TLG048	14TLG048A	14TLG048AS04	Lineation	stretch	300	20	LIN STRONG	L=S			
14TLG049	14TLG049A	14TLG049AS01	Foliation	unknownf	82	75					
14TLG049	14TLG049A	14TLG049AS02	Joint	joint	304	60			15.00	hematite;	
14TLG049	14TLG049A	14TLG049AS03	Joint	joint	192	72			40.00		
14TLG049	14TLG049A	14TLG049AS04	Vein	extension-unknown	40	79				quartz;	
14TLG050	14TLG050B	14TLG050BS01	Shear	Ductile-SinU	258	25					
14TLG050	14TLG050B	14TLG050BS02	Lineation	slickenside	128	40					Sinistral movement
14TLG050	14TLG050A	14TLG050AS03	Joint	joint	268	87			60.00		
14TLG050	14TLG050A	14TLG050AS04	Joint	joint	230	65			30.00		
14TLG050	14TLG050B	14TLG050BS05	Fault Brittle	UnknB-Sin	315	90					Left lateral displacement shown by slickenlines
14TLG050	14TLG050A	14TLG050AS06	Joint	joint	8	80			15.00		
14TLG051	14TLG051A	14TLG051AS01	Joint	joint	310	89			30.00		
14TLG051	14TLG051A	14TLG051AS02	Joint	joint	195	67			40.00		
14TLG051	14TLG051A	14TLG051AS03	Joint	joint	225	50			100.00		
14TLG052	14TLG052A	14TLG052AS01	Foliation	unknownf	88	80					
14TLG052	14TLG052A	14TLG052AS02	Joint	joint	55	89			100.00		
14TLG052	14TLG052A	14TLG052AS03	Joint	joint	10	65			30.00		
14TLG053	14TLG053A	14TLG053AS01	Foliation	unknownf	84	70					
14TLG053	14TLG053A	14TLG053AS02	Joint	joint	330	81			40.00		
14TLG054	14TLG054A	14TLG054AS01	Joint	joint	322	85			100.00		
14TLG054	14TLG054A	14TLG054AS02	Joint	joint	60	75			50.00		
14TLG054	14TLG054A	14TLG054AS03	Joint	joint	345	85			100.00		
14SK002	14SK002A	14SK002AS01	Joint	joint	999	99			35.00	;	
14SK002	14SK002A	14SK002AS02	Joint	joint	278	74			50.00		
14SK002	14SK002A	14SK002AS03	Joint	joint	194	81					
14SK002	14SK002A	14SK002AS04	Joint	joint	149	35			70.00		
14SK002	14SK002A	14SK002AS05	Joint	joint	289	55			70.00	quartz;	
14SK002	14SK002A	14SK002AS06	Lineation	stretch	69	5	LIN STRONG	L>S			
14SK002	14SK002B	14SK002BS07	Vein	extension-unknown	185	58				quartz;	
14SK002	14SK002B	14SK002BS08	Foliation	unknownf	275	60	FOL MODERATE				
14SK002	14SK002B	14SK002BS09	Joint	joint	355	71			100.00		
14SK002	14SK002B	14SK002BS10	Joint	joint	183	70			100.00	hematite;	
14SK002	14SK002B	14SK002BS10	Joint	joint	110	68			70.00	hematite; epidote;	
14SK003	14SK003A	14SK003AS01	Foliation	unknownf	295	50	LIN MODERATE	L=S			

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK003	14SK003A	14SK003AS02	Joint	joint	200	88			110.00	biotite;	
14SK003	14SK003A	14SK003AS03	Joint	joint	106	69			89.00		Clean
14SK003	14SK003A	14SK003AS04	Joint	joint	290	59			80.00		
14SK003	14SK003A	14SK003AS05	Joint	joint	139	81			80.00		Clean
14SK003	14SK003A	14SK003AS06	Lineation	stretch	110	0	LIN MODERATE				Stretched biotite
14SK003	14SK003A	14SK003AS07	Shear	Ductile-SinU	250	75					
14SK003	14SK003A	14SK003AS08	Joint	joint	345	86			500.00	epidote; hematite;	
14SK004	14SK004A	14SK004AS01	Vein	extension-unknown	326	52				quartz;	
14SK004	14SK004A	14SK004AS02	Fault-Brittle-Ductile	UnknBD-Sin	52	77				quartz;	
14SK004	14SK004A	14SK004AS03	Fault-Brittle-Ductile	UnknDB-Dex	326	52				quartz;	
14SK004	14SK004A	14SK004AS04	Foliation	unknownf	316	50	LIN WEAK	L<S			Elongated feldspar and biotite
14SK004	14SK004A	14SK004AS05	Joint	joint	319	74			60.00		
14SK004	14SK004A	14SK004AS06	Lineation	stretch	94	34					
14SK005	14SK005A	14SK005AS01	Vein	extension-unknown	338	61				quartz;	
14SK005	14SK005A	14SK005AS02	Joint	joint	321	52			80.00	biotite;	Clean
14SK005	14SK005A	14SK005AS03	Joint	joint	105	85			100.00		
14SK005	14SK005A	14SK005AS04	Fault Brittle	UnknB-Dex	104	61			100.00		dextral, normal
14SK005	14SK005A	14SK005AS05	Lineation	slickenside	230	38					slickenlines showing sinistral displacement parallel to quartz vein
14SK006	14SK006A	14SK006AS01	Joint	joint	218	83			100.00		
14SK006	14SK006A	14SK006AS02	Foliation	unknownf	266	89	LIN WEAK	L<S			
14SK007	14SK007A	14SK007AS01	Joint	joint	216	72			50.00	hematite;	
14SK007	14SK007A	14SK007AS02	Foliation	unknownf	265	64	LIN WEAK	L<S			
14SK007	14SK007A	14SK007AS03	Vein	extension-unknown	218	81				quartz;	
14SK007	14SK007A	14SK007AS04	Joint	joint	280	89			200.00		
14SK008	14SK008A	14SK008AS01	Shear	Ductile-Unkn	281	82				hematite;	
14SK008	14SK008A	14SK008AS02	Joint	joint	56	68			30.00		
14SK008	14SK008A	14SK008AS03	Joint	joint	324	79			10.00	hematite;	
14SK009	14SK009A	14SK009AS01	Joint	joint	26	86			100.00		
14SK009	14SK009A	14SK009AS02	Joint	joint	14	74			40.00		
14SK009	14SK009A	14SK009AS03	Joint	joint	319	88			100.00	hematite;	
14SK009	14SK009A	14SK009AS04	Joint	joint	283	89			100.00	hematite;	
14SK009	14SK009A	14SK009AS05	Foliation	unknownf	296	71	LIN WEAK	L<S			
14SK010	14SK010A	14SK010AS01	Joint	joint	328	89			30.00	hematite;	
14SK010	14SK010A	14SK010AS02	Joint	joint	298	76			80.00	hematite;	
14SK010	14SK010A	14SK010AS03	Joint	joint	248	62			80.00		
14SK010	14SK010A	14SK010AS04	Foliation	unknownf	97	80	LIN WEAK	L<S			
14SK011	14SK011A	14SK011AS01	Foliation	unknownf	284	79	LIN WEAK	L<S			
14SK011	14SK011A	14SK011AS02	Vein	extension-unknown	171	25				quartz;	sericite after biotite in alteration envelope around 1cm qtz vein
14SK011	14SK011A	14SK011AS03	Joint	joint	195	85			30.00		
14SK011	14SK011A	14SK011AS04	Joint	joint	11	84			50.00		
14SK011	14SK011A	14SK011AS05	Joint	joint	45	82			30.00	hematite;	
14SK012	14SK012A	14SK012AS01	Joint	joint	220	80			60.00		
14SK012	14SK012A	14SK012AS02	Joint	joint	188	82			50.00	hematite;	
14SK012	14SK012A	14SK012AS03	Joint	joint	337	86			30.00		
14SK012	14SK012A	14SK012AS04	Foliation	unknownf	277	88	LIN WEAK	L<S			
14SK013	14SK013A	14SK013AS01	Joint	joint	245	23			200.00	hematite;	
14SK013	14SK013A	14SK013AS02	Joint	joint	256	87			100.00		
14SK013	14SK013A	14SK013AS03	Joint	joint	212	85					

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK013	14SK013A	14SK013AS04	Joint	joint	172	83			200.00	hematite;	
14SK013	14SK013A	14SK013AS05	Foliation	unknownf	275	55	LIN WEAK	L<S			
14SK014	14SK014A	14SK014AS01	Joint	joint	355	75			150.00	hematite;	
14SK014	14SK014A	14SK014AS02	Joint	joint	102	35			200.00	hematite;	
14SK014	14SK014A	14SK014AS03	Joint	joint	280	89			40.00		
14SK014	14SK014A	14SK014AS04	Joint	joint	250	60			150.00		
14SK014	14SK014A	14SK014AS05	Foliation	unknownf	274	74	LIN WEAK	L=S			
14SK015	14SK015A	14SK015AS01	Joint	joint	347	77			10.00		
14SK015	14SK015A	14SK015AS02	Joint	joint	14	89			100.00		
14SK015	14SK015A	14SK015AS03	Joint	joint	279	88			200.00		
14SK015	14SK015A	14SK015AS04	Foliation	unknownf	275	70	LIN WEAK	L<S			
14SK016	14SK016A	14SK016AS01	Joint	joint	155	83			100.00	hematite;	
14SK016	14SK016A	14SK016AS02	Joint	joint	68	82			200.00	hematite;	
14SK016	14SK016A	14SK016AS03	Joint	joint	281	5			200.00	hematite;	
14SK016	14SK016A	14SK016AS04	Joint	joint	80	40			200.00	hematite;	
14SK016	14SK016A	14SK016AS05	Foliation	unknownf	282	65					
14SK017	14SK017A	14SK017AS01	Joint	joint	288	82			150.00		
14SK017	14SK017A	14SK017AS02	Joint	joint	268	88			100.00		
14SK017	14SK017A	14SK017AS03	Vein	extension-unknown	150	69					
14SK018	14SK018A	14SK018AS01	Joint	joint	272	74			80.00	hematite;	
14SK018	14SK018A	14SK018AS02	Joint	joint	179	86			50.00	hematite;	
14SK018	14SK018A	14SK018AS03	Joint	joint	120	63			200.00		
14SK018	14SK018A	14SK018AS04	Vein	extension-unknown	205	84					
14SK019	14SK019A	14SK019AS01	Joint	joint	265	72			150.00		
14SK019	14SK019A	14SK019AS02	Joint	joint	318	80			30.00		
14SK019	14SK019A	14SK019AS03	Joint	joint	10	85			89.00	hematite;	
14SK019	14SK019A	14SK019AS04	Foliation	unknownf	252	70	LIN WEAK	L<S			
14SK020	14SK020A	14SK020AS01	Fault-Brittle-Ductile	UnknBD-Sin	179	74			200.00	epidote;	
14SK020	14SK020A	14SK020AS02	Joint	joint	164	82			10.00	limonite;	
14SK020	14SK020A	14SK020AS03	Joint	joint	169	60			10.00	limonite;	
14SK020	14SK020A	14SK020AS04	Cleavage	unknown_cleav	272	46					
14SK020	14SK020A	14SK020AS05	Vein	extension-unknown	260	58			50.00	epidote;	
14SK021	14SK021A	14SK021AS01	Joint	joint	192	72			40.00	epidote; hematite;	
14SK021	14SK021A	14SK021AS02	Joint	joint	266	65			100.00	epidote;	
14SK021	14SK021B	14SK021BS03	Fault Brittle	UnknB-Dex	170	76			100.00	epidote;	
14SK022	14SK022A	14SK022AS01	Vein	shear-unknown	265	65			5.00	quartz;	
14SK022	14SK022A	14SK022AS02	Joint	joint	317	75			3.00		
14SK022	14SK022A	14SK022AS03	Joint	joint	311	80			5.00		
14SK022	14SK022A	14SK022AS04	Joint	joint	25	45			20.00		
14SK023	14SK023A	14SK023AS01	Joint	joint	345	75					
14SK023	14SK023A	14SK023AS02	Joint	joint	108	25					
14SK024	14SK024A	14SK024AS01	Joint	joint	5	12					
14SK025	14SK025A	14SK025AS01	Joint	joint	143	12			100.00	hematite;	
14SK025	14SK025A	14SK025AS02	Joint	joint	300	75			10.00		
14SK025	14SK025A	14SK025AS03	Joint	joint	25	80			100.00		
14SK026	14SK026A	14SK026AS01	Joint	joint	155	80			80.00		
14SK026	14SK026A	14SK026AS02	Joint	joint	310	55			200.00		
14SK026	14SK026A	14SK026AS03	Joint	joint	112	76			30.00		
14SK026	14SK026A	14SK026AS04	Foliation	unknownf	315	75	LIN WEAK	L<S			
14SK027	14SK027A	14SK027AS01	Joint	joint	122	14			20.00		

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK027	14SK027A	14SK027AS02	Joint	joint	232	86			80.00		
14SK027	14SK027A	14SK027AS03	Joint	joint	105	82			50.00		
14SK027	14SK027A	14SK027AS04	Foliation	unknownf	104	70	LIN WEAK	L<S			
14SK028	14SK028A	14SK028AS01	Joint	joint	105	75			100.00		
14SK028	14SK028A	14SK028AS02	Joint	joint	210	89			100.00		
14SK028	14SK028A	14SK028AS03	Joint	joint	275	54			150.00		
14SK028	14SK028A	14SK028AS04	Foliation	unknownf	295	85	LIN WEAK	L<S			
14SK029	14SK029A	14SK029AS01	Joint	joint	84	75			200.00		
14SK029	14SK029A	14SK029AS02	Joint	joint	11	87			20.00		
14SK029	14SK029A	14SK029AS03	Foliation	unknownf	103	60	FOL MODERATE				
14SK031	14SK031A	14SK031AS01	Joint	joint	172	64			30.00		
14SK031	14SK031A	14SK031AS02	Vein	extension-unknown	215	65					
14SK031	14SK031A	14SK031AS03	Joint	joint	288	88			80.00		
14SK031	14SK031A	14SK031AS04	Foliation	unknownf	105	65	FOL MODERATE	L<S			
14SK031	14SK031A	14SK031AS05	Joint	joint	266	74			30.00	hematite;	
14SK031	14SK031A	14SK031AS06	Joint	joint	36	84			100.00		
14SK031	14SK031A	14SK031AS07	Foliation	unknownf	280	72	FOL MODERATE	L<S			
14SK032	14SK032A	14SK032AS02	Joint	joint	15	89			100.00		
14SK032	14SK032A	14SK032AS03	Joint	joint	120	68			150.00		
14SK032	14SK032A	14SK032AS04	Vein	shear-unknown	4	74				quartz;	
14SK032	14SK032A	14SK032AS05	Vein	fault-unknown	90	74				quartz;	
14SK032	14SK032A	14SK032AS06	Foliation	unknownf	258	75	FOL MODERATE	L<S			
14SK032	14SK032A	14SK032AS01	Shear	Ductile-DexU	265	75	FOL MODERATE	L<S	0.00	quartz;	Dextral shear zone with S/C fabrics and sigmoidal quartz veins
14SK033	14SK033A	14SK033AS01	Joint	joint	251	81			15.00	hematite;	
14SK033	14SK033A	14SK033AS02	Joint	joint	154	85			200.00	hematite;	
14SK033	14SK033A	14SK033AS03	Joint	joint	245	90			50.00	hematite;	
14SK033	14SK033A	14SK033AS04	Foliation	unknownf	278	70	FOL WEAK	L<S			
14SK034	14SK034A	14SK034AS01	Fault Brittle	UnknB-Dex	280	75			50.00		
14SK034	14SK034A	14SK034AS02	Joint	joint	158	77			70.00		
14SK034	14SK034A	14SK034AS03	Foliation	unknownf	86	70	FOL WEAK	L<S			
14SK034	14SK034A	14SK034AS04	Fault Brittle	UnknB-Dex	282	80			50.00		Offseting dyke.
14SK034	14SK034A	14SK034AS05	Vein	extension-unknown	146	73				quartz;	
14SK035	14SK035A	14SK035AS01	Igneous-Layering	Igneous_Unsub2	115	70					
14SK035	14SK035A	14SK035AS02	Joint	joint	35	78			100.00		
14SK035	14SK035A	14SK035AS03	Joint	joint	125	75			80.00		
14SK035	14SK035A	14SK035AS04	Shear	Ductile-Unkn	110	72	FOL STRONG				
14SK036	14SK036A	14SK036AS01	Joint	joint	262	83			100.00		
14SK036	14SK036A	14SK036AS02	Foliation	unknownf	85	50	FOL WEAK	L<S			
14SK037	14SK037A	14SK037AS01	Shear	Ductile-Unkn	118	80	FOL STRONG			quartz;	
14SK037	14SK037A	14SK037AS02	Vein	fault-unknown	118	80				quartz;	
14SK037	14SK037A	14SK037AS03	Joint	joint	283	70			20.00		
14SK037	14SK037B	14SK037BS04	Joint	joint	35	78			10.00		
14SK037	14SK037A	14SK037AS05	Foliation	unknownf	128	73	FOL MODERATE	L<S			
14SK038	14SK038A	14SK038AS01	Joint	joint	179	70			50.00		
14SK038	14SK038A	14SK038AS02	Joint	joint	243	88			50.00		
14SK038	14SK038A	14SK038AS03	Joint	joint	35	6			50.00		
14SK039	14SK039A	14SK039AS01	Joint	joint	300	76			20.00		
14SK039	14SK039A	14SK039AS02	Joint	joint	211	69			20.00		
14SK040	14SK040A	14SK040AS01	Joint	joint	245	68			5.00		

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK040	14SK040A	14SK040AS02	Joint	joint	268	79			10.00		
14SK041	14SK041A	14SK041AS01	Joint	joint	272	75			30.00	hematite;	
14SK041	14SK041A	14SK041AS02	Joint	joint	335	88			30.00	hematite;	
14SK041	14SK041A	14SK041AS03	Joint	joint	36	87			10.00		
14SK042	14SK042A	14SK042AS01	Joint	joint	249	79			30.00	hematite;	
14SK042	14SK042A	14SK042AS02	Joint	joint	15	54			50.00	hematite;	
14SK042	14SK042A	14SK042AS03	Joint	joint	168	83			50.00		
14SK043	14SK043A	14SK043AS01	Joint	joint	332	62			30.00		
14SK043	14SK043A	14SK043AS02	Joint	joint	92	80			20.00		
14SK043	14SK043A	14SK043AS03	Joint	joint	91	53			30.00		
14SK044	14SK044A	14SK044AS01	Joint	joint	282	82			20.00	hematite;	
14SK044	14SK044A	14SK044AS02	Joint	joint	338	72			20.00		
14SK044	14SK044A	14SK044AS03	Joint	joint	204	81			20.00	hematite;	
14SK045	14SK045A	14SK045AS01	Joint	joint	249	79			30.00	hematite;	
14SK045	14SK045A	14SK045AS02	Joint	joint	134	84			20.00		
14SK046	14SK046A	14SK046AS01	Joint	joint	334	89			10.00		
14SK046	14SK046A	14SK046AS02	Joint	joint	295	65			20.00	hematite;	
14SK046	14SK046A	14SK046AS03	Joint	joint	9	62			30.00	hematite;	
14SK047	14SK047A	14SK047AS01	Joint	joint	182	74			5.00	hematite;	
14SK047	14SK047A	14SK047AS02	Joint	joint	300	70			20.00	hematite;	
14SK048	14SK048A	14SK048AS01	Joint	joint	280	78			30.00	hematite;	
14SK048	14SK048A	14SK048AS02	Joint	joint	64	86			20.00	hematite;	
14SK048	14SK048A	14SK048AS03	Joint	joint	164	81			50.00	hematite;	
14SK049	14SK049A	14SK049AS01	Joint	joint	195	83			20.00	hematite;	
14SK049	14SK049A	14SK049AS02	Joint	joint	35	20			100.00	hematite;	
14SK049	14SK049A	14SK049AS03	Joint	joint	155	66			100.00		
14SK050	14SK050A	14SK050AS01	Foliation	unknownf	84	20	FOL STRONG				
14SK050	14SK050A	14SK050AS02	Joint	joint	155	75			30.00		
14SK050	14SK050A	14SK050AS03	Joint	joint	255	50			30.00	hematite;	
14SK050	14SK050A	14SK050AS04	Joint	joint	80	13			5.00		
14SK051	14SK051A	14SK051AS01	Foliation	unknownf	34	34	FOL MODERATE	L<S			
14SK051	14SK051A	14SK051AS02	Joint	joint	178	68			20.00	hematite;	
14SK051	14SK051A	14SK051AS03	Joint	joint	266	83			50.00		
14SK051	14SK051A	14SK051AS04	Joint	joint	274	35			10.00		
14SK052	14SK052A	14SK052AS01	Vein	extension-unknown	275	78				quartz;	
14SK052	14SK052A	14SK052AS02	Joint	joint	90	86			20.00	hematite;	
14SK052	14SK052A	14SK052AS03	Joint	joint	12	85			5.00	hematite;	
14SK052	14SK052A	14SK052AS04	Joint	joint	285	71			10.00	hematite;	
14SK053	14SK053A	14SK053AS01	Fault Brittle	UnknB-Dex	155	79			200.00		3 cm offset of aplite dyke
14SK053	14SK053A	14SK053AS02	Joint	joint	45	84			200.00		
14SK053	14SK053A	14SK053AS03	Joint	joint	6	66			5.00	hematite;	
14SK053	14SK053A	14SK053AS04	Shear	Ductile-DexU	65	58				quartz;	
14SK053	14SK053A	14SK053AS05	Foliation	unknownf	64	70					
14SK053	14SK053A	14SK053AS06	Vein	extension-unknown	79	73				quartz;	
14SK054	14SK054A	14SK054AS01	Joint	joint	202	82			30.00	epidote;	
14SK054	14SK054A	14SK054AS02	Joint	joint	330	74			150.00		
14SK054	14SK054A	14SK054AS03	Joint	joint	245	86			100.00	hematite;	
14SK054	14SK054A	14SK054AS04	Foliation	unknownf	126	72					
14SK055	14SK055A	14SK055AS01	Foliation	unknownf	112	68	LIN MODERATE	L=S			
14SK055	14SK055A	14SK055AS02	Joint	joint	175	85			100.00		

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK055	14SK055A	14SK055AS03	Joint	joint	55	74			50.00	hematite;	
14SK055	14SK055A	14SK055AS04	Joint	joint	254	52			100.00	hematite;	
14SK055	14SK055A	14SK055AS05	Igneous-Layering	Igneous_Unsub2	278	64					Flow banding
14SK055	14SK055A	14SK055AS06	Lineation	mineral	301	31	LIN MODERATE	L=S			
14SK056	14SK056A	14SK056AS01	Joint	joint	115	74			80.00	quartz; chlorite;	
14SK056	14SK056A	14SK056AS02	Vein	extension-unknown	344	70				quartz;	
14SK056	14SK056A	14SK056AS03	Igneous-Layering	Igneous_Unsub2	105	64				actinolite;	Flow band with acicular 5-15 mm long actinolite crystals
14SK056	14SK056A	14SK056AS04	Joint	joint	112	75			10.00	epidote; chlorite;	
14SK056	14SK056A	14SK056AS05	Joint	joint	29	77			40.00	chlorite;	
14SK056	14SK056A	14SK056AS06	Foliation	unknownf	111	68	FOL STRONG	L=S			
14SK056	14SK056A	14SK056AS07	Lineation	mineral	105	4	LIN MODERATE	L=S			
14SK057	14SK057A	14SK057AS01	Joint	joint	93	62			200.00	hematite;	
14SK057	14SK057A	14SK057AS02	Joint	joint	245	87			20.00		
14SK057	14SK057A	14SK057AS03	Foliation	unknownf	295	70	FOL WEAK	L<S			
14SK058	14SK058A	14SK058AS01	Joint	joint	290	86			80.00	hematite;	
14SK058	14SK058A	14SK058AS02	Joint	joint	15	75			20.00	hematite;	
14SK058	14SK058A	14SK058AS03	Joint	joint	39	33			100.00		
14SK059	14SK059A	14SK059AS01	Joint	joint	219	75			50.00		
14SK059	14SK059A	14SK059AS02	Joint	joint	295	72			30.00		
14SK059	14SK059A	14SK059AS03	Joint	joint	280	80			20.00		
14SK060	14SK060A	14SK060AS01	Joint	joint	294	69			30.00	hematite;	
14SK060	14SK060A	14SK060AS02	Joint	joint	27	74			100.00	hematite;	
14SK061	14SK061A	14SK061AS01	Joint	joint	22	76			30.00		
14SK061	14SK061A	14SK061AS02	Shear	Ductile-DexU	132	78					
14SK062		S01	Vein	extension-unknown	130	88				quartz;	
14SK062	14SK062A	14SK062AS02	Joint	joint	132	70			40.00		
14SK062	14SK062A	14SK062AS03	Joint	joint	10	79			100.00		
14SK062	14SK062A	14SK062AS04	Foliation	unknownf	220	70	FOL WEAK	L<S			
14SK063	14SK063A	14SK063AS01	Fault Brittle	UnknB-Dex	75	86					
14SK063	14SK063A	14SK063AS02	Joint	joint	20	76			100.00		
14SK063	14SK063A	14SK063AS03	Vein	extension-unknown	50	68				quartz;	
14SK063	14SK063A	14SK063AS04	Igneous-Layering	Igneous_Unsub2	130	60					Magmatic layering defined by streched xenoliths
14SK064	14SK064A	14SK064AS01	Joint	joint	278	75			10.00		
14SK064	14SK064A	14SK064AS02	Joint	joint	212	84			50.00		
14SK064	14SK064A	14SK064AS03	Joint	joint	92	53			50.00		
14SK064	14SK064A	14SK064AS04	Joint	joint	230	22			100.00		
14SK065	14SK065A	14SK065AS01	Joint	joint	46	34			20.00	hematite; epidote;	
14SK065	14SK065A	14SK065AS02	Joint	joint	23	28			50.00		
14SK065	14SK065A	14SK065AS03	Joint	joint	156	53			50.00		
14SK066	14SK066A	14SK066AS01	Joint	joint	214	80			10.00		
14SK066	14SK066A	14SK066AS02	Joint	joint	125	82			10.00	hematite;	
14SK066	14SK066A	14SK066AS03	Foliation	unknownf	35	15	FOL MODERATE	L<S			
14SK067	14SK067A	14SK067AS01	Joint	joint	98	82			20.00	hematite;	
14SK067	14SK067A	14SK067AS02	Joint	joint	9	85			20.00	hematite;	
14SK067	14SK067A	14SK067AS03	Joint	joint	171	74			50.00		
14SK068	14SK068A	14SK068AS01	Joint	joint	49	28			50.00		
14SK068	14SK068A	14SK068AS02	Joint	joint	185	74			30.00		
14SK068	14SK068A	14SK068AS03	Joint	joint	274	84			50.00		

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK069	14SK069A	14SK069AS01	Joint	joint	94	88			30.00	hematite;	
14SK069	14SK069A	14SK069AS02	Joint	joint	205	72			40.00		
14SK070	14SK070A	14SK070AS01	Joint	joint	278	78			40.00		
14SK070	14SK070A	14SK070AS02	Joint	joint	200	78			60.00		
14SK071	14SK071A	14SK071AS01	Joint	joint	80	84			30.00	hematite;	
14SK071	14SK071A	14SK071AS02	Joint	joint	196	84			100.00		
14SK071	14SK071A	14SK071AS03	Joint	joint	337	27			100.00		
14SK071	14SK071A	14SK071AS04	Foliation	unknownf	342	40	FOL MODERATE	L<S			
14SK071	14SK071A	14SK071AS05	Vein	extension-unknown	200	65			100.00	quartz;	
14SK072	14SK072A	14SK072AS01	Joint	joint	129	74			30.00	hematite;	
14SK072	14SK072A	14SK072AS02	Joint	joint	24	88			20.00		
14SK072	14SK072A	14SK072AS03	Joint	joint	194	15			40.00		
14SK072	14SK072A	14SK072AS04	Foliation	unknownf	6	24	FOL MODERATE	L<S			
14SK073	14SK073A	14SK073AS01	Vein	extension-unknown	289	67				quartz;	
14SK073	14SK073A	14SK073AS02	Joint	joint	87	75			30.00	hematite;	
14SK073	14SK073A	14SK073AS03	Joint	joint	13	89			50.00		
14SK073	14SK073A	14SK073AS04	Fault Brittle	UnknB-Dex	185	89				quartz;	
14SK074	14SK074A	14SK074AS01	Joint	joint	145	80			5.00		
14SK074	14SK074A	14SK074AS02	Joint	joint	39	75			5.00		
14SK075	14SK075A	14SK075AS01	Vein	extension-unknown	78	84				quartz;	
14SK075	14SK075A	14SK075AS02	Joint	joint	270	75			30.00		
14SK076	14SK076A	14SK076AS01	Joint	joint	304	73			5.00		
14SK076	14SK076A	14SK076AS02	Joint	joint	182	83			100.00	hematite;	
14SK076	14SK076A	14SK076AS03	Vein	extension-unknown	184	80				quartz;	
14SK077	14SK077A	14SK077AS01	Joint	joint	15	87			200.00		
14SK077	14SK077A	14SK077AS02	Joint	joint	200	78			20.00	hematite;	
14SK077	14SK077A	14SK077AS03	Joint	joint	102	83			100.00	hematite;	
14SK078	14SK078A	14SK078AS01	Joint	joint	122	56				quartz;	
14SK078	14SK078A	14SK078AS02	Joint	joint	24	77			20.00	hematite;	
14SK078	14SK078A	14SK078AS03	Joint	joint	310	84			10.00		
14SK078	14SK078A	14SK078AS04	Joint	joint	1	24			50.00	hematite;	
14SK079	14SK079A	14SK079AS01	Joint	joint	48	83			150.00		
14SK079	14SK079A	14SK079AS02	Joint	joint	185	46			200.00		
14SK079	14SK079A	14SK079AS03	Joint	joint	145	82			250.00		
14SK080	14SK080A	14SK080AS01	Joint	joint	4	59			20.00	hematite;	
14SK080	14SK080A	14SK080AS02	Joint	joint	75	75			20.00	hematite;	
14SK080	14SK080A	14SK080AS03	Joint	joint	126	66			200.00		
14SK081	14SK081A	14SK081AS01	Joint	joint	114	89			200.00		
14SK081	14SK081A	14SK081AS02	Joint	joint	125	54			100.00		
14SK082	14SK082A	14SK082AS01	Joint	joint	130	58			30.00		
14SK082	14SK082A	14SK082AS02	Joint	joint	46	63			100.00		
14SK083	14SK083A	14SK083AS01	Joint	joint	314	88			100.00		
14SK083	14SK083A	14SK083AS02	Joint	joint	114	12			50.00	hematite;	
14SK083	14SK083A	14SK083AS03	Joint	joint	342	74			100.00		
14SK084	14SK084A	14SK084AS01	Joint	joint	68	84			10.00	hematite;	
14SK084	14SK084A	14SK084AS02	Joint	joint	266	86			20.00	hematite;	
14SK084	14SK084A	14SK084AS03	Foliation	unknownf	34	34	FOL MODERATE	L<S			
14SK084	14SK084A	14SK084AS04	Joint	joint	21	14			100.00		Jointing parallel to foliation
14SK085	14SK085A	14SK085AS01	Joint	joint	59	86			20.00	hematite;	
14SK085	14SK085A	14SK085AS02	Joint	joint	158	78			40.00	hematite;	

Table A.4 - Summary of Geological Structure Observations

STATION ID	LITHO ID	STRUC ID	TYPE	SUBTYPE	AZIM.	DIP	INTENSITY	FABRIC	STRUCSPACE	STRUCINFIL	NOTES
14SK086	14SK086A	14SK086AS01	Joint	joint	240	86			20.00	hematite;	
14SK086	14SK086A	14SK086AS02	Joint	joint	249	68			100.00		
14SK086	14SK086A	14SK086AS03	Foliation	unknownf	271	46	FOL MODERATE	L<S			
14SK086	14SK086A	14SK086AS04	Joint	joint	296	55			30.00		
14SK087	14SK087A	14SK087AS01	Joint	joint	321	83			30.00		
14SK087	14SK087A	14SK087AS02	Joint	joint	314	16			200.00		
14SK087	14SK087A	14SK087AS03	Joint	joint	51	55			200.00		
14SK088	14SK088A	14SK088AS02	Joint	joint	250	80			200.00	hematite;	
14SK088	14SK088A	14SK088AS01	Joint	joint	98	70			200.00	hematite; epidote;	
14SK089	14SK089A	14SK089AS01	Joint	joint	309	78			50.00	hematite;	
14SK089	14SK089A	14SK089AS02	Joint	joint	263	68			100.00	hematite;	
14SK089	14SK089A	14SK089AS03	Joint	joint	331	77			100.00	hematite;	
14SK089	14SK089A	14SK089AS04	Joint	joint	18	7			100.00	hematite;	
14SK090	14SK090A	14SK090AS01	Vein	extension-unknown	196	85				quartz;	
14SK090	14SK090A	14SK090AS02	Joint	joint	152	65			30.00		
14SK090	14SK090A	14SK090AS03	Joint	joint	175	79			30.00		
14SK090	14SK090A	14SK090AS04	Joint	joint	314	54			40.00		
14SK091	14SK091A	14SK091AS01	Joint	joint	228	86			30.00		
14SK091	14SK091A	14SK091AS02	Joint	joint	271	24			20.00		
14SK091	14SK091A	14SK091AS03	Vein	shear-unknown	218	44				quartz;	
14SK091	14SK091A	14SK091AS04	Joint	joint	190	73			10.00		

Table A.5 - Summary of Geomechanical Characterization Observations

STATION ID	LITHO ID	STRUC ID	TYPE	DENSITY	FDDEF	HARDNESS	RH DETAILS	NOTES
14TLG001	14TLG001A	14TLG001AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG002	14TLG002A	14TLG002AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG003	14TLG003A	14TLG003AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG004	14TLG004A	14TLG004AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG005	14TLG005A	14TLG005AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG006	14TLG006A	14TLG006AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG007	14TLG007A	14TLG007AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG008	14TLG008A	14TLG008AD01	Brittle	None	massive; joint spacing > 100cm	Extremely Strong	R6	Only chipped with hammer
14TLG009	14TLG009A	14TLG009AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG010	14TLG010A	14TLG010AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG012	14TLG012A	14TLG012AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG013	14TLG013A	14TLG013AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG014	14TLG014A	14TLG014AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG015	14TLG015A	14TLG015AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG016	14TLG016A	14TLG016AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG018	14TLG018A	14TLG018AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG019	14TLG019A	14TLG019AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG020	14TLG020A	14TLG020AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG021	14TLG021A	14TLG021AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG022	14TLG022A	14TLG022AD01	Brittle	None	massive; joint spacing > 100cm	Very Strong	R5	Fractured if many blows
14TLG023	14TLG023A	14TLG023AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG024	14TLG024A	14TLG024AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG025	14TLG025A	14TLG025AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG026	14TLG026A	14TLG026AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14TLG027	14TLG027A	14TLG027AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG028	14TLG028A	14TLG028AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG029	14TLG029A	14TLG029AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG030	14TLG030A	14TLG030AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG031	14TLG031A	14TLG031AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG032	14TLG032A	14TLG032AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG033	14TLG033A	14TLG033AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG035	14TLG035A	14TLG035AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG036	14TLG036A	14TLG036AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG037	14TLG037A	14TLG037AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG038	14TLG038A	14TLG038AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG039	14TLG039A	14TLG039AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG040	14TLG040A	14TLG040AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG041	14TLG041A	14TLG041AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG042	14TLG042A	14TLG042AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG043	14TLG043A	14TLG043AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG044	14TLG044A	14TLG044AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG045	14TLG045A	14TLG045AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG046	14TLG046A	14TLG046AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14TLG047	14TLG047A	14TLG047AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG048	14TLG048A	14TLG048AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14TLG049	14TLG049A	14TLG049AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14TLG050	14TLG050A	14TLG050AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14TLG051	14TLG051A	14TLG051AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14TLG052	14TLG052A	14TLG052AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14TLG053	14TLG053A	14TLG053AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows

Table A.5 - Summary of Geomechanical Characterization Observations

STATION ID	LITHO ID	STRUC ID	TYPE	DENSITY	FDDEF	HARDNESS	RH DETAILS	NOTES
14TLG054	14TLG054A	14TLG054AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK002	14SK002A	14SK002AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK002	14SK002B	14SK002BD02	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK003	14SK003A	14SK003AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK004	14SK004A	14SK004AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14SK005	14SK005A	14SK005AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK006	14SK006A	14SK006AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK007	14SK007A	14SK007AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK008	14SK008A	14SK008AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14SK009	14SK009A	14SK009AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK010	14SK010A	14SK010AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK011	14SK011A	14SK011AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK012	14SK012A	14SK012AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK013	14SK013A	14SK013AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK013	14SK013A	14SK013AD02	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK014	14SK014A	14SK014AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14SK015	14SK015A	14SK015AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14SK016	14SK016A	14SK016AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK017	14SK017A	14SK017AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK018	14SK018A	14SK018AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK019	14SK019A	14SK019AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK020	14SK020A	14SK020AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK021	14SK021A	14SK021AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK022	14SK022A	14SK022AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK023	14SK023A	14SK023AD01	Brittle	Abundant	blocky-disturbed; joint spacing 3-10cm	Very Strong	R5	Fractured if many blows
14SK024	14SK024A	14SK024AD01	Brittle	None	massive; joint spacing > 100cm	Very Strong	R5	Fractured if many blows
14SK025	14SK025A	14SK025AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK026	14SK026A	14SK026AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK027	14SK027A	14SK027AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK028	14SK028A	14SK028AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK029	14SK029A	14SK029AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK031	14SK031A	14SK031AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK031	14SK031A	14SK031AD02	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK032	14SK032A	14SK032AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK033	14SK033A	14SK033AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK034	14SK034A	14SK034AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK035	14SK035A	14SK035AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK036	14SK036A	14SK036AD01	Brittle	None	massive; joint spacing > 100cm	Extremely Strong	R6	Only chipped with hammer
14SK037	14SK037A	14SK037AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK038	14SK038A	14SK038AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK039	14SK039A	14SK039AD01	Ductile;Brittle-Ductile	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK040	14SK040A	14SK040AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK041	14SK041A	14SK041AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK042	14SK042A	14SK042AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK043	14SK043A	14SK043AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK044	14SK044A	14SK044AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK045	14SK045A	14SK045AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK046	14SK046A	14SK046AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK047	14SK047A	14SK047AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK048	14SK048A	14SK048AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows

Table A.5 - Summary of Geomechanical Characterization Observations

STATION ID	LITHO ID	STRUC ID	TYPE	DENSITY	FDDEF	HARDNESS	RH DETAILS	NOTES
14SK049	14SK049A	14SK049AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK049	14SK049A	14SK049AD02	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK050	14SK050A	14SK050AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK051	14SK051A	14SK051AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK052	14SK052A	14SK052AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK053	14SK053A	14SK053AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK054	14SK054A	14SK054AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK055	14SK055A	14SK055AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK056	14SK056A	14SK056AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK057	14SK057A	14SK057AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Extremely Strong	R6	Only chipped with hammer
14SK058	14SK058A	14SK058AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK059	14SK059A	14SK059AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Strong	R4	Fractured if >1 hammer blow
14SK060	14SK060A	14SK060AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Strong	R4	Fractured if >1 hammer blow
14SK061	14SK061A	14SK061AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK062	14SK062A	14SK062AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK063	14SK063A	14SK063AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK064	14SK064A	14SK064AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Strong	R4	Fractured if >1 hammer blow
14SK065	14SK065A	14SK065AD01	Brittle	Abundant	blocky-disturbed; joint spacing 3-10cm	Very Strong	R5	Fractured if many blows
14SK002	14SK002A	14SK002AD01	Brittle	Sparse	very blocky; joint spacing 10-40cm	Extremely Strong	R6	Only chipped with hammer
14SK066	14SK066A	14SK066AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK067	14SK067A	14SK067AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK068	14SK068A	14SK068AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK069	14SK069A	14SK069AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK070	14SK070A	14SK070AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK071	14SK071A	14SK071AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK072	14SK072A	14SK072AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK073	14SK073A	14SK073AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK074	14SK074A	14SK074AD01	Brittle	Abundant	blocky-disturbed; joint spacing 3-10cm	Very Strong	R5	Fractured if many blows
14SK075	14SK075A	14SK075AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK076	14SK076A	14SK076AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK077	14SK077A	14SK077AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK078	14SK078A	14SK078AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK079	14SK079A	14SK079AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK080	14SK080A	14SK080AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK081	14SK081A	14SK081AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK082	14SK082A	14SK082AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK083	14SK083A	14SK083AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK084	14SK084A	14SK084AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK085	14SK085A	14SK085AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK086	14SK086A	14SK086AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK087	14SK087A	14SK087AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK088	14SK088A	14SK088AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK088	14SK088A	14SK088AD02	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK088	14SK088A	14SK088AD01	Brittle	Sparse		Very Strong	R5	Fractured if many blows
14SK089	14SK089A	14SK089AD01	Brittle	Sparse	blocky; joint spacing 30-100cm	Very Strong	R5	Fractured if many blows
14SK090	14SK090A	14SK090AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows
14SK091	14SK091A	14SK091AD01	Brittle	Moderate	very blocky; joint spacing 10-40cm	Very Strong	R5	Fractured if many blows

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14TLG001	14TLG001AP01	1	major lithology	pen/pencil	NE	4257 - Dyke
14TLG001	14TLG001AP02	2	structure	pen/pencil	N	4256 - Representative lithology
14TLG002	14TLG002AP01	1	major lithology	pen/pencil	N	4258 - Representative lithology
14TLG002	14TLG002AP02	2	outcrop	person	N	4259. General lay of the landscape
14TLG003	14TLG003AP01	1	major lithology	pen/pencil	S	4260 - Representative lithology
14TLG003	14TLG003AP02	2	structure	pen/pencil	W	4261 - Fault
14TLG004	14TLG004AP01	1	structure	pen/pencil	Top	4262; Dextral fault
14TLG004	14TLG004AP02	2	major lithology	pen/pencil	NW	4263 - Representative lithology
14TLG005	14TLG005AP01	1	major lithology	pen/pencil	Top	4264 - Representative lithology
14TLG006	14TLG006AP01	1	major lithology	pen/pencil	E	4266 - Representative lithology
14TLG007	14TLG007AP01	1	major lithology	pen/pencil	Top	4267 - Representative lithology
14TLG008	14TLG008AP01	1	major lithology	pen/pencil	Top	4268 - Representative lithology
14TLG010	14TLG010AP01	1	major lithology	pen/pencil	Top	4270 - Representative lithology
14TLG012	14TLG012AP01	1	major lithology	pen/pencil	Top	4273 - Representative lithology
14TLG013	14TLG013BP01	1	structure	pen/pencil	E	1083 - Structure
14TLG013	14TLG013AP02	2	major lithology	pen/pencil	E	1084 - Representative lithology
14TLG014	14TLG014AP01	1	major lithology	hammer	E	4275 - Representative lithology
14TLG014	14TLG014AP02	2	structure	pen/pencil	W	4276 - Structure: sinistral fault
14TLG015	14TLG015AP01	1	major lithology	pen/pencil	Top	4277 - Representative lithology
14TLG016	14TLG016AP01	1	structure	hammer	NE	4277 - Shear zone
14TLG016	14TLG016AP02	2	major lithology	pen/pencil	E	4278 - Joint with hematite infill and lithology
14TLG016	14TLG016AP03	3	see Caption field	person	S	4280 - Possible area for detailed mapping
14TLG016	14TLG016CP04	4	minor lithology	hammer	N	4281 - Aplite dyke
14TLG018	14TLG018AP01	1	major lithology	hammer	Top	4283 - Representative lithology
14TLG018	14TLG018AP02	2	structure	pen/pencil	Top	4284 - Fault
14TLG019	14TLG019AP01	1	major lithology	pen/pencil	E	4285 - Representative lithology
14TLG020	14TLG020AP01	1	major lithology	pen/pencil	E	4286 - Representative lithology
14TLG020	14TLG020AP02	2	dyke/vein	pen/pencil	E	4287 - Epidote vein coating
14TLG021	14TLG021AP01	1	major lithology	pen/pencil	E	4288 - Representative lithology
14TLG022	14TLG022AP01	1	major lithology	pen/pencil	SW	4289 - Representative lithology
14TLG023	14TLG023AP01	1	major lithology	pen/pencil	Top	4290 - Representative lithology
14TLG024	14TLG024AP01	1	major lithology	pen/pencil	NW	4291 - Representative lithology
14TLG025	14TLG025AP01	1	major lithology	pen/pencil	N	4292 - Representative lithology
14TLG026	14TLG026AP01	1	structure	hammer	NW	4294 - General outcrop
14TLG026	14TLG026AP02	2	major lithology	pen/pencil	Top	4293 - Representative lithology
14TLG027	14TLG027AP01	1	outcrop	hammer	Top	4296 - General outcrop
14TLG028	14TLG028AP01	1	major lithology	pen/pencil	E	4297 - Representative lithology
14TLG029	14TLG029AP01	1	major lithology	pen/pencil	E	4298 - Representative lithology
14TLG030	14TLG030AP01	1	major lithology	pen/pencil	N	4299 - Representative lithology
14TLG031	14TLG031AP01	1	major lithology	pen/pencil	SE	4300 - Representative lithology
14TLG032	14TLG032AP01	1	major lithology	pen/pencil	NE	4301 - Representative lithology

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14TLG033	14TLG033AP01	1	major lithology	pen/pencil	Top	4302 - Representative lithology
14TLG035	14TLG035AP01	1	outcrop	hammer	Top	4305 - Major lithology
14TLG035	14TLG035AP02	2	structure	hammer	Top	4306 - structure
14TLG036	14TLG036AP01	1	major lithology	pen/pencil	Top	4307 - Representative lithology
14TLG038	14TLG038AP01	1	outcrop	hammer	Top	4308 - Representative lithology
14TLG039	14TLG039AP01	1	major lithology	compass	Top	4309 - Representative lithology
14TLG040	14TLG040AP01	1	major lithology	pen/pencil	NW	4311 - Representative lithology
14TLG041	14TLG041AP01	1	outcrop	person	NW	4312 - General outcrop
14TLG041	14TLG041AP02	2	major lithology	pen/pencil	Top	4313 - Major lithology
14TLG042	14TLG042AP01	1	major lithology	pen/pencil	Top	4314- Major lithology
14TLG043	14TLG043AP01	1	major lithology	pen/pencil	E	4315 - Major lithology
14TLG044	14TLG044AP01	1	major lithology	pen/pencil	Top	4316 - Representative lithology
14TLG045	14TLG045AP01	1	structure	pen/pencil	Top	4317; sinistral sigmoidal tension gash
14TLG045	14TLG045AP02	2	structure	pen/pencil	Top	4318; dextral offset along E-W structure and sinistral offset along N-S
14TLG045	14TLG045AP03	3	major lithology	hammer	Top	4319 - Representative lithology
14TLG046	14TLG046AP01	1	see Caption field	person	S	4320; Typical bush block a
14TLG046	14TLG046AP02	2	see Caption field	see Caption field	S	4321; Typical bush block a
14TLG046	14TLG046AP03	3	see Caption field	see Caption field	N	4322; Helicopter landing
14TLG046	14TLG046AP04	4	see Caption field	see Caption field	N	4323; Helicopter landing
14TLG046	14TLG046AP05	5	major lithology	pen/pencil	Top	4324 - Representative lithology: granodiorite
14TLG046	14TLG046BP06	6	minor lithology	pen/pencil	Top	4326 - Representative lithology: amphibolite
14TLG047	14TLG047AP01	1	major lithology	pen/pencil	W	4327 - Major lithology and fabric
14TLG048	14TLG048AP01	1	major lithology	pen/pencil	Top	4328 - Representative lithology
14TLG049	14TLG049AP01	1	outcrop	compass	Top	4329; Block size
14TLG049	14TLG049AP02	2	major lithology	pen/pencil	Top	4330 - Representative lithology
14TLG050	14TLG050BP01	1	outcrop	hammer	see Caption field	4331; Photo looking up at fault scarp and granite blocks within shear zone
14TLG050	14TLG050BP02	2	outcrop	hammer	see Caption field	4332; Granite boudin with in shear zone.
14TLG050	14TLG050BP03	3	structure	pen/pencil	NW	4333; Small-scale fold showning sinistral movement from fold asymmetry
14TLG050	14TLG050BP04	4	minor lithology	pen/pencil	Top	4334 - Major lithology : biotite schist
14TLG050	14TLG050AP05	5	major lithology	pen/pencil	Top	4335 - Representative lithology
14TLG051	14TLG051AP01	1	major lithology	pen/pencil	Top	4339 - Representative lithology
14TLG052	14TLG052AP01	1	major lithology	pen/pencil	N	4341 - Representative lithology
14TLG053	14TLG053AP01	1	major lithology	pen/pencil	Top	4342 - General outcrop
14TLG053	14TLG053AP02	2	outcrop	hammer	Top	4343 - Representative lithology
14TLG054	14TLG054AP01	1	major lithology	pen/pencil	Top	4344 - Major lithology
14SK002	14SK002AP01	1	major lithology	pen/pencil	W	Representative lithology
14SK002	14SK002BP02	2	major lithology	pen/pencil	N	Representative lithology
14SK002	14SK002BP03	3	structure	pen/pencil	N	Photo of epidote-filled fracture with hematitic alteration halo

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14SK003	14SK003AP01	1	major lithology	scale card	E	Representative lithology
14SK004	14SK004AP01	1	major lithology	pen/pencil	E	Representative lithology
14SK004	14SK004AP02	2	structure	pen/pencil	E	Relative timing relationships.
14SK004	14SK004AP03	3	see Caption field	pen/pencil	E	Epidote/hematite alteration.
14SK005	14SK005AP01	1	major lithology	pen/pencil	E	Representative lithology
14SK005	14SK005AP02	2	dyke/vein	pen/pencil	S	30 cm wide qtz vein.
14SK006	14SK006AP01	1	major lithology	scale card	Top	2518, Representative lithology
14SK007	14SK007AP01	1	major lithology	scale card	W	2519 Representative lithology
14SK008	14SK008AP01	1	major lithology	scale card	N	2520, Representative lithology
14SK008	14SK008BP02	2	minor lithology	scale card	N	2521 Aplite dyke adjacent to xenolith
14SK009	14SK009AP01	1	major lithology	scale card	W	2522 Representative lithology
14SK009	14SK009AP02	2	outcrop	person	N	2523, Outcrop
14SK010	14SK010AP01	1	major lithology	scale card	E	2524 General lithology
14SK011	14SK011AP01	1	major lithology	scale card	Top	2525, General lithology
14SK011	14SK011AP02	2	dyke/vein	scale card	S	2526, Low angle qtz vein.
14SK012	14SK012AP01	1	major lithology	scale card	Top	2527, General lithology
14SK012	14SK012AP02	2	outcrop	person	W	2528, Outcrop area.
14SK013	14SK013AP01	1	major lithology	scale card	N	2529, General lithology with joints.
14SK014	14SK014AP01	1	outcrop	person	NW	2530, Vertical outcrop
14SK014	14SK014AP02	2	outcrop	person	NW	2531, Vertical outcrop
14SK014	14SK014AP03	3	outcrop	person	NW	2532, vertical outcrop
14SK014	14SK014AP04	4	major lithology	scale card	N	2533, General lithology
14SK015	14SK015AP01	1	major lithology	scale card	E	2534. General lithology and joints
14SK016	14SK016AP01	1	major lithology	scale card	S	2535. Close-up of mineralogy
14SK017	14SK017AP01	1	dyke/vein	scale card	S	2536. General lithology and qtz vein
14SK018	14SK018AP01	1	major lithology	scale card	W	2537. General lithology
14SK019	14SK019AP01	1	major lithology	scale card	N	2538, General lithology
14SK020	14SK020AP01	1	major lithology	scale card	S	2339, General lithology
14SK020	14SK020BP02	2	dyke/vein	scale card	S	2340. Diabase dyke
14SK020	14SK020AP03	3	structure	scale card	S	2341. Fault offseting epidote vein
14SK021	14SK021AP01	1	major lithology	scale card	Top	2542. Close-up of diabase
14SK021	14SK021BP02	2	minor lithology	scale card	S	2543. Granodiorite intrusion into mafic dyke, proximal to pluton contact
14SK022	14SK022AP01	1	dyke/vein	scale card	Top	2544. Veins in granite
14SK023	14SK023AP01	1	major lithology	scale card	S	2545. General lithology
14SK024	14SK024AP01	1	major lithology	scale card	Top	2546. General lithology
14SK025	14SK025AP01	1	outcrop	person	N	2547. View of exposure along bank
14SK025	14SK025AP02	2	major lithology	scale card	Top	2548. General lithology
14SK026	14SK026AP01	1	major lithology	scale card	Top	2549. General lithology
14SK026	14SK026BP02	2	texture	scale card	Top	2550. coarse-grained xenoliths in granodiorite
14SK027	14SK027AP01	1	major lithology	scale card	N	2551. General lithology

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14SK028	14SK028AP01	1	major lithology	scale card	N	2552. General lithology
14SK029	14SK029AP01	1	major lithology	scale card	Top	2553. General lithology
14SK031	14SK031AP01	1	major lithology	scale card	Top	2554. General lithology
14SK031	14SK031BP02	2	dyke/vein	scale card	W	2555. Aplite dyke and sills
14SK031	14SK031BP03	3	outcrop	person	N	2556. Outcrop area
14SK031	14SK031BP04	4	dyke/vein	scale card	S	2557. Low angle sill
14SK032	14SK032AP01	1	structure	scale card	Top	2558. Dextral shear zone
14SK032	14SK032AP02	2	major lithology	scale card	Top	2559. General lithology
14SK033	14SK033AP01	1	major lithology	scale card	NE	2560. General lithology
14SK034	14SK034AP01	1	structure	scale card	S	2560. General lithology
14SK035	14SK035AP01	1	major lithology	scale card	Top	2562. Contact between medium grained and coarse grained granodiorite
14SK036	14SK036AP01	1	major lithology	scale card	Top	2563. General lithology
14SK037	14SK037AP01	1	major lithology	scale card	Top	2564. Contact between cg hblende-rich granodiorite and later biotite hblende granodiorite
14SK037	14SK037BP02	2	structure	scale card	Top	2565. Xenolith in granodiorite
14SK037	14SK037AP03	3	outcrop	person	N	2566. Outcrop area
14SK037	14SK037AP04	4	structure	scale card	S	2567. Dextral shear zone with qtz vein
14SK038	14SK038AP01	1	major lithology	scale card	E	2568. General lithology
14SK038	14SK038AP02	2	outcrop	person	N	2569. Outcrop from helipad
14SK039	14SK039AP01	1	major lithology	scale card	N	2570. General lithology
14SK039	14SK039AP02	2	outcrop	see Caption field	SE	2571. View across valley to illustrate topography
14SK040	14SK040AP01	1	major lithology	scale card	N	2572. General lithology
14SK041	14SK041AP01	1	major lithology	scale card	Top	2573. General lithology
14SK042	14SK042AP01	1	major lithology	scale card	E	2574. General lithology
14SK043	14SK043AP01	1	outcrop	scale card	S	2575. General lithology and outcrop
14SK044	14SK044AP01	1	outcrop	scale card	E	2576. General lithology and outcrop
14SK045	14SK045AP01	1	major lithology	scale card	N	2577. General lithology
14SK046	14SK046AP01	1	major lithology	scale card	W	2578. General lithology
14SK047	14SK047AP01	1	major lithology	scale card	Top	2579. General lithology
14SK047	14SK047AP02	2	outcrop	scale card	NW	2580. Outcrop
14SK048	14SK048AP01	1	major lithology	scale card	Top	2581. General lithology
14SK048	14SK048AP02	2	outcrop	person	N	2582. Outcrop area
14SK049	14SK049AP01	1	major lithology	scale card	E	2583. General lithology
14SK050	14SK050AP01	1	major lithology	scale card	S	2584. General lithology and low-angle foliation
14SK050	14SK050AP02	2	outcrop	hammer	E	2585. View down scarp
14SK051	14SK051AP01	1	major lithology	scale card	E	2586. General lithology and joints
14SK052	14SK052AP01	1	major lithology	scale card	N	2587. General lithology
14SK052	14SK052AP02	2	outcrop	person	N	2588. Outcrop
14SK053	14SK053AP01	1	structure	scale card	N	2589. General lithology and offset aplite dyke

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14SK054	14SK054AP01	1	major lithology	scale card	Top	2590. Epidote filled joint and general lithology
14SK055	14SK055AP01	1	major lithology	scale card	E	2591. Flowbanding in granodiorite
14SK055	14SK055AP02	2	texture	scale card	E	2592. Mafic xenoliths in granodiorite
14SK056	14SK056AP01	1	texture	scale card	S	2593. Very coarse grained (5-15 mm) actinolite in mafic flow band
14SK056	14SK056AP02	2	major lithology	scale card	W	2594. General lithology
14SK056	14SK056AP03	3	texture	scale card	W	2595. Porpyritic texture
14SK056	14SK056AP04	4	texture	scale card	S	2596. Flowbanding/xenolith
14SK057	14SK057AP01	1	major lithology	scale card	W	2597. Granodiorite with mafic xenolith
14SK058	14SK058AP01	1	major lithology	scale card	Top	2598. General lithology
14SK059	14SK059AP01	1	outcrop	person	S	2600. Outcrop
14SK059	14SK059AP02	2	major lithology	scale card	Top	2601. General lithology
14SK060	14SK060AP01	1	major lithology	scale card	S	2602. General lithology
14SK061	14SK061AP01	1	major lithology	scale card	Top	2603. General lithology
14SK061	14SK061AP02	2	outcrop	person	NE	2604. Outcrop in clear cut
14SK061	14SK061AP03	3	structure	scale card	Top	2605. N-S hematite joint, cutting shear zone
14SK062	14SK062AP01	1	major lithology	scale card	W	2606. General lithology
14SK063	14SK063AP01	1	structure	scale card	S	2606 07. Dextral fault
14SK063	14SK063AP02	2	texture	scale card	N	2608. Streched xenoliths
14SK064	14SK064AP01	1	structure	scale card	E	2609. General lithology and jointing
14SK065	14SK065AP01	1	major lithology	scale card	S	2610. General lithology
14SK066	14SK066AP01	1	major lithology	scale card	S	2612. General lithology
14SK067	14SK067AP01	1	major lithology	scale card	E	2613. General lithology
14SK068	14SK068AP01	1	major lithology	scale card	S	2614. General lithology
14SK068	14SK068AP02	2	outcrop	hammer	S	2615. Outcrop
14SK069	14SK069AP01	1	major lithology	scale card	S	2616. General lithology
14SK070	14SK070AP01	1	major lithology	scale card	Top	2617. General lithology
14SK071	14SK071AP01	1	major lithology	scale card	N	261. General lithology
14SK072	14SK072AP01	1	major lithology	scale card	E	2619. General lithology
14SK073	14SK073AP01	1	major lithology	scale card	Top	2620. General lithology
14SK074	14SK074AP01	1	major lithology	scale card	Top	2621. General lithology
14SK074	14SK074AP02	2	outcrop	person	S	2622. Outcrop
14SK075	14SK075AP01	1	outcrop	person	W	2623. Outcrop
14SK076	14SK076AP01	1	outcrop	person	N	2624. Outcrop
14SK076	14SK076AP02	2	major lithology	scale card	Top	2625. General lithology
14SK077	14SK077AP01	1	major lithology	scale card	Top	2626. General lithology
14SK078	14SK078AP01	1	major lithology	scale card	N	2627. General lithology
14SK078	14SK078AP02	2	outcrop	person	N	2628. Outcrop.
14SK079	14SK079AP01	1	major lithology	scale card	W	2629. General lithology
14SK080	14SK080AP01	1	outcrop	person	E	2630. Outcrop
14SK081	14SK081AP01	1	major lithology	scale card	NW	2631. General lithology

Table A.6 - Summary of Field Photos Taken During Field Observations

STATIONID	PHOTOID	PHOTONO	CATEGORY	SCALE	DIRECTION	CAPTION
14SK082	14SK082AP01	1	major lithology	scale card	E	2632. General lithology
14SK083	14SK083AP01	1	major lithology	pen/pencil	N	2633. General lithology
14SK084	14SK084AP01	1	major lithology	scale card	E	2634. General lithology
14SK085	14SK085AP02	2	major lithology	scale card	S	2636. General lithology
14SK085	14SK085AP01	1	outcrop	hammer	S	2635. Outcrop
14SK086	14SK086AP01	1	dyke/vein	scale card	see Caption field	2637. Fresh fractured surface
14SK086	14SK086AP02	2	outcrop	hammer	NW	2638. Outcrop area
14SK087	14SK087AP01	1	major lithology	scale card	NW	2639. General lithology
14SK088	14SK088AP01	1	dyke/vein	scale card	SE	2640. General lithology and narrow pegmatite dyke
14SK088	14SK088AP02	2	major lithology	scale card	see Caption field	2641. General lithology in hand specimen
14SK089	14SK089AP01	1	major lithology	scale card	see Caption field	2642. General lithology in hand specimen
14SK089	14SK089AP02	2	outcrop	hammer	W	2643. Outcrop
14SK090	14SK090AP01	1	dyke/vein	scale card	Top	2644. Quartz vein
14SK090	14SK090AP02	2	major lithology	scale card	Top	2645. General lithology
14SK091	14SK091AP01	1	major lithology	scale card	Top	2646. Quartz vein
14SK091	14SK091AP02	2	major lithology	scale card	W	2647. General lithology

Table A.7 - Summary of Samples Collected

STATION ID	LITHO ID	SAMPLE ID	SAMPLE NO	SAMPLETYPE	ANALYSIS	REASON
14TLG013	14TLG013A	14TLG013AG02	2	representative	representative	Hornblende biotite granodiorite
14TLG033	14TLG033A	14TLG033AG02	2	representative	representative	Quartz syenite
14TLG043	14TLG043A	14TLG043AG01	1	representative	representative	Biotite hornblende granodiorite
14TLG050	14TLG050A	14TLG050AG01	1	representative	representative	Granite
14TLG050	14TLG050B	14TLG050BG02	2	representative	representative	Biotite schist
14SK015	14SK015A	14SK015AG02	2	representative	representative;see Reason field	General lithology sample. Slightly more weathered/alterated than typically granodiorite, but hard to get fresh rock
14SK031	14SK031A	14SK031AG01	1	representative	representative;see Reason field	Representative lithology
14SK038	14SK038A	14SK038AG01	1	representative	representative;see Reason field	Representative lithology
14SK088	14SK088A	14SK088AG02	2	representative	representative;see Reason field	Patchy epidote and minor chlorite alteration in hornblende biotite granodiorite