



13002979

FORM 6K

**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

Report of Foreign Private Issuer Pursuant to Rule 13a – 16 or 15 d – 16  
under the Securities Exchange Act of 1934

**For the month of May 2013**

000-29880 (Commission File Number)

Virginia Mines Inc. 200-300 St-Paul  
Quebec City, QC, Canada G1K 7R1  
(Address of principal executive offices)

Virginia Mines Inc.  
(Registrant)

Date: May 28, 2013

By:  
**Name: Noella Lessard**  
**Title: Executive Secretary**

Exhibit 1

**Technical Report and Recommendations – Reconnaissance Program Trieste Project,  
Québec**

Prepared by: Isabelle Roy, B.Sc., P.Geo., Senior Supervising Geologist; and Rose Anne  
Bouchard, Trainee Geological Engineer – Virginia Mines Inc.

8 paper copies

SEC  
Mail Processing  
Section

JUN 04 2013

Washington DC  
405

**000-29880**  
**Commission File Number**

*Original*

**SEC**  
**Mail Processing**

JUN 04 2013

**Technical Report 43-101A1**  
**Technical Report and Recommendations** Washington DC  
**Reconnaissance Program** 405  
**Trieste Project**

**VIRGINIA MINES INC.**  
**January 2013**

Prepared by:

Isabelle Roy, B.Sc., P.Geol.  
Senior Supervising Geologist  
Virginia Mines Inc.

Rose-Anne Bouchard  
Trainee Geological Engineer  
Virginia Mines Inc.

**LIST OF TABLES**

- TABLE 1. SUMMARY OF PREVIOUS WORK PERFORMED IN 33H01 AND 08  
TABLE 2. SIGNIFICANT GRAB AND BOULDER SAMPLES  
TABLE 3. TARGETS OF TRENCHING PROGRAM, SUMMER 2012, TRIESTE PROJECT.  
TABLE 4. SIGNIFICANT RESULTS, CHANNEL SAMPLING

**LIST OF FIGURES AND MAPS**

- FIGURE 1: TRIESTE PROJECT LOCATION, SCALE 1:7 500 000  
FIGURE 2: TRIESTE PROJECT LOCATION, SCALE 1:500 000  
FIGURE 3: CLAIMS NUMBER, TRIESTE PROPERTY, SCALE 1:35 000  
FIGURE . GEOLOGICAL MAP OF THE TRIESTE PROPERTY  
FIGURE 5: LOCATION OF BOULDER AND OUTCROP,  
FIGURE 6: LOCATION OF ROCK SAMPLES, TRIESTE PROJECT,  
FIGURE 7. LOCATION OF TRENCHES, NORTH-WEST GRID  
FIGURE 8. LOCATION OF TRENCHES, SOUTH GRID  
FIGURE 9. TRENCH TR2012-TR-001  
FIGURE 10. TRENCH TR2012-TR-002  
FIGURE 11. TRENCH TR2012-TR-003  
FIGURE 12. TRENCH TR2012-TR-004  
FIGURE 13. TRENCH TR2012-TR-005 AND TR2012TR-006  
FIGURE 14. TRENCH TR2012-TR-007  
FIGURE 15. TRENCHES TR2012-TR-008 AND TR2012-TR-009  
FIGURE 16. TRENCHES TR2012-TR-010 AND TR2012-TR-011  
FIGURE 17. TRENCH TR2012-TR-012  
FIGURE 18. TRENCH TR2012-TR-013  
FIGURE 19. TRENCH TR2012-TR-014  
FIGURE 20. TRENCH TR2012-TR-015  
FIGURE 21. TRENCH TR2012-TR-016  
FIGURE 22. TRENCH TR2012-TR-017  
FIGURE 23. TRENCH TR2012-TR-018  
FIGURE 24. TRENCH TR2012-TR-019  
FIGURE 25. TRENCH R2012-TR-020  
FIGURE 26. TRENCH TR2012-TR-021  
FIGURE 27. TRENCH TR2012-TR-022  
FIGURE 28. TRENCH TR2012-TR-023  
FIGURE 29. TRENCH TR2012-TR-024  
FIGURE 30. TRENCH TR2012-TR-025  
FIGURE 31: 2012 SHOWINGS COMPILATION AND MAGNETIC SURVEY, TRIESTE PROJECT,  
SCALE 1:50 000  
FIGURE 32: FORMER AND NEW SHOWINGS COMPILATION, SCALE 1:35 000

**LIST OF APPENDICES**

- APPENDIX 1. CLAIMS LIST, TRIESTE PROJECT

APPENDIX 2. LIST OF ABBREVIATIONS

APPENDIX 3. DESCRIPTION OF OUTCROPS AND BOULDERS, TRIESTE PROJECT

APPENDIX 4. ROCK SAMPLES LIST, TRIESTE PROJECT

APPENDIX 5. DESCRIPTION OF CHANNEL SAMPLING

APPENDIX 6. QUALITY CONTROLS, ASSAYS

APPENDIX 7. ASSAYS CERTIFICATES.

**ITEM 1 : SUMMARY**

Since the first exploration campaign by Virginia in 1998, limited reconnaissance work has been periodically done in the Trieste area. This sporadic grass root prospecting returned values of 20 g/t gold from a boulder (Linda bloc) and up to 2.60% Zn in grab samples. Since summer 2009 Virginia undertook more intensive exploration program including prospecting and mapping of the 2008 grids, heliborne HD magnetic survey, till survey, line cutting on a new grid (South grid), followed by mapping and prospecting.

During winter 2012, additional line cutting was performed on the South grid and an IP survey (pole-dipole) of 128.5 km was done. These works were designed to verify the potential around the circular high magnetic structure located in south part of the property. During summer 2012, Virginia Mines undertook a field program including mapping, prospecting and trenching.

Unfortunately, no new significant showings were discovered. Trenching program was unable to find the sources of numerous IP axis due to the thick glacial deposits. Most of them have to be tested by drilling.

**ITEM 2 : INTRODUCTION AND TERMS OF REFERENCE**

This report provides the status of current technical geological information relevant to the latest Virginia Mines exploration program on the Trieste project in Québec.

Co-author Isabelle Roy, B.Sc. in Geology and Virginia's Senior Project Geologist, reviews all project and supervises all fieldwork conducted by Virginia Mines on the Trieste property.

Opinions expressed by author for this report are mainly based on their personal field observations. Their comments also rely on previous reports written on the project or any other documents from public domain sources as listed in the reference section.

**ITEM 3 : RELIANCE ON OTHER EXPERTS**

This section is not applicable to this report.

**ITEM 4 : PROPERTY DESCRIPTION AND LOCATION**

At the time of the field work, the Trieste property was composed of one block of claims composed of 591 cells and covering approximately 305km<sup>2</sup> in the James Bay area. The property is located 115 km SE of the LG-4 airport (James Bay) owned by Hydro-Quebec (Fig. 2). See Appendix 2 for the list of claims.

Geographical references and NTS sheets covered by the Trieste property area :

Latitude: 53°14' 29''North

Longitude: 72°9' 42'' West  
SNRC: 33H/01 and 08  
UTM zone: 18 (NAD 83)  
NTS: 689 700 mE  
5 902 900 mN

**ITEM 5: ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRA-STRUCTURE AND PHYSIOGRAPHY.**

The Trieste project is located in the central part of the province of Quebec between the Caniapiscou reservoir to the northeast, the LG4 Hydro-Quebec installation to the west and the Mont Otish area to the south (Fig.1). Field operations were conducted from the Noella camp which is owned by Virginia Mines Inc. and located 50 km NNE from the property. The Noella camp is located 57 km SE of the Mirage airport. The camp and the property are only accessible by float- or ski-equipped aircraft and by helicopter. Personnel and supplies were brought by road to Mirage Outfitter floatplane base, 57 km NW of the camp and therefore, by plane to the camp. Mirage is accessible by the all-season Trans-Taïga gravel road.

An Astar BA (Heli-Inter) was used for crew and material transportation. All equipment, including fuel and supplies, were moved to Mirage Outfitter floatplane base by truck and from there by airplane (Air Roberval) to the camp site.

The landscape of the area is relatively flat with regions covered by low altitude rounded hills. Vegetation is typical of taiga including areas covered by forest with others, typically at the top of hills, devoid of trees. Large swamps occupy most of the valley area and the hydrographic network is well developed. At the 1: 250 000 scale, the La Grande and Sakami rivers are the major watercourses and substantial areas are occupied by large lakes.

**ITEM 6: HISTORY**

**6.1 Property ownership**

The Trieste project is wholly owned and operated by Virginia Mines Inc.

**6.2 Previous works**

Table 1 summarizes the exploration work performed in sheets 33H/ 01 and 08 to date.

**Table 1. Summary of previous work performed in 33H/01 and 08**

<p><u>Geological Survey of Canada (1966)</u></p> <p>- Reconnaissance mapping at a scale of 1: 1 000 000 (Eade, 1966).</p>
---

SDBJ (1978)

- Lake sediment geochemical survey of the Nitchequon Lakes area (SDBJ, 1978).

Ministry of Natural Resources of Québec (1985)

- Reconnaissance mapping and geochemical compilation of the Campan and Cadieux lakes area. (Hocq, 1985).

Ministry of Natural Resources of Québec (1996)

- Lake sediment geochemical survey of the Nitchequon Lake area (Choinière and Leduc, 1996).

Ministry of Natural Resources of Québec (1996)

- Reconnaissance mapping at a scale of 1: 250 000, SNRC 33H 1/8, 23E west. (Gauthier, 1996).

Virginia Gold Mines Inc. - Cambior JV (1998-2001)

- Numerous field programs including prospecting, mapping, geophysical surveys and drilling over Mineral exploration permits (MEP) 1422, 1451 and 1421 (Noella) and surrounding area.

Virginia Gold Mines Inc. (2002-2007)

- Numerous field programs including prospecting, mapping, geophysical surveys and drilling on MEP 1422, 1451 and 1421 (Noella) and surrounding area.

Virginia Mines (2008-2011)

Numerous fields program on the Trieste property including prospecting, mapping, tills survey, IP survey (40km), EMH survey (40km), Heliborne HD magnetic survey (3320 linear km).

**ITEM 7 : GEOLOGICAL SETTING AND MINERALIZATION**

**7.1 Regional geology**

The following description of the regional geology is mainly taken from Gauthier (1996) and Hocq (1985). The study area lies in the Superior Province at the junction of four lithotectonic domains, namely the Archean subprovinces of La Grande, Ashuanipi, Opinaca and Opatica. The

area is dominated by tonalites and granites hosting several Archean greenstone belts of kilometeric to deca-kilometric scale.

The Trieste prospect lies in the Trieste greenstone belt (TGB) (Hocq, 1985) in the eastern extremity of the La Grande subprovince, composed essentially of amphibolites of basaltic origin that belong to the Rossignol-Laguiche group (Gauthier, 1996). The metabasalts can be followed over 50 kilometers along a NE-SW trend with an average thickness of 4 kilometers. The volcanic sequence is hosted in a large quartzo-feldspathic gneiss unit of sedimentary origin. Multiple syn- and post-tectonic intrusions control the geometry of the volcano-sedimentary assemblage.

A simplified description of the most abundant lithostratigraphic assemblages mapped during our exploration work is included below.

## **7.2 Local geology**

The following descriptions of the main lithologies are based on macroscopic observations in the field, especially on the NW grid area where the outcrop exposure is abundant.

### **7.2.1 Amphibolite**

The amphibolite is a black to dark-green colored rock essentially composed of hornblende and plagioclase with various proportions of quartz, actinolite, garnet, biotite, phlogopite, sericite, calcite and epidote. Metamorphism has created a range of aphanitic to medium-grained and granoblastic textures. Primary textures have been obliterated by the amphibolite- to granulite-metamorphic facies and by the strongly-developed regional schistosity. Occurrences of decimetre-scale pillows with elongated centimetric aphanitic borders are concentrated in the NW Grid Area. The amphibolites have been interpreted as basalt flows intercalated with layers of komatiite, felsic volcanic domes and sedimentary units ranging from conglomerate to iron formation (Gauthier, 1996). Narrow base metals mineralization is locally observed between the pillows on the NW grid.

### **7.2.2 Quartzo-feldspathic gneiss**

The gneiss is a medium- to dark-grey colored rock mainly composed of plagioclase, quartz and biotite in various proportions. Accessory minerals include Kspar, muscovite, garnet, hornblende and magnetite. Because of the high metamorphic grade, the quartzo-feldspathic gneisses are generally coarse-grained and granoblastic. Locally, mafic segregations creating biotite schlieren and layered textures are observed.

The gneiss has a biotite content generally over 30% of the total rock volume and was described as a wacke sedimentary unit. Granitic leucosomes with centimetric to decimetric thickness are omnipresent. Throughout the prospected area, the wacke is related to a paragneiss of sedimentary origin composed of 60-70% wacke and with 30-40% pegmatitic injections due to partial melting.



Several outcrops of metasedimentary (paragneiss) rock interpreted as wacke were observed in the northern part of the NE grid and the southern portion of the NW grid. They are composed of plagioclase (30-40%) and quartz (20%) and biotite (20-30%) and characterized by granoblastic texture and the presence of muscovite porphyroblasts (5-20%) (1-2cm).

### ***7.2.3 Felsic to intermediate volcanoclastite***

Few outcrops of felsic to intermediate gneiss were mapped in the metabasalt region. They are described as light brownish to light-grey colored rocks mainly composed of quartz and plagioclase. Muscovite is a dominant accessory mineral but biotite and sericite occur as well. The rocks are usually fine-grained with local lapilli texture, but generally the felsic unit is strongly affected by the regional deformation and exhibits a well-developed schistosity.

Because of the scarcity of outcrops, the extensions are difficult to follow for more than 200 meters laterally and 100 meter across lithostratigraphy. As mentioned above, they are interpreted as felsic to intermediate volcanoclastites that form part of a bi-modal volcanic sequence (Gauthier, 1996). This lithology was not observed on the NW grid.

### ***7.2.4 Silicate-Rich and Oxide-rich Iron formation***

Iron formations are medium- to dark-green colored banded rocks composed of centimeter-scale quartz-rich bands interlayered with silicate-rich bands or magnetite-rich bands. They both constitute strong magnetic anomalies on the NW grid. Their presence was not noticed on the NE grid due to lack of outcrop exposure.

Silicate-rich iron formations occur in areas of low relief and thus rarely exhibit good surfaces for observation. Due to their conductive nature, they were often found by geophysics and then cleared by shovel. Silicate-rich iron formations may also have been misinterpreted and confused with strongly-altered metabasalt.

The silicate bands are composed of hornblende, garnet, actinolite, grunerite and biotite. The volume of sulphide ranges from trace to 20% of the rock and usually consists of a large proportion of pyrrhotite and pyrite. Arsenopyrite, chalcopyrite and sphalerite are also observed in samples. The chert bands are aphanitic to fine-grained and granoblastic, whereas the silicate bands are characterized by medium- to coarse-grained, porphyroblastic texture. Garnet porphyroblasts up to 1.5 centimeters in diameter are also present.

The magnetite-rich iron formations are composed of magnetite that range from 15% to 40% interlayered with chert bands (40-60%). Chert bands are also aphanitic to fine-grained. They also contain grunerite and amphibolite (5-10%) and locally garnet. They are often mineralized in pyrrhotite (2-5%) and arsenopyrite (tr-5%).

Both types of iron formations were observed within the NW grid limits and their average thickness varies from one meter to 15 meters. A silicate-rich iron formation was encountered 5km east of the Linda bloc and contains 50% of dark amphibole or pyroxene, 30% of quartz, 10% of green amphiboles, 5% garnets , 5% of chlorite and was injected by quartz veins.

#### **7.2.5 Exhalite**

Several exhalative horizons were outlined in contact with or nearby iron formation occurrences. In fact, most of the exhalite horizons were discovered while prospecting for those iron formations. They are composed of quartz (40-60%) interbedded with sulphides (20-40%) such as pyrrhotite and pyrite and more locally chalcopyrite, molybdenite and sphalerite. Some occurrences present breccia textures. Alteration minerals such as chlorite, muscovite and fuchsite were also noticed within this unit. The Chirki and the SNPL showings are both hosted in a brecciated exhalite horizon in the NW grid.

#### **7.2.6 Chert**

Chert horizons were also observed in the NW grid. They are often spatially associated with iron formation and exhalite. Chert horizons are composed of fine grained quartz (60-90%), biotite (5-10%) and are often mineralized in graphite (2-25%), pyrrhotite (2-15%), pyrite (2-5%) and arsenopyrite (tr-2%). Chlorite (tr-10%) and muscovite (tr-15%) were also noticed as alteration minerals in the chert horizons.

#### **7.2.7 Ultramafic Rock**

Ultramafic rocks were encountered on the NW grid. They occur in contact with amphibolite (basalts) and are strongly magnetic. Ultramafic rocks are dark green colored, medium grained and present a massive texture. They are composed of tremolite (20-50%), hornblend (20-30%), actinolite (10-30%), clinopyroxene (10-30%), chlorite (5-10%), serpentinite (5-15%) and magnetite (2-5%).

#### **7.2.8 Pegmatite**

Pegmatite dyke occurrences were more abundant in the metasedimentary package on the property. Moreover, on the Southern part of the NW grid, several outcrops of pegmatite rich in muscovite (5-20%) were outlined near the contact between the volcanic rocks to the north and the metasedimentary rocks to the south. The other minerals contained in those pegmatites are quartz (25-35%) and plagioclase (50-60%), representing a tonalitic composition. The abundance in muscovite along the contact between volcanics and the metasedimentary unit should be kept in mind as a favourable conduct for fluids rich in water.

### **7.2.9 Metasediment**

Metasediments rocks were often encountered on the south grid. They frequently occur with pegmatite dyke. This unit is composed of quartz (30-50%), plagioclase (30-50%), biotite (20-35%), garnets (1-15%), chlorite (trace-1%) and opaque mineral (trace-1%). Metasediments are generally medium grained, foliated and heterogeneous. The 2011 campaign reveals a metasedimentary unit, in the south grid, containing stockwerk of centimeters- to decimeters-scaled quartz veins. Wall rock of these veins are often silicified and/or altered by a chlorite-hornblende-garnet package. This unit does not contain homogeneous mineralization. Generally, mineralization occurs locally in these wall rock and may be conductor. This mineralization is composed of 1% to 5% pyrrhotite, 1% to 2% pyrite and trace to 1% chalcopyrite.

## **7.3 Significant mineralization**

This section present main showings discovered on the property since 1998.

### 7.3.1 NW grid:

The Chirki showing was discovered using beep-mat and corresponds to a max-min conductor. It is constituted by a mineralized breccia of semi-massive sulphides composed of 20-40% pyrrhotite and 5-10% arsenopyrite. The host rock is injected by quartz veins. The protolith is hard to determine due to metasomatism that affected the rock. Silicification, epidotization and chloritization are among the alterations observed in that rock. This mineralized zone is 8.5m thick and occurs between a amphibolitic schist interlayered with iron formation to the north and an oxide-rich iron formation to the south. It returned values of **1.02 g/t Au over 0.50 meters** from channel sample

The SNPL showing was also discovered using beep-mat and corresponds to a max-min conductor. It is constituted of semi-massive sulphides containing 20-40% pyrrhotite, 5-10% pyrite, 3-20% sphalerite, 1-2% chalcopyrite, trace to 1% galena and local trace of arsenopyrite. Sphalerite occurs in beds. The mineralization is strongly silicified and brecciated and contains alteration minerals such as chlorite, sericite and fuchsite (?). Values of **2.63% Zn and 12.7 g/t Ag** were obtained from grab sample while channel sample delivered values of **2.65% Zn; 0.16% Pb; 0.08% Cu; 19.3 g/t Ag and 0.10 g/t Au over 3.00 meters** (TRI-2009-R-003). The metal content of this mineralization suggest a VMS affinity (Ag,Cd,Cu,Pb,Zn). Notice that the channel performed 50m toward west did not return any significant values. To the north of the mineralized zone, an oxide iron formation is present and returned values of 0.53 g/t Au from a grab sample (135251).

### 7.3.2 Mineralized boulders:

The property host numerous mineralized boulders.

North of south grid:

Just at the north end of the South Grid, the northern boulder cluster contains several gold bearing boulders of iron formation. Grades vary from 1.1 to 16.9 g/t Au. The 2009 till survey highlighted a gold grains anomaly aligned with the glacial trend and the gold-bearing boulders.

The southern boulder cluster contains more than ten boulders spread over 6km and on a trend oriented N060. It includes the intriguing Linda Block. The composition of this boulder is clinopyroxene-quartz with 3% arsenopyrite and 1% pyrrhotite. The source is possibly an intense calco-silicate alteration zone. Best assay is 20.6 g/t Au (Grenier et al., 2008). The composition of other boulders is generally interpreted as silicate rich iron formation mineralized in sulphides. Grades vary from 0,6 g/t to 6.8 g/t Au.

#### **ITEM 8 : DEPOSIT TYPE**

This section is not applicable to this report.

#### **ITEM 9 : EXPLORATION WORK**

##### **9.1 Prospecting and mapping work**

Prospecting and geological mapping was carried out from July 26<sup>th</sup> to August 28<sup>th</sup> 2012. All geological data was collected by geologist Isabelle Roy, by Trainee Geological Engineer Jean-François Boivin and Rose-Anne Bouchard, by trainee geologist Julien Avard, by assistant geologist Roby Aumond, Gabriel Côté, Antoine Fecteau, Marie-Christine Gosselin, Jeanne Lavoie-Deraspe, Mathieu Leblanc-Bolduc and by technicians David de Champlain and Catherine Tétreault from Virginia Mines Inc. The crew was assisted on the field by Mrs. Jimmy Blacksmith and Shawn Rabbitskin from Mistissini community.

A total of 155 outcrops, 52 boulders were described and 104 rocks samples were collected from the Trieste property. Results are presented in appendix 3 and 4.

Excluding boulder TR2012-CSH-039, the two best gold values are on trenches. Sample 271563 from an altered and mineralized basalt returned 0.714 g/t Au, the same that returned 3.19 g/t Au in 2009.

The second value (sample 271565) is an exhalite unit (chert) with 10% arsenopyrite, 5% pyrite and 2% chalcopyrite from trench TR2012TR-005. Unfortunately, channel sampling returned no significant value.

Outcrop TR2012JLD 018 returned two gold bearing samples (0.36 and 0.317 g/t Au). Channel sampling on this outcrop returned 0.33 g/t Au over 5,5m (Trench TR2012TR-025). Silicified and chloritized wacke present 1% arsenopyrite in coarse bleb and 3% of disseminated pyrite.

Boulder TR2012-CSH-039 returned the best gold value of summer 2012 (2.62 g/t Au, sample 271607). In 2011, a cluster of three boulders of iron formations had returned gold value from 1.47 to 6.24 g/t Au. Numerous IP axis are present in the area and were targeted for trenching. Because of thick glacial deposits, sources of boulders and IP axis remain unknown .

Table 2. Significant grab samples, summer 2012, Trieste project.

No sample	No outcrop /boulder	Type	HostRock	Mineralization	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm
271563	TR2012TR-001	Outcrop	M15	PY(1) AS(1)	<b>0.714</b>	<0.2	3060	263	32
271565	TR2012TR-005	Outcrop	S10	AS(10) PY(5) CP(2)	<b>0.506</b>	<0.2	10000	141	13
270907	TR2012JLD-018	Outcrop	M15 M15	PY(3) AS(1)	<b>0.36</b>	0.3	287	171	9
270908	TR2012JLD-018	Outcrop	M15 M15	PY(3) AS(1)	<b>0.317</b>	0.3	831	65	7
270959	TR2012RB-008	Outcrop	V2J M15	MG(1) PY(3) PO(2)	<b>0.259</b>	0.6	76	275	56
271601	TR2012TR-002	Outcrop	M15		<b>0.229</b>	<0.2	2900	211	77
271566	TR2012TR-005	Outcrop	S10	AS(10) PY(5) CP(2)	<b>0.163</b>	<0.2	7120	12	27
271607	TR2012CSH-029	Boulder	S9A	AS(10) PO(2)	<b>2.62</b>	0.5	3840	123	11
270524	TR2012RA-064	Boulder	S10	PO(5) AS(3) SP(1) CP(1)	<b>0.21</b>	1.7	5	<b>1050</b>	202
270956	TR2012RB-005	Boulder	V2J	PY(30) PO(5)	0.088	<b>4.8</b>	55	421	165
270955	TR2012RB-004	Boulder	V2J	PY(30) PO(5)	0.025	<b>2.3</b>	44	173	96
270808	TR2012JA-014	Boulder	V3B		0.023	1.9	12	<b>1365</b>	8
270980	TR2012RB-054	Boulder	V2J	PY(3)	<0.005	0.5	2	198	<b>1835</b>

## 9.2 Trenching program

Trenching program was performed in 2012. On the North West grid, we mobilized a small Spider 1600 (FMC group) excavator by helicopter. Six trenches were done on the 2009 showings. Table 3 presents the list of targets of the 2012 trenching program.

A Kubota KX121 excavator was mobilized on the property to perform an extensive trenching program all over the South grid. An helicopter Astar B3 from Peak Aviation and a Astar B2 from Heli-Inter were used.

More than fifty-four (54) targets were tested with the excavator (see table 3) but only twenty trenches were opened. Quaternary deposits are present all over the South grid but are very thick on the south part (where grid lines are oriented NS).

Most of the IP axis remain unknown and request to be verify by drilling.

A summary of each trench objectives, geological description and economical result is following below. The reader could refer to table 4 for a summary of the best channel results, to figure 7 to 30 for the detailed mapping of each trench and sample location. The appendix 5 summarises the channel description and values.

Table 3. Targets of trenching program, summer 2012, Trieste project.

Proposal	Trench	X utm18 nad 83	X utm18 nad 83	Target	Comments
PRO-TR-2012-01	n/o	689644	5898079	PP23	Low MAG anomaly
PRO-TR-2012-02	n/o	689634	5898136	PP22	Lateral extension of low MAG with IP axis PP-23. Could be associated to grab sample (1.37 g/t Au).
PRO-TR-2012-04	n/o				Low mag
PRO-TR-2012-04B	n/o	690024	5898505	PP21	PP21
PRO-TR-2012-05	n/o	690027	5898383	PP20	High IP anomaly, Forte PP, near a low mag
PRO-TR-2012-06	n/o	690220	5898438	PP19	Extended IP axis ( PP19 and PP20)
PRO-TR-2012-07	TR2012TR-007	689214	5898749	PP17	
PRO-TR-2012-08	TR2012TR-008, TR2012TR-009	688367	5898499	PP19	
PRO-TR-2012-09		688009	5898823	PP17	
PRO-TR-2012-10	TR2012TR-010, TR2012TR-011	688010	5898802	PP35	
PRO-TR-2012-11	n/o	690068	5899505	PP10	Low resistivity, high chargeability, on the side of small low magnetic anomaly. Under swomp and water.
PRO-TR-2012-12	n/o	688287	5898732	PP36	
PRO-TR-2012-13	n/o	688261	5898932	PP33	extension of PP16, high chargeability.
PRO-TR-2012-14	n/o			PP18	no access, IP anomaly under water
PRO-TR-2012-15	n/o	690601	5899591	PP10	Low resistivity and high chargeability associated to a iron formation (S9?) in a high mag anomaly
PRO-TR-2012-16	n/o	691398	5899644	PP10	iron formation ? (S9?)
PRO-TR-2012-17	n/o	690589	5900167	PP4	high magnetic anomaly
PRO-TR-2012-18	n/o	689603	5899461	PP8	low resistivity, iron formation?
PRO-TR-2012-19	n/o	689244	5899942	PP2	margins of circular anomaly, low resistivity, high chargeability, under water
PRO-TR-2012-20	n/o	688983	5899850	PP1	Margin of circular anomaly magnetic, IP anomaly high chargeability/low resistivity
PRO-TR-2012-21	n/o	688200	5900008	PP2	margin of circular magnetic anomaly (high)
PRO-TR-2012-22	n/o	687795	5900092	PP25	margin of circular magnetic anomaly (high)
PRO-TR-2012-23	n/o	686419	5898921	PP45	

Proposal	Trench	X utm18 nad 83	X utm18 nad 83	Target	Comments
PRO-TR-2012-24	n/o	687600	5899051	PP37	IP in a low mag, extension of axis PP33?
PRO-TR-2012-25	n/o	686835	5898925	PP17	large IP anomaly at margin of a low magnetic
PRO-TR-2012-26	n/o	686235	5898877	PP39	large IP anomaly at margin of a low magnetic
PRO-TR-2012-27	n/o	686384	5900104	PP27	IP in a low mag
PRO-TR-2012-28	n/o	686238	5900175	PP52	in margin of a break in magnetic survey, near a low mag
PRO-TR-2012-29	n/o	685880	5900370	PP54	IP in a very disturbed area in the magnetic survey
PRO-TR-2012-30	TR2012TR-018	686769	5900623	PP47	Outcrop TR2011SH-020 M3 Si++ BO++, forte IP anomaly
PRO-TR-2012-31	TR2012TR-019	685346	5900897		Grab sample 2011 at 0.889 g/t (sample 251005) in a silicified M4/S3
PRO-TR-2012-32	TR2012TR-020	685415	5900867		Follow up on a grab sample at 0.641 g/tAu (sample 251023)
PRO-TR-2012-33	n/o	686099	5901564	PP48	On the margin of circular magnetic anomaly. Very high resistivity and very high chargeability.
PRO-TR-2012-34	n/o	685235	5901107	PP55	Isolate IP anomaly in the margin of a low mag
PRO-TR-2012-35	TR2012TR-021	686226	5902358	PP49	margin of circular magnetic anomaly (high)
PRO-TR-2012-36	TR2012TR-022	686125	5901953	PP49	margin of circular magnetic anomaly (high)
PRO-TR-2012-37	n/o	685790	5902525	PP50	
PRO-TR-2012-38	n/o	685150	5901694	PP56	Large IP in the margin of magnetic perturbation.
PRO-TR-2012-39A	TR2012TR-001	685542	5908078		Target showing of 2009: 3.17 g/t Au (sample 135184)
PRO-TR-2012-39B	TR2012TR-003	685416	5908081		Target showing of 2009: 3.17 g/t Au (sample 135184)
PRO-TR-2012-39C	TR2012TR-002	685557	5908124		Target showing of 2009: 3.17 g/t Au (sample 135184)
PRO-TR-2012-39D	TR2012TR-004	685101	5908192		Target showing of 2009: 3.17 g/t Au (sample 135184)
PRO-TR-2012-39E	TR2012TR-005	683380	5907728		Base metal showing: SNPL showing at 2.65% Zn; 0.16% Pb; 0.08% Cu; 19.3 g/t Ag and 0.10 g/t Au over 3.00 meters
PRO-TR-2012-39F	TR2012TR-006	683355	5907728		Base metal showing: SNPL showing at 2.65% Zn; 0.16% Pb; 0.08% Cu; 19.3 g/t Ag and 0.10 g/t Au over 3.00 meters
PRO-TR-2012-40	TR2012TR-017	685906	5899853		Return on sample 251054 at 0.216 g/t Au
PRO-TR-2012-41	TR2012TR-014	684727	5897399		
PRO-TR-2012-42	TR2012TR-013	684798	5897383		Follow-up on TR2009JL-010, sample 193999 at 0.169 g/t Au

Proposal	Trench	X utm18 nad 83	X utm18 nad 83	Target	Comments
PRO-TR-2012-43	TR2012TR-0112	684815	5897378		Follow-up on TR2009JL-012, samplen 135352 at 0.154 g/t Au
PRO-TR-2012-44	n/o	686592	5900807	PP47	
PRO-TR-2012-45	TR2012TR-023	686118	5902180		Follow-up on TR2011JFB-012, sample 251302, conductive outcrop, alteration zone (M15)
PRO-TR-2012-46	TR2012TR-024	685931	5902363		Follow-up on TR2011DDC-002, sample 251352 à 0.113 g/t Au
PRO-TR-2012-47	TR2012TR-015	684880	5897718		Conductive to BEEP map and rusty outcrop.
PRO-TR-2012-48	TR2012TR-016	684970	5897697		Following on a old outcrop of exhalite (JF-LIN02-02)
PRO-TR-2012-49	n/o	686430	5900992	PP47	
PRO-TR-2012-50	n/o	686129	5901365	PP48	proximity to a conglomerate outcrop
PRO-TR-2012-51	n/o	686181	5902149	PP49	
PRO-TR-2012-52	n/o	685590	5901722		proximity of an iron formation outcrop
PRO-TR-2012-53	n/o	689477	5898881	PP15	
PRO-TR-2012-54	n/o	690981	5898492		

Table 4. Significant values, channel sampling, Summer 2012, Trieste project.

Trench	Values
TR2012TR-001	1.6 g/t Au over 1.0m
TR2012TR-017	0.44 g/t Au over 1.0m
TR2012TR-019	0.46 g/t Au over 1.0m
TR2012TR-025	0.33 g/t Au over 5.5m

### 9.2.1 Summary of trenches

#### TR2012TR-001 (Figure 9)

The target for the trench TR2012TR-001 was an outcrop of basalt where a grab sample returned a value of 3.17 g/t AU (Savard, 2010). The trench is located on NW grid where volcanic mafic rocks are abundant. Multiple EMH conductors are present on the grid. The source of many of them is iron formation

The trench is at the extreme north of the grid. Banded andesite is observed at the south part of the trench and the north is dominated by basalt. At the center, an alteration zone is exposed over 18 meters. It consists in basalt injected by multiple quartz-garnet-carbonate-chlorite veins that cause a breccia texture. Origin of that breccia is unknown (magmatic, phreatic etc) but the presence of tourmaline is a sign of hydrothermal activity. Two zones of 4 to 5 meters-long contain sulphides



as pyrite, pyrrhotite (traces to 2%) and arsenopyrite (traces to 2%). The 2009 grab sample is coming from one of these zones.

Channel sampling returned 1.55 g/t on 1 meter and another anomalous zone at 0.26 g/t Au over 3.7m. Grab sample had given 0.71 g/t Au (ref: 271561).

TR2012TR-002 (Figure 10)

Trench TR2012TR-002 is located 35 m at NW of the trench TR2012TR001. The objective was to verify the lateral extension of the mineralized zone. Unfortunately, trench orientation is parallel to the main schistosity.

Trench exposes the contact between a basalt with an alteration zone composed of hornblende, garnet, chlorite and biotite. The contact is mineralized in traces of fine disseminated pyrrhotite and coarse blebs of arsenopyrite. Orientation of the main schistosity is N285 with near vertical dip.

Channel sampling returned no significant gold or base metal value. Grab sample returned 0.23 g/t Au (ref: 271601).

TR2012TR-003 (Figure 11)

Target is a rusty outcrop at 125m west of trench TR2012TR-001.

Trench exposes a very interesting breccia unit over 40 m. Origin of the breccia is unknown (magmatic, phreatic, etc...). Fragment composition is monogenic (volcanic felsic unit) except at the extreme north of the trench where some fragments of different compositions are found. A strong sub vertical lineation affects all the units. Composition is very heterogeneous. It is composed of a series of very stretched "pencils" causing a pseudo banding and rich in quartz-feldspar and phlogopite or hornblende-chlorite-garnet. Breccia matrix contains disseminated sulphides such as pyrite and pyrrhotite all over the unit.

A submetric unit with high content of quartz (chert?) returned the best gold value in the channel sampling (0.179 g/t Au over 1m).

TR2012TR-004 (Figure 12)

Trench TR2012TR-004 is at 400m NW of the TR2012TR-001. It is outside the grid (not located in the EMH ground survey).

The extreme NE is a natural outcrop composed of andesite slightly mineralized in pyrite and arsenopyrite. Unfortunately, we couldn't open the trench up north due to the presence of a swamp. To the south, the trench exposes the shear contact with an altered basalt unit (silicification, biotisation and chloritization).

No gold value was obtained in grab and channel sampling.

## TR2012TR-005 (Figure 13)

Trench TR2012TR-005 was done on the SNPL showing, discovered in 2009. It is constituted of semi-massive sulphides containing 20-40% pyrrhotite, 5-10% pyrite, 3-20% sphalerite, 1-2% chalcopyrite, trace to 1% galena and local trace of arsenopyrite. Sphalerite occurs in beds. The mineralization is strongly silicified and brecciated and contains alteration minerals such as chlorite, sericite and fuchsite (?). In 2009, values of 2.63% Zn and 12.7 g/t Ag were obtained from grab sample while channel sample delivered values of 2.65% Zn; 0.16% Pb; 0.08% Cu; 19.3 g/t Ag and 0.10 g/t Au over 3.00 meters. The metal content of this mineralization suggest a VMS affinity (Ag,Cd,Cu,Pb,Zn).

The 2009 handmade trench was extended with the excavator and additional channel sampling was done at the north and the south of the previous channel. It exposes a banded and altered unit (exhalite or chert ) mineralized in arsenopyrite (tr-15%), pyrite (1-5%) and chalcopyrite (tr-2%). Alteration in epidote, garnet, séricite, silice and chlorite is present.

No additional significant gold or base metals values were obtained by channel sampling.

## Trench TR2012TR-006 (Figure 13)

This trench was done at 25m west of the Trench TR2012TR-006 (SNPL showing) on a conductive outcrop found with a BeepMap.

The geology is identical to the SPNL showing. It consists of an exhalative unit characterized by centimetric banding and altered in epidote, sericite and chlorite. We observe sulphides locally in small amounts: traces to 5% arsenopyrite.

No significant gold or base metal values were obtained by channel sampling. The SPNL mineralization seems to have limited lateral extension.

## Trench TR2012TR-007 (Figure 14)

The target is a very large IP anomaly (over 240m wide) characterized by high chargeability and low resistivity (IP axis PP17-19). The trench is located at the north part, and the south half is under a lake.

Trench exposes over 30 meters a homogenous sedimentary unit (wacke). It is injected by veins of felsic material with a border zone rich in biotite-chlorite. Traces of a green mineral we suspect is beryl is observed. At the center of the trench, we observed an altered and strongly silicified zone. It contains also garnet-chlorite and garnet in centimetric and irregular blebs. Sulphides are observed: 5-10% pyrrhotite and traces of chalcopyrite. This zone is probably the source of the IP anomaly.

No significant gold or base metal values were obtained by channel sampling.

## Trench TR2012TR-008 (Figure 15)

The target is a wide IP (axis PP19-24) characterized by high chargeability and low resistivity in an area with no outcrops.

The trench exposes a sedimentary unit (wacke), locally banded (gneissic?). It is injected by millimetric and centimetric veins of quartz-feldspar-carbonates. Disseminated sulphides are observed (2 to 4% of pyrite and pyrrhotite). Concentration of sulphides is higher near the contact with veins. Unit is moderately to highly deformed with a gneissosity oriented N295 and sub vertical dip.

No significant gold or base metal values were obtained by channel sampling.

Trench TR2012TR-009 (Figure 15)

The target is a very large IP anomaly (over 100m wide) characterized by high chargeability and low resistivity (IP axis PP19 and PP24).

Trench exposed a wacke unit injected by quartz-plagioclase-carbonates-chlorite veinlets. Traces to 1% pyrite are observed all over the trench and in many forms : disseminated in the matrix, in fine blebs associated with veinlets etc.

No significant gold or base metal values were obtained by channel sampling.

Trench TR2012TR-010 (Figure 16)

The target is the western part of axis IP 35, characterized by a high chargeability and high resistivity and at proximity of the trench TR2012TR-011 (less than 40m).

The small trench exposes on 10m a wacke with porphyroblastic texture (garnet). It is injected by quartz veinlets and chlorite veinlets. Pyrite (2%) is associated with them but also found in fine blebs in the sedimentary matrix. Disseminated graphite is observed in proportions from 2 to 5%. A dyke of pegmatite with tourmaline, biotite with pyritized contacts is present. Unit is moderately deformed with a principal schistosity (Sp) at N095 and with a sub vertical dip.

No significant gold or base metal values were obtained by channel sampling.

TR2012TR-011 (Figure 16)

The target is the western part of axis IP PP 17, characterized by a high chargeability and high resistivity.

The trench exposes a wacke with some arenitic zones with less biotite content. It is injected with veins and veinlets of quartz-plagioclase-chlorite and opaque minerals. Disseminated pyrite and pyrrhotite are observed and in fine blebs in association with veins as well. Proportion is less than 2%. Graphite is observed locally and could be the source of the IP anomaly.

Channel sampling returned no interesting value.

## TR2012TR-012 (Figure 17)

Trench TR2012TR-012 is one of three trenches done in the Linda Block area. It is off the South grid and the area is not covered by IP survey. The target is a 2009 outcrop of silicate iron formation that graded 0.154 g/t Au and 0.13% W (sample 135352, Savard and Archer, 2009).

Trench exposes a metamorphosed sedimentary unit (wacke to paragneiss). It is injected by decimetric veins of quartz-plagioclase-biotite±chlorite±carbonates. Mafic bands can contain amphibole. Traces of disseminated pyrite are present in the matrix. Fine blebs of PY are present in leucosom and at their contacts. Blebs of PO are present in margins of a quartz vein. At the center of the trench, a more schistose and rusty metric zone from where comes the gold bearing sample of 2009 (grab) Orientation of the main schistosity is N285 with a strong dip (75°). Channel sampling returned no interesting values.

## 2012TR-013 (Figure 18)

This is the second trench of the Linda Bloc area. The target is a conductive outcrop of silicate iron formation that returned 0.169 Au/t Au (sample 193999, Savard, 2010).

Trench exposes a paragneiss over 15m. On the north half of the trench, we observe a rusty mineralized zone composed of chlorite-epidote and quartz veins with semi massive sulphide including 15% pyrite, 8% pyrrhotite and traces of chalcopyrite. Fine disseminated pyrite is present in the paragneiss all along the unit, and on the leucosom margins (traces to 2%). The orientation of the gneissosity (Sp) is N295 and a dip at 75.

Channel sampling of 2 meters was done on the mineralized zone in 2009. In 2012, we took a grab sample with a grade of 0.156 g/t Au. Additional sampling in 2012 reports a value of 2.19 g/t Au over 3 m. Suspecting a contamination by the laboratory, Virginia Mines requested for additional analyses (see Item 12-Data verification). Contamination was confirmed by laboratory. Reanalysis results are below the detection limit.

## TR2012TR-014 (Figure 19)

The target of this trench is a conductive outcrop (Beep map) interpreted as a basalt with decametric band of graphitic schist with biotite and amphibole (but it could be interpreted as a silicate-iron formation as well).

Principal geological unit is a paragneiss showing traces to 35% leucosom. Partial melting seems to be more important in the south part of the property. It is injected by some metric pegmatite with traces of beryl (? , mineral "turquoise"). A metric alteration zone is present in the south part of the property and is composed of amphibole-garnet-quartz-carbonate with 5% pyrrhotite in blebs. A mafic dyke composed of clinopyroxene and biotite is observed in the north part. A schistose zone is present in contact with the paragneiss. It is mineralized in pyrite and pyrrhotite±chalcopyrite (in traces in the matrix and blebs in association with leucosom).

No significant value was obtained in channel sampling.

TR2012TR-015 (Figure 20)

Target is a rusty and conductive outcrop (with a Beep Map).

The trench exposed a metasedimentary unit with an arenitic composition. The north half is strongly deformed and shows a protomylonitic texture with highly deformed feldspar and quartz grains. It includes two metric and rusty alteration zones. They are strongly chloritized and contain 6% of disseminated pyrite and pyrrhotite in the matrix or in blebs associated with chlorite. Arenitic unit contains traces of disseminated pyrite as well.

Main schistosity is oriented N105 with steep dip to the south. In the north half of the trench, it is nearly vertical.

No significant gold or base metal value was obtained by channel sampling.

TR2012TR-016 (Figure 21)

This trench is a follow-up on an old outcrop interpreted as an exhalite and discovered in early fieldworks on the property in 2002.

The trench exposes a paragneiss injected with some pegmatites. A metric altered and mineralized zone is present in the north of the trench. It is strongly chloritized and silicified. Sulphides present are pyrite (4%) and traces to 1% arsenopyrite.

No significant gold or base metal value was obtained by channel sampling.

TR2012TR-017 (Figure 22)

The target is an outcrop of mineralized paragneiss that returned a gold value of 0.22 g/t Au in a grab sample (ref:sample 251054, Roy and Boivin, 2011).

Trench exposes a homogenous paragneissic unit with a metric alteration zone composed of chlorite, quartz-garnet and 1% pyrite (traces of arsenopyrite).

No significant gold or base metal value was obtained by channel sampling.

TR2012TR-018 (Figure 23)

Target is an IP axis (PP-47) characterized by high chargeability and low resistivity. It is located at the contact between metasedimentary unit and felsic intrusive (as interpreted on the mag).

Trench is off the anomaly because of swampy terrain. Local geology is a paragneiss with strong partial melting (20%). Paragneiss is slightly altered in chlorite. Traces of disseminated pyrite are present in the matrix and in blebs in association with leucosomes. Main gneissosity is oriented N120 with shallow dip (34°).

No significant gold or base metal value was obtained by channel sampling.

## TR2012TR-019 (Figure 24)

Target is an outcrop of 2011 that graded 0.889 g/t Au. Grab sample (ref 251005, Roy and Boivin, 2011) is from a metasediment outcrop crosscut by decimetric-scaled pegmatite veins and decimetric-scaled quartz veins. Rock wall of these quartz veins contains a chlorite, garnet and hornblende alteration package.

Trench exposes the metasedimentary unit over 40 meters. It contains from 10 to 20% of leucosome. Disseminated pyrite is observed all along the unit. Grab sample of 2011 is from a 2 meter altered zone composed of chlorite, pyroxene, amphibole quartz and biotite. It contains 3% pyrrhotite.

Main schistosity (Sp) is oriented N115 with a dip of 40°.

No significant gold or base metal value was obtained by channel sampling.

## TR2012TR-020 (Figure 25)

The trench is located at 70 meter east of the trench TR2012TR-019. The target is similar to the previous trench and is a mineralized outcrop that returned a gold value of 0.64 g/t Au (ref sample 251023, Roy and Boivin, 2011). Gold is associated with quartz vein with garnet-rich zones and injected in a metasedimentary unit

Trench exposes a wacke that contains traces to 20% of leucosome locally (paragneiss). Retromorphic cordierite porphyroblasts are present. Tremolite is present as well. It is injected with centimetric to millimetric quartz-plagioclase veins ( $\pm$ brucite). To the north, a garnet-rich band contains quartz veins in tension. To the north, a metric siliceous-rich zone is mineralized with 5% PO and could be interpreted as a sulfurized chert. Folds with "Z" pattern are observed. Main schistosity (SP) is oriented N100 with a dip of 48°. With a 90° shifting from the south part to the north, it implies that the E-W orientation of the grid in this particular zone is wrong.

Unfortunately, no significant gold or base metal value was obtained by channel sampling.

## TR2012TR-021 (Figure 26)

Target is the IP axis PP-49 located in margin of a large magnetic and circular anomaly caused by a felsic intrusion.

Trench exposes a paragneiss with 15% leucosome implying an increase of the partial melting in the margin of the circular intrusive. The unit is locally chloritized. Rare traces of pyrite are present: we found it disseminated in the matrix, in blebs or stringers in the main schistosity. Leucosome contains traces of a blue mineral interpreted as beryl (or maybe apatite?).

Unfortunately, no significant gold or base metal value was obtained by channel sampling.

## TR2012TR-022 (Figure 27)

Target is the IP axis PP-49 characterized by a high chargeability and a low resistivity.

Trench exposes an intrusive felsic unit. Gneissic texture is locally developed. Traces to 3% pyrite and pyrrhotite in blebs in the tonalite are observed. Chlorite-carbonates veinlets contain blebs of pyrite as well. Main schistosity is oriented N211 with a dip of 45°.

No significant gold or base metal value was obtained by channel sampling.

TR202TR-023 (Figure 28)

Target is IP axis (PP-49) and a conductive outcrop with the beep map.

Local geology is heterogeneous. Main unit is a paragneiss (could be a orthogneiss with a tonalitic composition as well) strongly foliated but the gneissosity is weakly developed.

Two rusty and strongly silicified mineralized zones are observed. Disseminated pyrrhotite and blebs is observed at 3-5%. A third mineralized zone is associated with a decimetric quartz vein where wall rock contains 3% of pyrite in coarse blebs. We observe a feldspar-porphry dyke in the center of the trench. Unit is injected by anastomosed quartz veins and by carbonates veinlet. No significant gold or base metal value was obtained by channel sampling.

TR2012TR-024 (Figure 29)

Target is an outcrop of 2011 that returned 0.11 g/t Au in a grab sample. There is no association with an IP anomaly.

Trench exposes a metasedimentary unit (wacke) with a compositional banding. Five metric altered and mineralized zones are observed. Alteration is composed of amphibole, garnet, séricite, epidote and quartz. Pyrite is present from 0.5 to 3%.

No significant gold or base metal value was obtained by channel sampling.

TR2012TR-025 (Figure 30)

Target is an outcrop of metasedimentary unit discovered in 2012 and mineralized in arsenopyrite (TR2012JLD-018).

This small hand-made trench exposes a homogenous paragneiss. At north, it becomes a biotite-chlorite schist containing disseminated 2% pyrite and pyrrhotite in the matrix, stringer de pyrite in traces and a quartz vein with 5% arsenopyrite. The orientation on the main schistosity (Sp) is N125 with a dip of 50°.

Grab samples 270907 and 270908 results are respectively 0.36 and 0.31 g/t Au. Best channel result -is 0.33 g/t Au over 5.5m including 0.93g/t Au over 1m.

**ITEM 10 : DRILLING**

This section is not applicable to this report

**ITEM 11 : SAMPLE PREPARATION, ANALYSES AND SECURITY****11.1 Rock Samples**

Rock samples collected during the 2012 reconnaissance program were obtained to determine the elemental concentrations in a quantitative way by ALS Chemex, Val d'Or. These included both mineralized and barren rocks, the latter of which were selected for lithological controls. Samples were collected at the bedrock surface by either a hammer or a saw at sub-surface. All the collected samples were located with the use of a GPS instrument.

For surface sampling, most of the weathered crust was removed before samples were bagged. All samples were placed in individual bags with their appropriate tag number and the bags were sealed with fiberglass tape. Individual bagged samples were then placed in shipping bags. The authors are not aware of any sampling or recovery factors that would impact the reliability of the samples.

**11.2 Sample security, storage and shipment**

Samples were collected and processed by the personnel contracted by Virginia. They were immediately placed in appropriate sample bags, tagged and recorded with unique sample numbers. Rocks sealed samples were placed in shipping bags, which in turn were sealed with plastic tie straps or fiberglass tape. Bags remained sealed until the ALS Chemex Val-d'Or personnel opened them.

All samples were initially stored at the campsite. Samples were not secured in locked facilities, this precaution deemed unnecessary due to the remote location of the camp. Rocks samples were then loaded into a pickup truck for transport to Val-d'Or where Virginia personnel delivered them to the ALS Chemex sample preparation facility.

**11.3 Sample preparation and assay procedures****11.3.1 Rock samples**

After logging in, the samples were crushed in their entirety at the ALS Chemex preparation laboratory in Val-d'Or to >70% passing 2 mm (ALS Chemex Procedure CRU-31). A 200- to 250-g sub-sample was obtained after splitting the finer material (<2 mm). The split portion derived from the crushing process was pulverized using a ring mill to >85% passing 75 µm (200 mesh - ALS Chemex Procedure PUL-31). From each such pulp, a 100-g sub-sample was



obtained from another splitting and shipped to the ALS Chemex laboratory for assay. The remainder of the pulp (nominally 100 to 150 g) and the rejects are held at the processing lab for future reference. The AU + SCAN analytical packages have been used.

The Au + SCAN package includes Au, Ag, Al, As, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, S, Sb, Sc, Sr, Ti, V, W, and Zn. All elements, except Au, were determined by the ME-ICP41 Procedure. Au was determined by the AA23 Procedure. For the sample with the value higher than 10 g/t Au, the analysis was repeated with the GRA21 Procedure.

#### **ITEM 12 : DATA VERIFICATION**

No rigorous data verifications procedures were done for the prospecting program. For the channel sampling, a quality control procedure in order to validate laboratory results. One standard (certified reference materiel), one blank and one reject duplicate were included in each batch of twenty (20) samples. Three types of standards were used to verify gold results. Certified reference materials are identified as SI54, Si64 and SK62 and were provided by Rocklabs.

With less than 20 samples by standard type, it can be tricky to obtain accurate statistics calculation. Using statistics calculation of Rocklabs, four (4) standards results on 32 exceed three times the standard deviation. Although, we consider that results are meeting the standard quality. One exception is for standard sample no 273425 (certificate VO121872) that exceeds more than 20 times the standard deviation. This failure does not match with duplicate or blank failure. This report contains three anomalous gold results as well (273422 to 273424 : 1.62, 3.74 and 1.22 g/t Au). Expecting a contamination, we asked for reanalysis on the reject sample. Results confirm a contamination and reanalysis returned gold results below the detection limit.

Blank material consists of crushed (3/4 inch) calcite and silica commonly referred to as “marble aggregate” in the landscaping industry in 30-kg bags who were purchased at a local retailer in Rouyn-Noranda. We have no suspicion of contamination, except for the certificate CO121872.

Twenty-nine duplicates from reject samples were analysed, It revealed one failure. Sample 272720 failed to reproduced similar gold value on sample 272719 (difference of 0.71 g/t Au, difference of more than 45%). That failure does not match with any other failure or standard and blank in the same batch.

Regarding all these results, we consider that ALS-Chemex laboratory is answering quality controls and results are accurate.

#### **ITEM 13 : MINERAL PROCESSING AND METALLURGICAL TESTING**

#### **ITEM 14 : MINERAL RESOURCE ESTIMATES**

#### **ITEM 15 : ADJACENT PROPERTIES**

The project “Galinée” owned by Midland Exploration is located to the West of the Trieste Property. A few gold showings that returned values up to 5.22 g/t Au from grab samples were obtained from metasedimentary rocks on the Galinée project (Midland Exploration website).

#### **ITEM 16 : OTHER RELEVANT DATA**

This section is not applicable to this report.

#### **ITEM 17 : INTERPRETATION AND CONCLUSIONS**

##### **17.1 South Grid**

In 2011, new showings and gold bearing boulders were discovered by prospecting in the south part of Trieste property. Despite the extensive IP survey and trenching program, the 2012 campaign failed to discover new significant showings on the Trieste property.

Follow-up on 2008 and 2009 gold showings on the NW grid exposed spectacular breccia and intense metasomatism on trench TR2012TR-001 and 03 but returned no significant gold values. Trenching on SLPN showing did not extend the base metal mineralized zone that originally graded 2.65% Zn; 0.16% Pb; 0.08% Cu; 19.3 g/t Ag and 0.10 g/t Au over 3.00 meters.

On the South Grid, thick overburden has limited prospecting and investigation by trenching of geophysical targets (IP) and most of them remain largely unexplained. In the center of the grid, trenches on 2011 outcrops of metasedimentary unit with multiple quartz veins and garnet-rich zones show that mineralized zones are local with no lateral extension. Fluid circulation process involved in the formation process of these veins can be related to the presence of a circular tonalite intrusion, as seen on the HD magnetic survey. Despite the absence of high gold values and significant showings, the hand-made trench TR2012TR-25 confirms the anomalous character of the metasedimentary unit with a channel sampling that returned 0.33 g/t Au over 5.5m

In the southern part of the South grid, most of the IP axis remain untested due to the thick overburden. Over the years, discovery of multiple mineralized boulders in the area confirms the high potential of these geophysical targets for gold bearing mineralization. More than 10 boulders are spread over 6km on a trend oriented N060 from Linda Block to the NE of the South grid. Gold values vary from 0.6 g/t Au to 20.6 g/t. The Linda block has a calco-silicated composition (mostly quartz-clinopyroxene) but other boulders are interpreted as silicate-rich iron formations.

#### **ITEM 18 : RECOMMENDATIONS**

Considering the presence of numerous interesting IP axis, multiple gold-bearing mineralized boulders and thick overburden all over the property, a diamond drilling program is the only way to verify all geophysics targets on the property.

To optimized targeting, a review on the till survey and quaternary study of the area could be useful regarding the abundance of mineralized boulders all over the property.

**ITEM 19 : REFERENCES**

Beesley, T.J., 1992, Report on Winter 1992 diamond drilling program, Eastmain Project, Harbour Lake, SOQUEM Option, Northern Quebec. Kingswood exploration 1985 Ltd.

Berger, J., 1999, Rapport final sur la détection des chapeaux de fer à l'aide d'une image Landsat TM pour les feuillettes 23E ouest et 33H est, projet Minto; GM 58324; 8 p.

Cannuli, M., 1975, Rapport des levés géochimiques d'eau et de sédiments de lac, territoire de la Baie James, Bloc "B", GM 34036, 38 p.

Chapdelaine, M., 1999, Projet Caniapiscau, Rapport des travaux de reconnaissance automne 1998. Internal Report, Mines d'Or Virginia, 13 pages.

Charbonneau, R., 2009, Systematic Till Survey 2009, Trieste Property, James Bay, Québec, Inlandsis Consultant, 48 pages.

Choinière, J. and Leduc, M., 1996, Analyse pour l'arsenic, l'or, l'antimoine et le tungstène (SNRC 23E). Ministère des Ressources naturelles, Québec, MB 96-29.

David, J., et Parent, M., 1997, Géochronologie U-Pb du Projet Moyen-Nord. Ministère des Ressources Naturelles, Québec; rapport interne.

Desbiens, H., 1995, Rapport de la prospection et de la cartographie géologique de la propriété Lac Trieste, Baie-James, Québec (33H/ 07-08). Ministère des Ressources naturelles, Québec, GM 53578, 25 pages.

Duffel, S. and Roach, R.A., 1959, Mount Wright, Québec-Newfoundland. Geological Survey of Canada, Map 6-1959.

Eade, K.E., 1966, Fort George River and Kaniapiskau River (west half) Map-Areas, New Quebec. Geological Survey of Canada, Memoir 354, 23 pages.

Francoeur, G. and Chapdelaine, M., 1995, Technical Report and Recommendations, Eastmain River Project (40349). SOQUEM, 17 pages.

Gauthier, M., 1996, Géologie de la région du Lac Sauvolles (SNRC 33H et 23E ouest); MB 96-27; carte 1:250 000.

Gauthier, M., Larocque, M., et Chartrand, F., 1997, Cadre géologique, style et répartition des minéralisations métalliques de la Grande Rivière, territoire de la Baie James; MB 97-30; 69 p.

Grenier, L., Savard, M., Archer, P., 2008, Technical Report and Recommendations, Reconnaissance Program, Trieste Project, 44 p.

Hocq, M., 1985, Géologie de la région des lacs Campan et Cadieu, Territoire-du-Nouveau-Québec. Ministère de l'Énergie et des Ressources, Québec, ET 83-05, 178 pages.

Lamothe, D., Leclair, A.D. and Choinière, J., 1998, Géologie de la région du lac Vallard (23C). Ministère des Ressources naturelles, Québec, RG 98-13, 31 pages.

Leclair, A.d., Lamothe, D., Choinière, J. and Parent, M., 1998, Géologie de la région du lac Bermen (23F et 23G). Ministère des Ressources naturelles, Québec, RG 97-11  
Ross, M., 1998, Géochimie du till et comptage de grain d'or sur la propriété Escale, été 1998, Ressources Sirios inc.; GM 56127; 37 p.

Roy, I , Boivin, J.F. 2011. Technical report and recommendations, reconnaissance program, Trieste project, 99 pages, 5 Cartes.

St-Hilaire, C. 2011. Heliborne high resolution aeromagnetic survey, Escale, Nichicun Trieste and Ashuanipi properties, 28 pages. 8 cartes.

Savard, M., 2000, Rapport technique sur le projet Reccey 55 Nord, Automne 2000, Mines d'Or Virginia, inc., 9 p.

SDBJ, 1978, Cartes géochimiques des sédiments de lacs de la région de la Baies-James. Ministère des Ressources naturelles, Québec, GM-34039.

Sharma, K.N.M., 1978, Région de la Grande Rivière, Nouveau-Québec (projet 1977); Ministère des Richesses naturelles, Québec; DPV 558, 32 p.

Tshimbalanga, S., 2008, Levés de polarisation provoquée, d'électromagnétisme EMH et de magnétométrie, propriété Trieste, région de la Baie-James, Québec, 19 pages.

Tschimbalanga, S.2012. Levé de polarisation provoquée, Propriété Trieste, Lac Orillat, Municipalité de Baie-James, Québec, SNRC 33H/01, 17 pp..

Villeneuve, P.-A., 1999, Rapport des travaux du projet Caniapiscau, 1999, Mines d'Or Virginia, 22 p.

Villeneuve, P.-A., 2000, Rapport des travaux 2000, projet Caniapiscau. Internal Report, Mines d'Or Virginia, 27 pages.

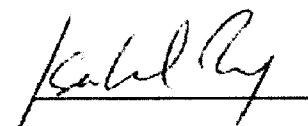
**ITEM 20 : DATE AND SIGNATURES PAGE**

**CERTIFICATE OF QUALIFICATIONS**

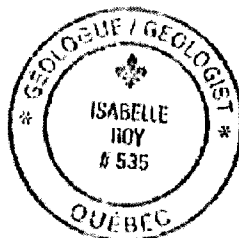
I, *Isabelle Roy*, do hereby certify that:

- I am presently employed as a Project Geologist with Virginia Mines Inc., 300, rue St-Paul, Suite 200, Québec (Québec), G1K 7R1..
- I received a B.Sc. in Geology in 1993 from Laval University (Québec).
- I have been working as a geologist in mineral exploration since 1994.
- I am a professional geologist presently registered to the board of the *Ordre des géologues du Québec*, permit number 535.
- I am a qualified person with respect to the Trieste project in accordance with section 5.1 of the national instrument 43-101.
- In collaboration with the other author, I have worked on the database and maps of this report utilizing proprietary exploration data generated by Virginia Mines Inc. and information from various authors and sources as summarized in the reference section of this report.
- I am not aware of any missing information or change, which would have caused the present report to be misleading.
- I do not fulfil the requirements set out in section 5.3 of the National Instrument 43-101 for an «independent qualified person» relative to the issuer being a direct employee of Virginia Mines Inc.
- I have been involved in the Trieste Project since June 2011.
- I have read and used the National Instrument 43-101 and the Form 43-101A1 to make the present report in accordance with their specifications and terminology.

Dated in Québec, Qc, this 8<sup>th</sup> day of January 2013.



Isabelle Roy, B.Sc., P. Géo.



**CERTIFICATE OF QUALIFICATIONS**

I, *Rose Anne Bouchard* do hereby certify that:

- I am presently employed as Trainee Geological Engineer with Virginia Mines Inc., 300, rue St-Paul, Suite 200, Québec (Québec), G1K 7R1..
- I received a B.Sc. in Geology in 2012 from University du Québec à Chicoutimi (Québec).
- I have been working as trainee geological engineer since 2012.
- I am a professional trainee engineer presently registered to the board of the *Ordre des ingénieurs du Québec*, permit number 5020517.
- I am not a qualified person with respect to the Trieste project in accordance with section 5.1 of the national instrument 43-101.
- In collaboration with the other author, I have worked on the database and maps of this report utilizing proprietary exploration data generated by Virginia Mines Inc. and information from various authors and sources as summarized in the reference section of this report.
- I am not aware of any missing information or change, which would have caused the present report to be misleading.
- I do not fulfil the requirements set out in section 5.3 of the National Instrument 43-101 for an «independent qualified person» relative to the issuer being a direct employee of Virginia Mines Inc.
- I have been involved in the Trieste Project since June 2011.
- I have read and used the National Instrument 43-101 and the Form 43-101A1 to make the present report in accordance with their specifications and terminology.

Dated in Québec, Qc, this 13<sup>th</sup> day of December 2012.

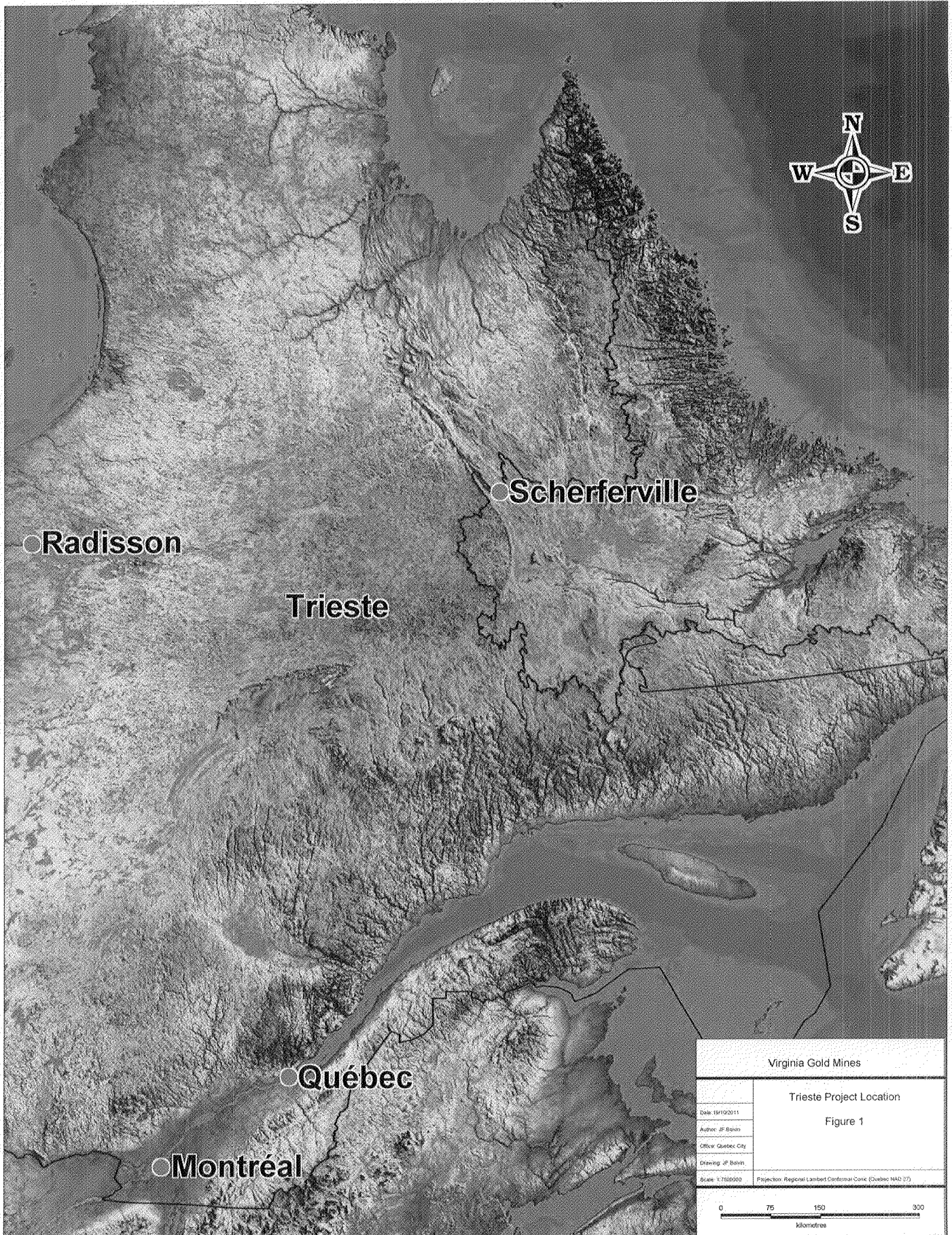
*Rose Anne Bouchard.*

:

Rose Anne Bouchard, B.Sc Ing in training

**ITEM 21 : FIGURES AND MAPS**





Virginia Gold Mines

Trieste Project Location

Figure 1

Date: 19/10/2011

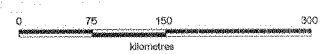
Author: JF Babin

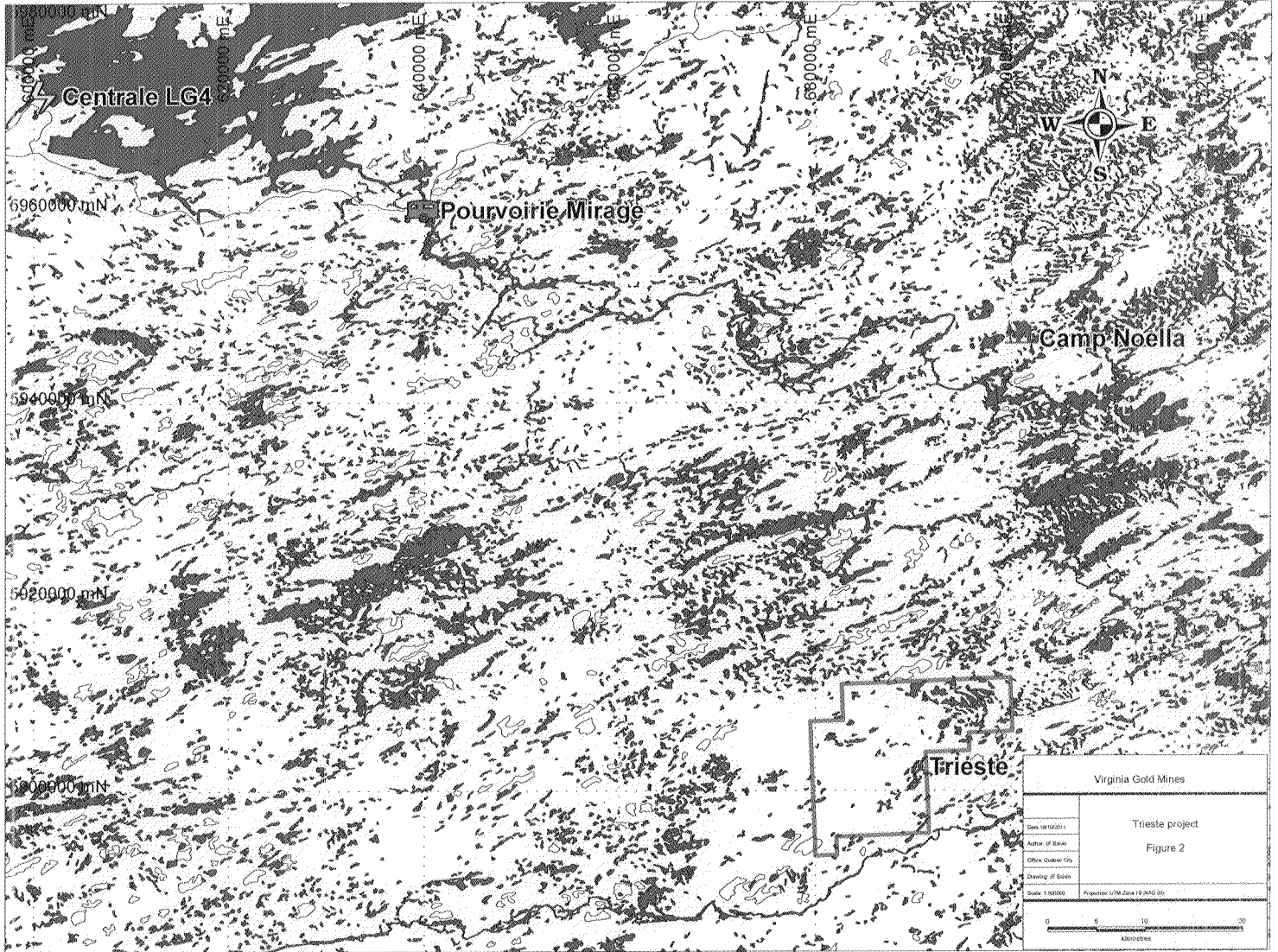
Officer: Québec City

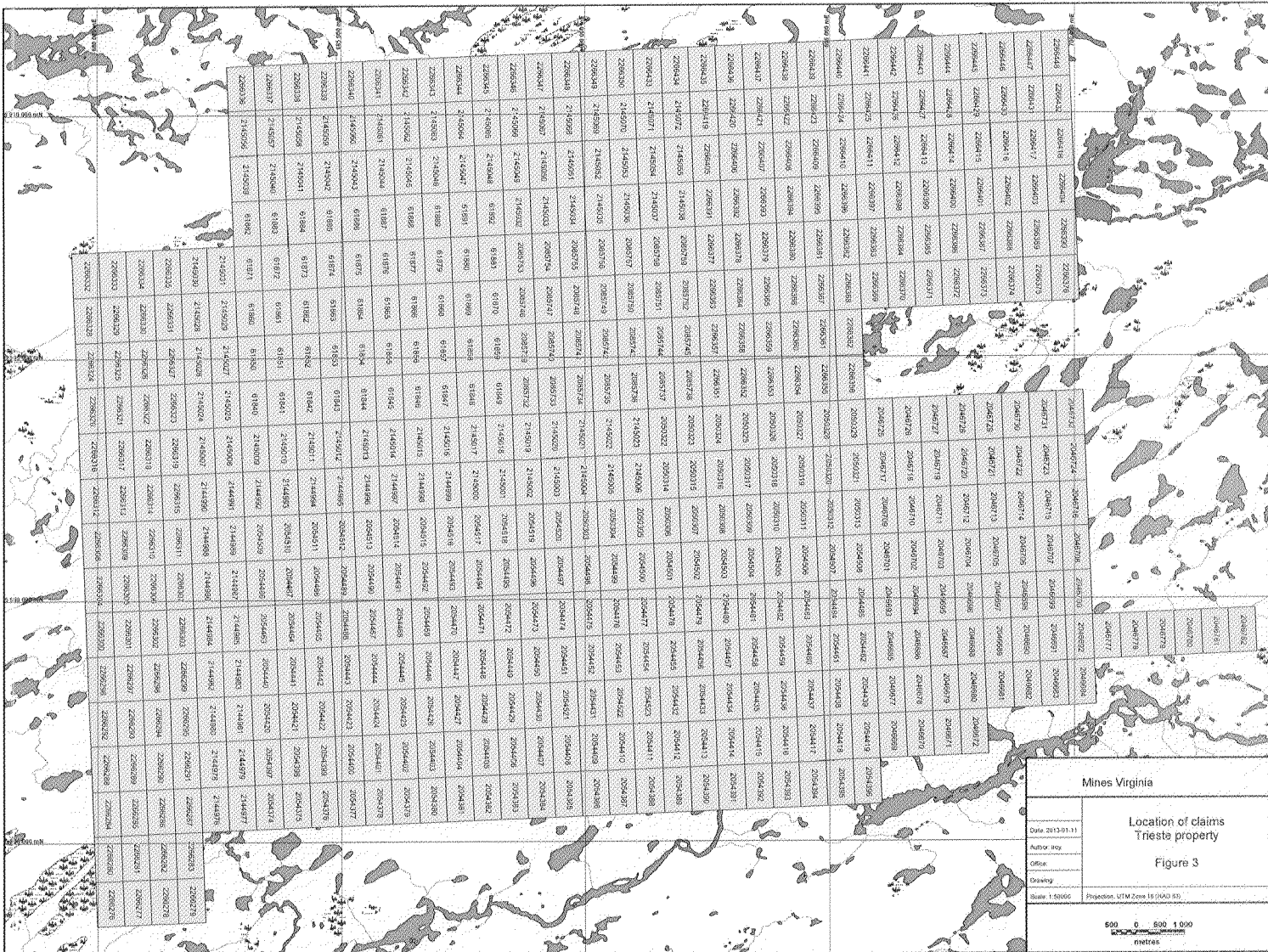
Drawing: JF Babin

Scale: 1:750000

Projection: Regional Lambert Conformal Conic (Québec NAD 83)







Mines Virginia

Date: 2013-01-31

Author: [unclear]

Office: [unclear]

Drawing: [unclear]

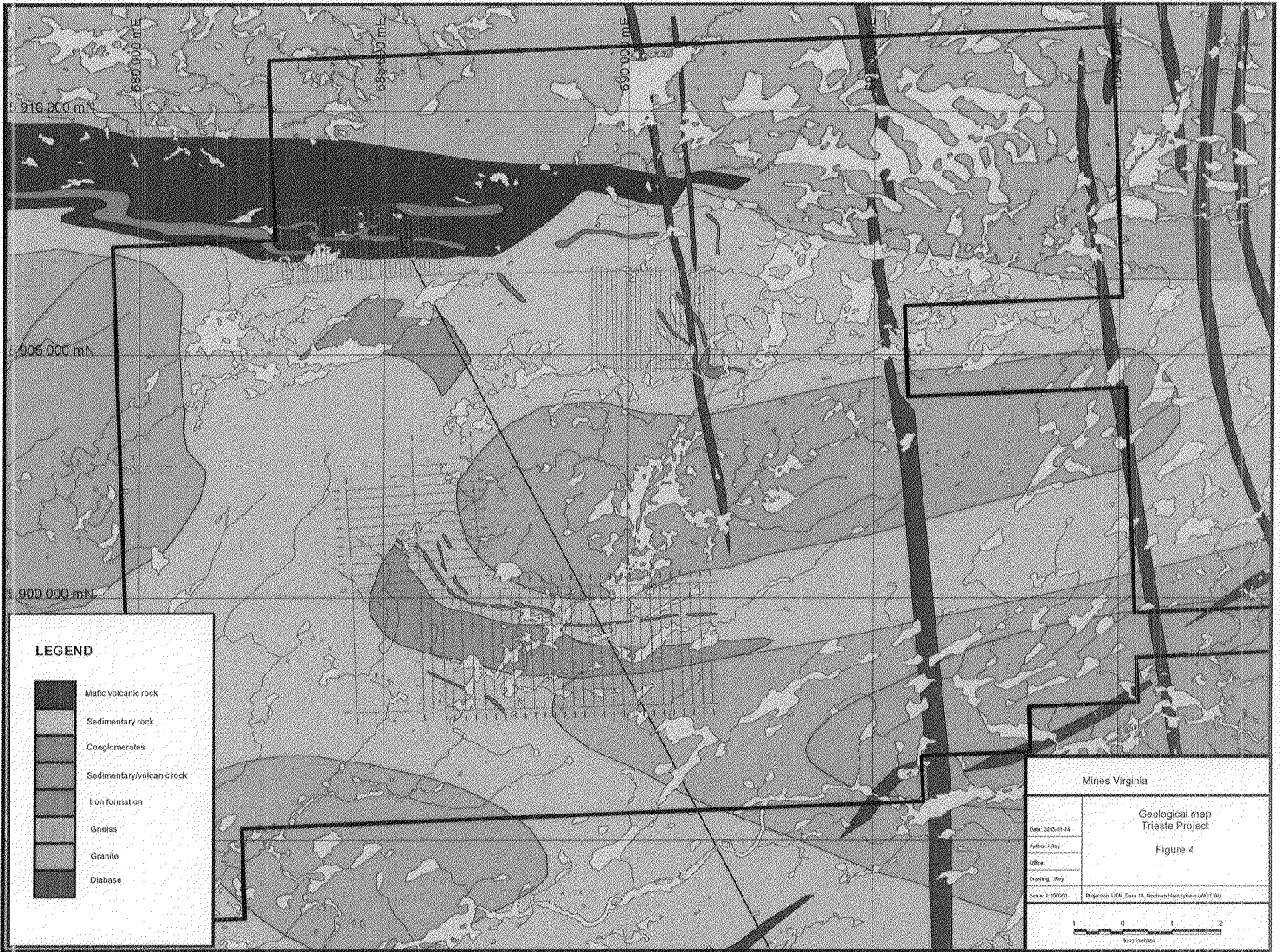
Scale: 1:5000

Projection: UTM, Zone 18 (NAD 83)

**Location of claims  
Trieste property**

**Figure 3**

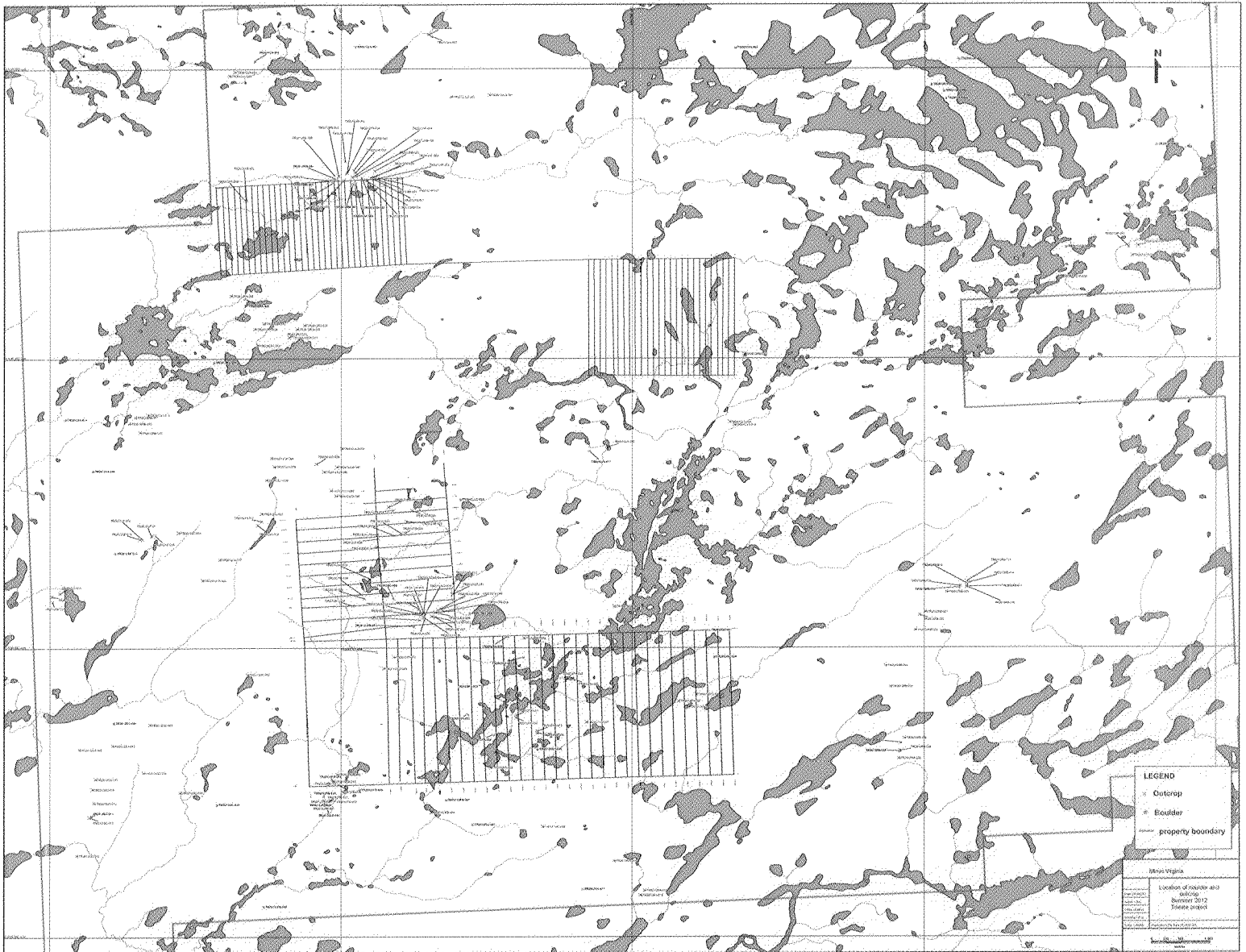
500 6 500 1000  
metres

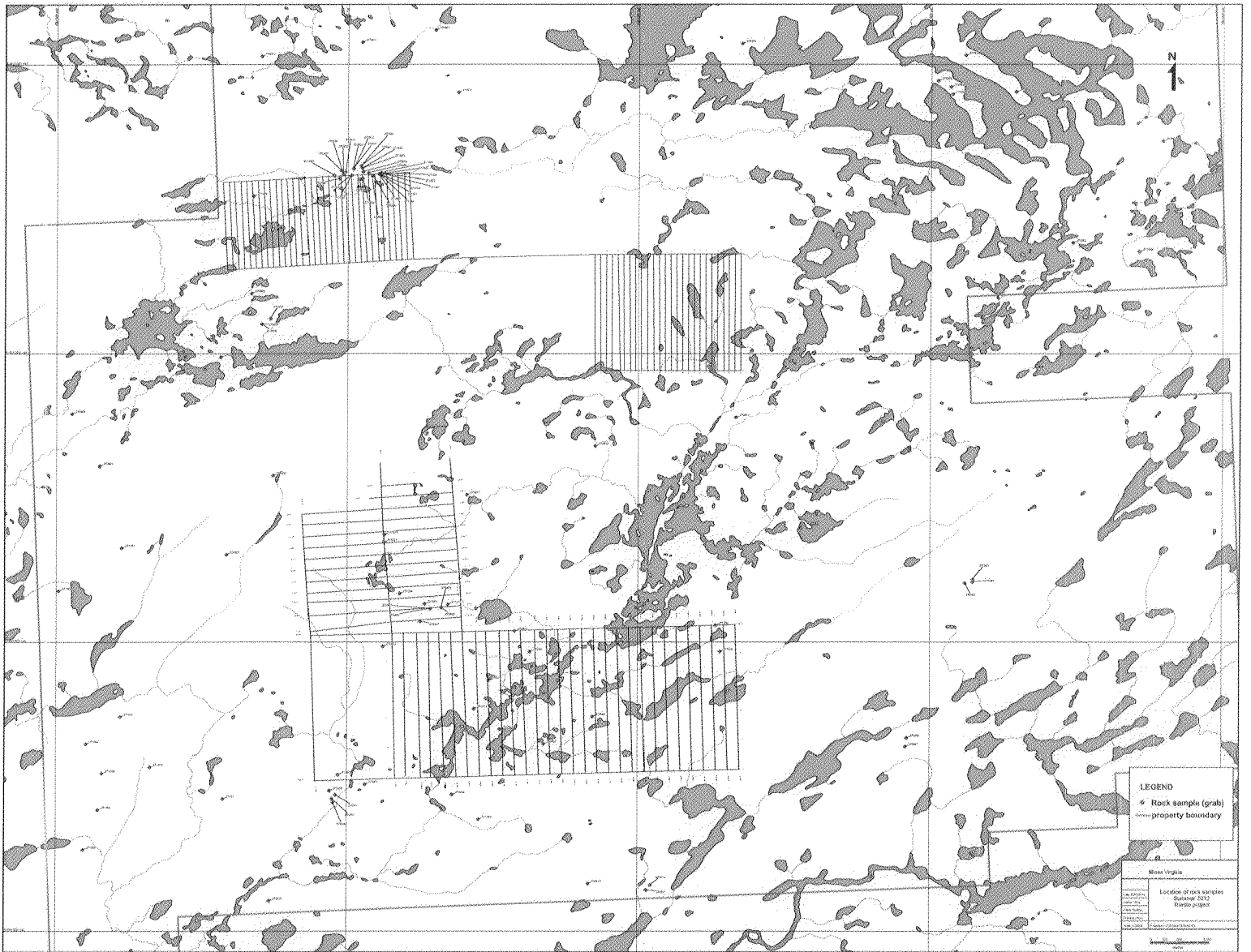


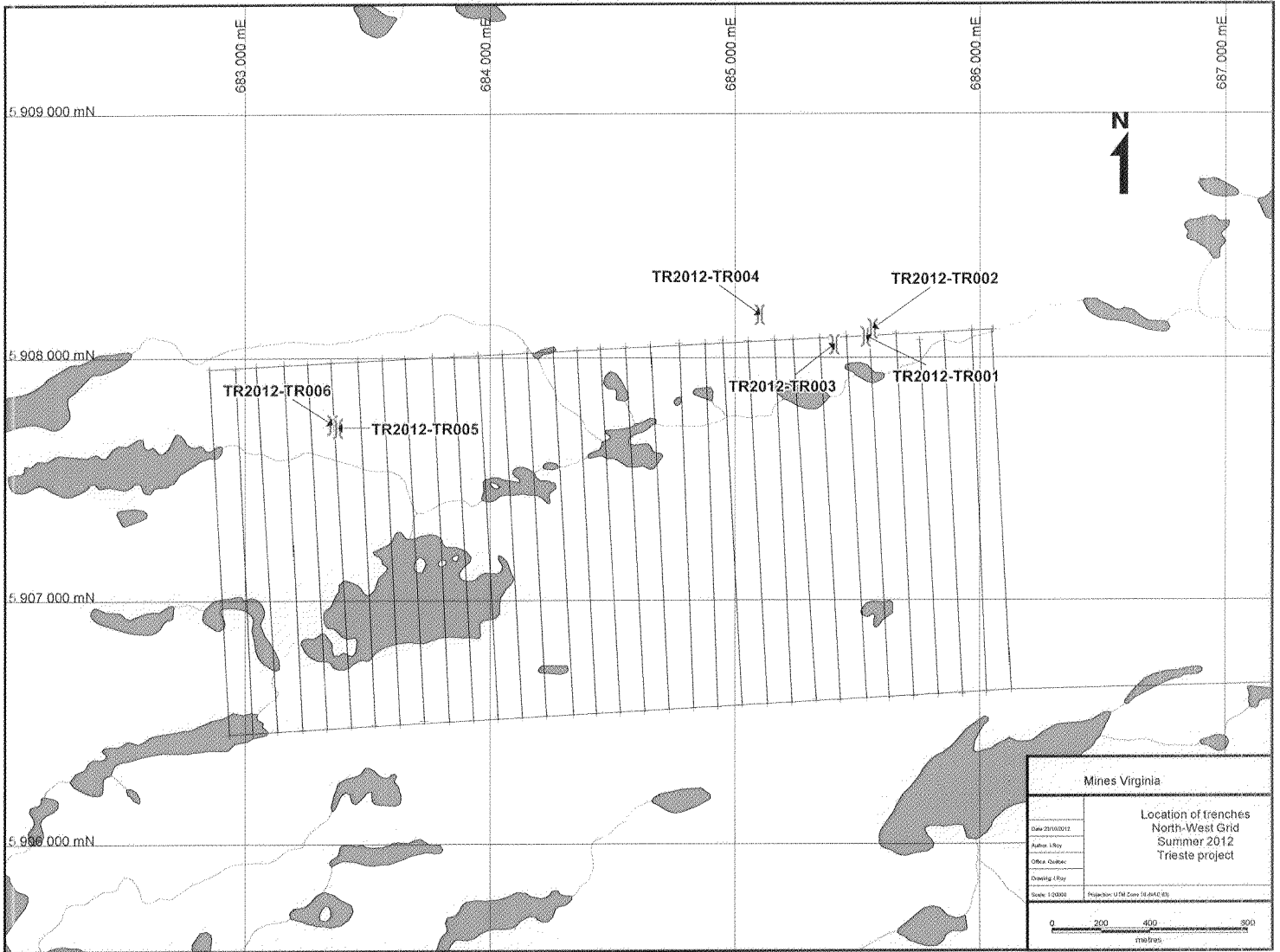
**LEGEND**

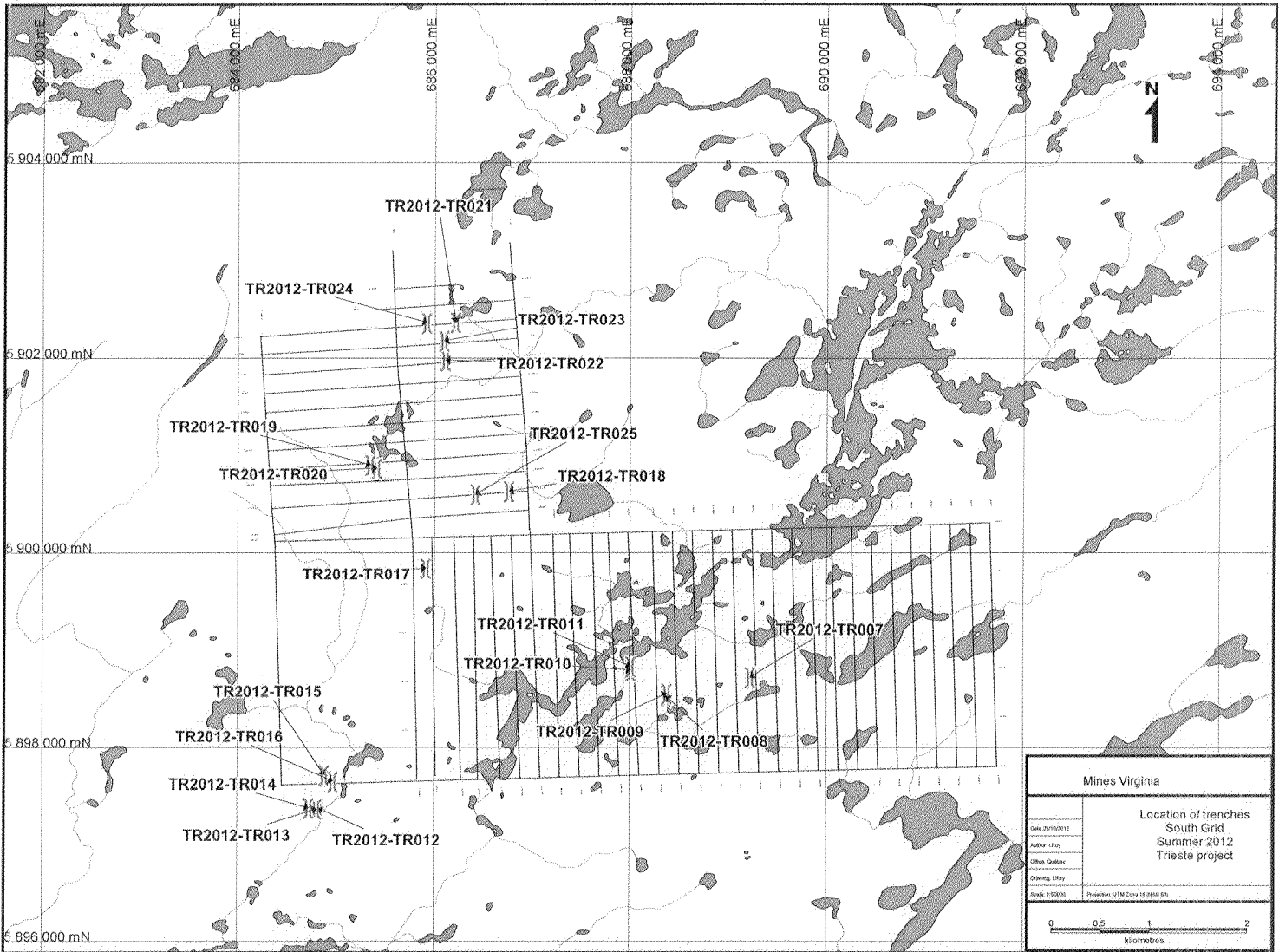
- Mafic volcanic rock
- Sedimentary rock
- Conglomerates
- Sedimentary/volcanic rock
- Iron formation
- Gneiss
- Granite
- Diabase

Mines Virginia	
Geological map Trieste Project	
Figure 4	
Date: 2023-07-14	
Author: J. Ray	
Office:	
Drawing: J. Ray	
Scale: 1:10000	Digitized by: [blank]

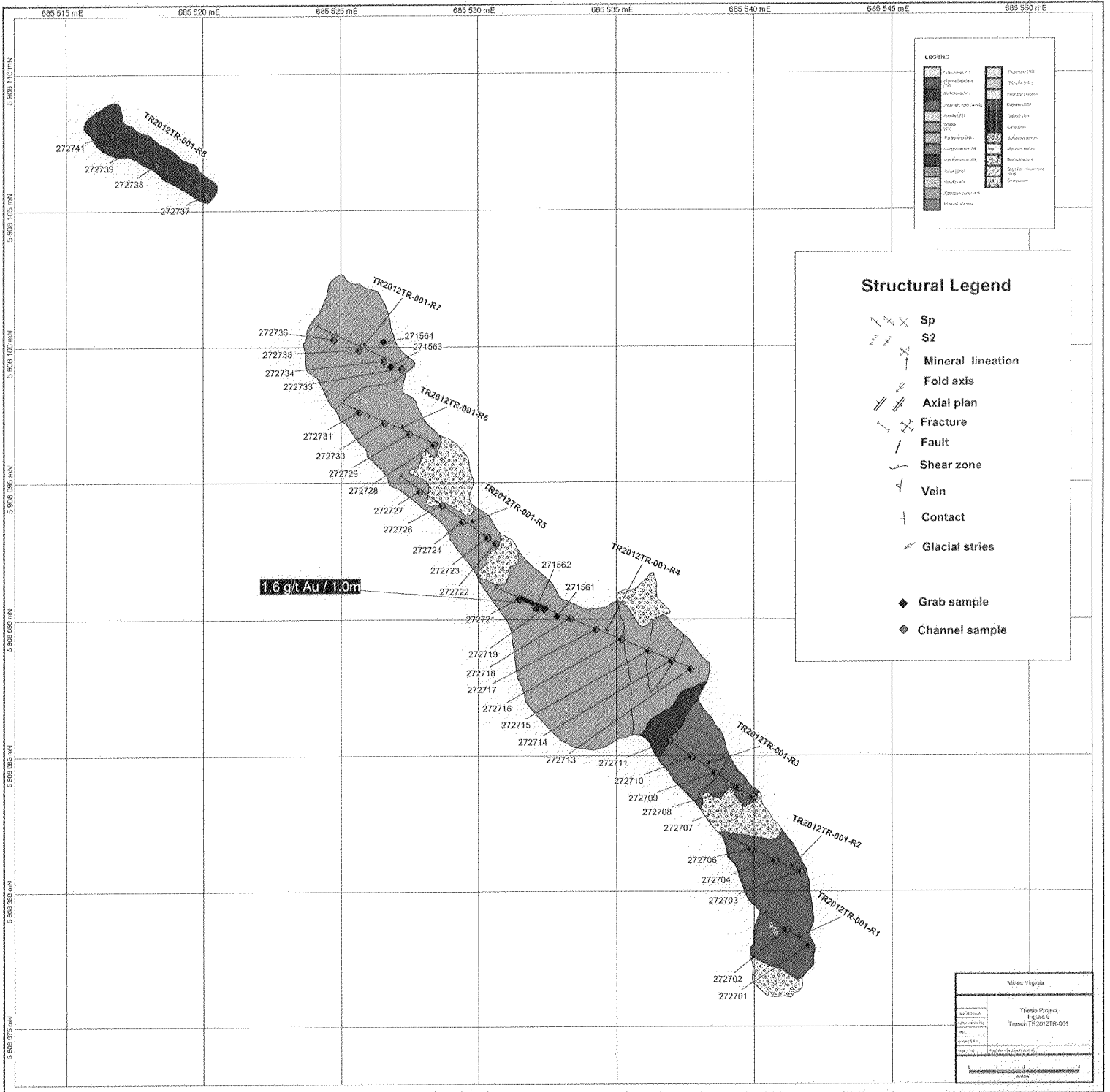




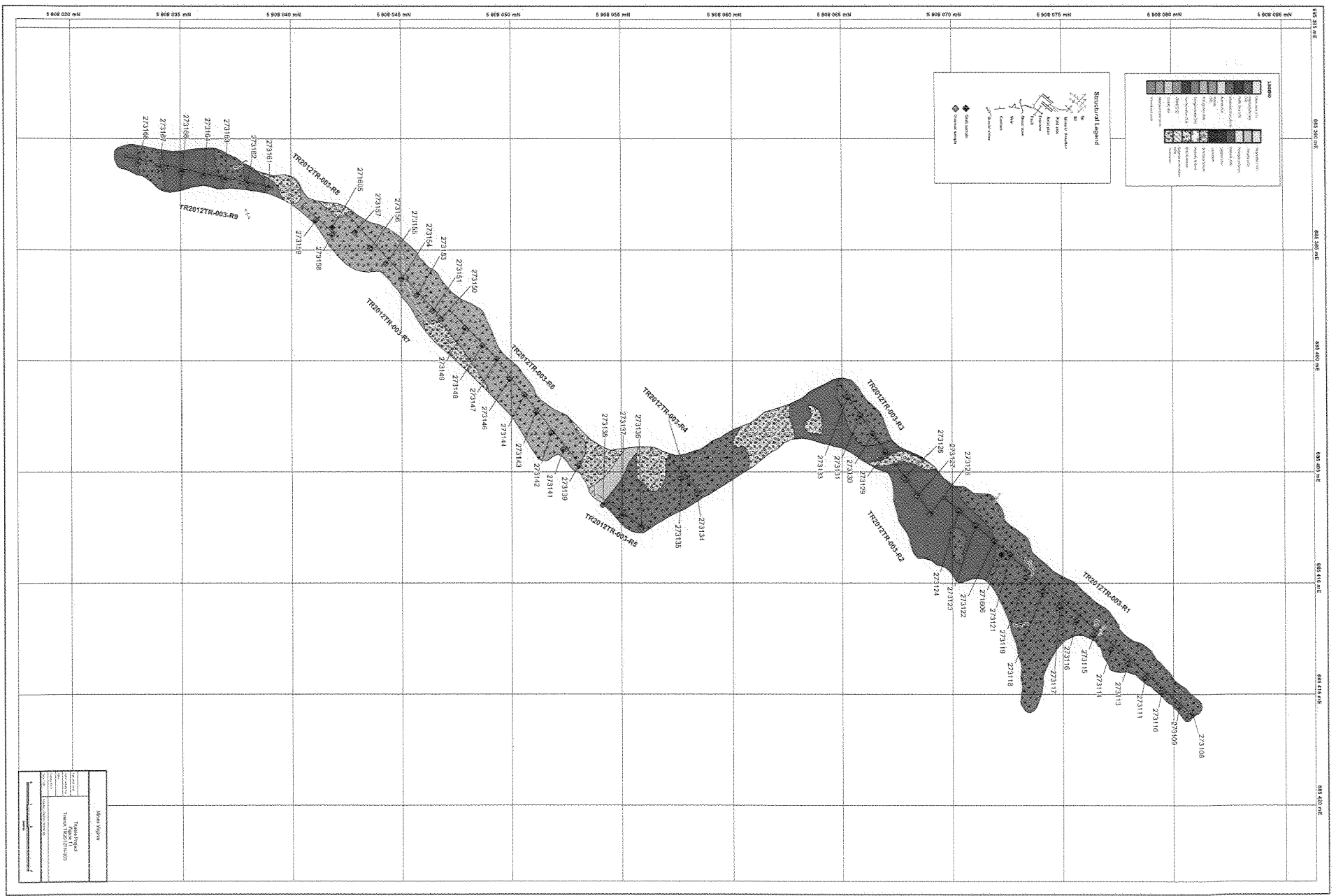












685 090 mE 685 095 mE 685 100 mE 685 105 mE

**LEGEND**

	Felsic lava (V1)		Pegmatite (I1G)
	Intermediate lava (V2)		Tonalite (I1D)
	Mafic lava (V3)		Feldspar porphyry
	Ultramafic rock (I4-V4)		Diabase (I3B)
	Arenite (S2)		Gabbro (I3A)
	Wacke (S3)		Leucosom
	Paragneiss (M4)		Schistous texture
	Conglomerate (S4)		Mylonitic texture
	Iron formation (S9)		Breccia texture
	Chert (S10)		Sulphide mineralized zone
	Quartz vein		Overburden
	Alteration zone (M15)		
	Mineralized zone		

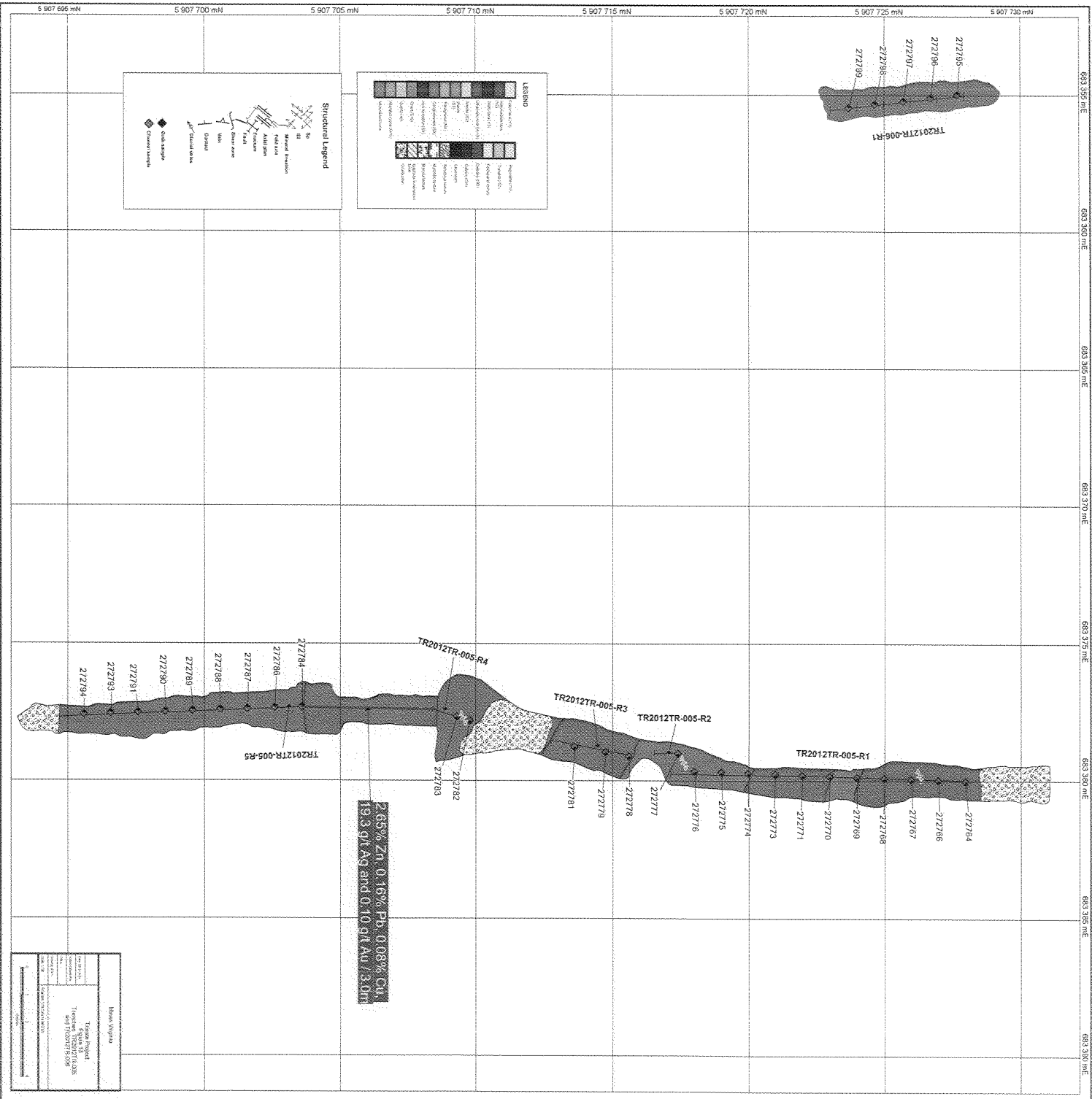
**Structural Legend**

	Sp
	S2
	Mineral lineation
	Fold axis
	Axial plan
	Fracture
	Fault
	Shear zone
	Vein
	Contact
	Glacial stries
	Grab sample
	Channel sample



Mines Virginia	
Trieste Project Figure 12 Trench TR2012TR-004	
Date: 2012-10-03	Author: Isabelle Roy
Office:	Drawing: E.R.V.
Scale: 1:100	Projection: UTM Zone 18 (NAD 83)

5 608 180 mN  
5 608 185 mN  
5 608 190 mN  
5 608 175 mN  
5 608 170 mN



**Structural Legend**

- Normal Fault
- Reverse Fault
- Fault Zone
- Fault
- Strike Slip Fault
- Wedge
- Concord
- Unconformity
- Sub-surface
- Quaternary Deposits

**LEGEND**

- TR2012TR-005-R4
- TR2012TR-005-R3
- TR2012TR-005-R2
- TR2012TR-005-R1
- TR2012TR-005-R5
- TR2012TR-006-R1

2.65% Zn, 0.16% Pb, 0.08% Cu,  
19.3 g/t Ag and 0.10 g/t Au @ 3.0m

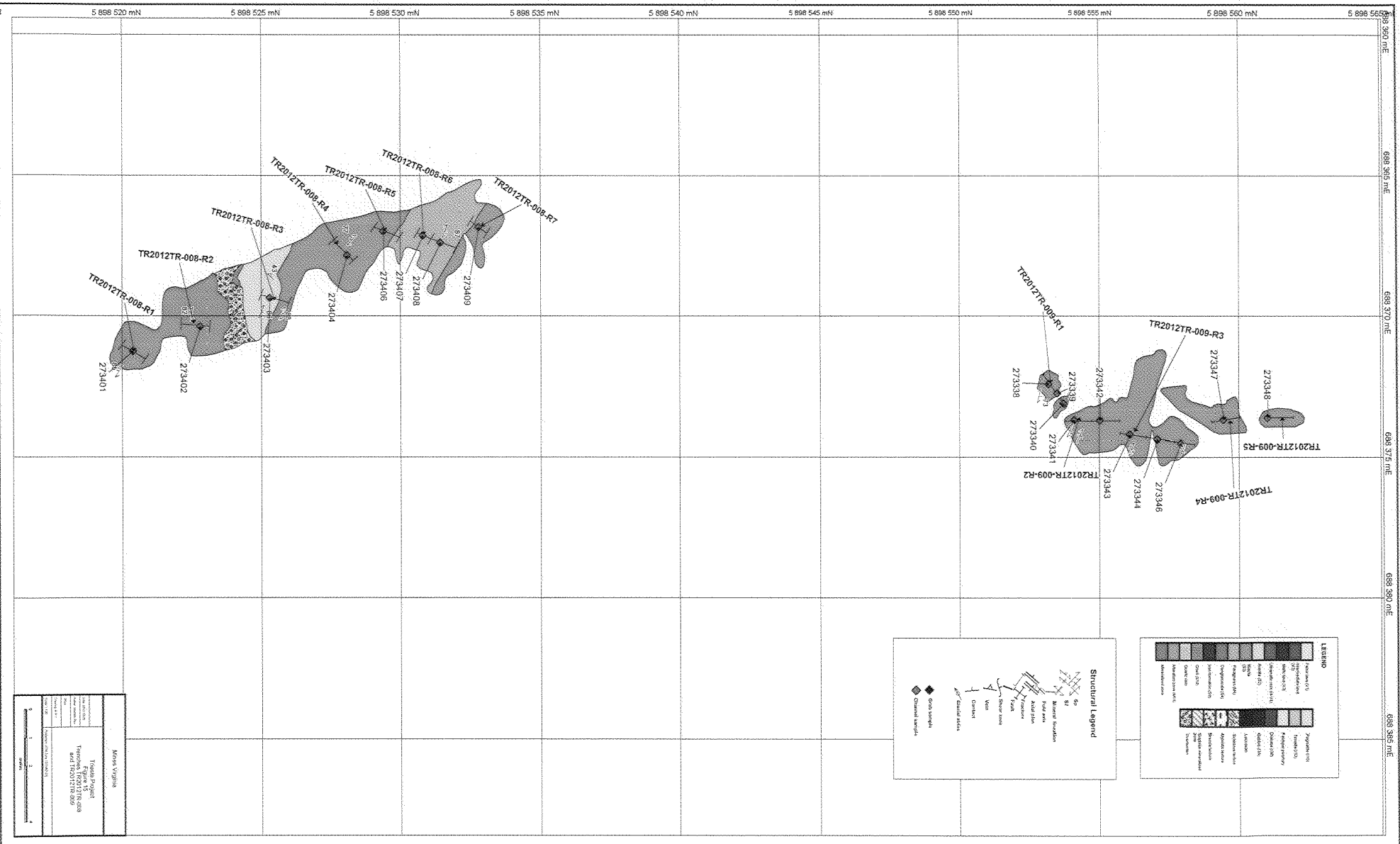
**Block 593/60**

**Technical Report**

**Technical TR2012TR-005**

49/1/2012/19/39





5 898 520 mN  
5 898 525 mN  
5 898 530 mN  
5 898 535 mN  
5 898 540 mN  
5 898 545 mN  
5 898 550 mN  
5 898 555 mN  
5 898 560 mN  
5 898 565 mN

698 362 mE  
698 370 mE  
698 375 mE  
698 380 mE  
698 385 mE

**LEGEND**

	Riprap
	Concrete
	Asphalt concrete
	Gravel
	Sand
	Gravelly sand
	Sandstone
	Sandstone with gravel
	Sandstone with gravel and shells
	Sandstone with gravel and shells and shells
	Sandstone with gravel and shells and shells and shells
	Sandstone with gravel and shells and shells and shells and shells
	Sandstone with gravel and shells and shells and shells and shells and shells

**Structural Legend**

	Riprap foundation
	Concrete foundation
	Asphalt concrete foundation
	Gravel foundation
	Sand foundation
	Gravelly sand foundation
	Sandstone foundation
	Sandstone with gravel foundation
	Sandstone with gravel and shells foundation
	Sandstone with gravel and shells and shells foundation
	Sandstone with gravel and shells and shells and shells foundation
	Sandstone with gravel and shells and shells and shells and shells foundation

MORE VIEWS

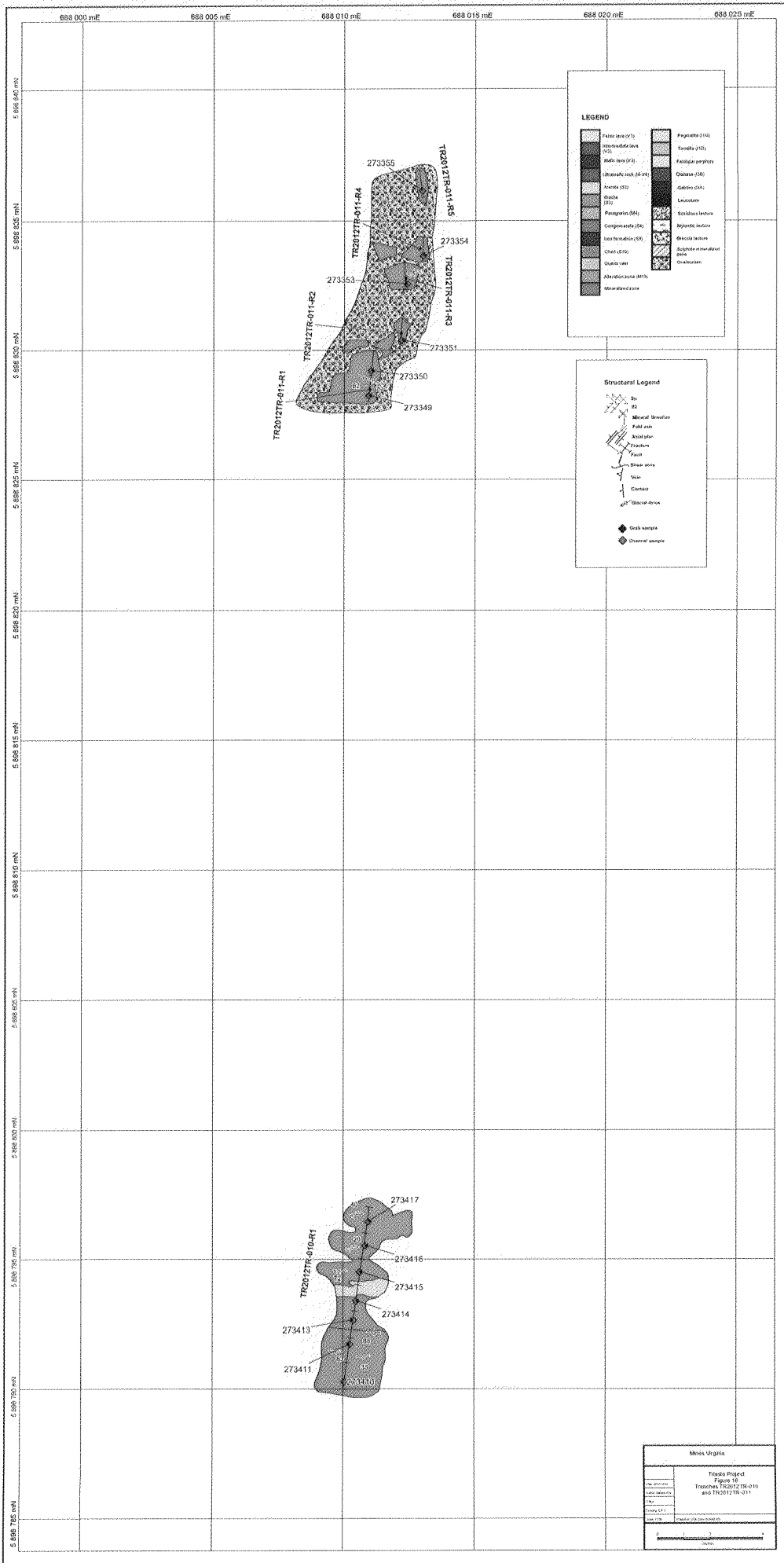
Technical Drawing

Figure 15

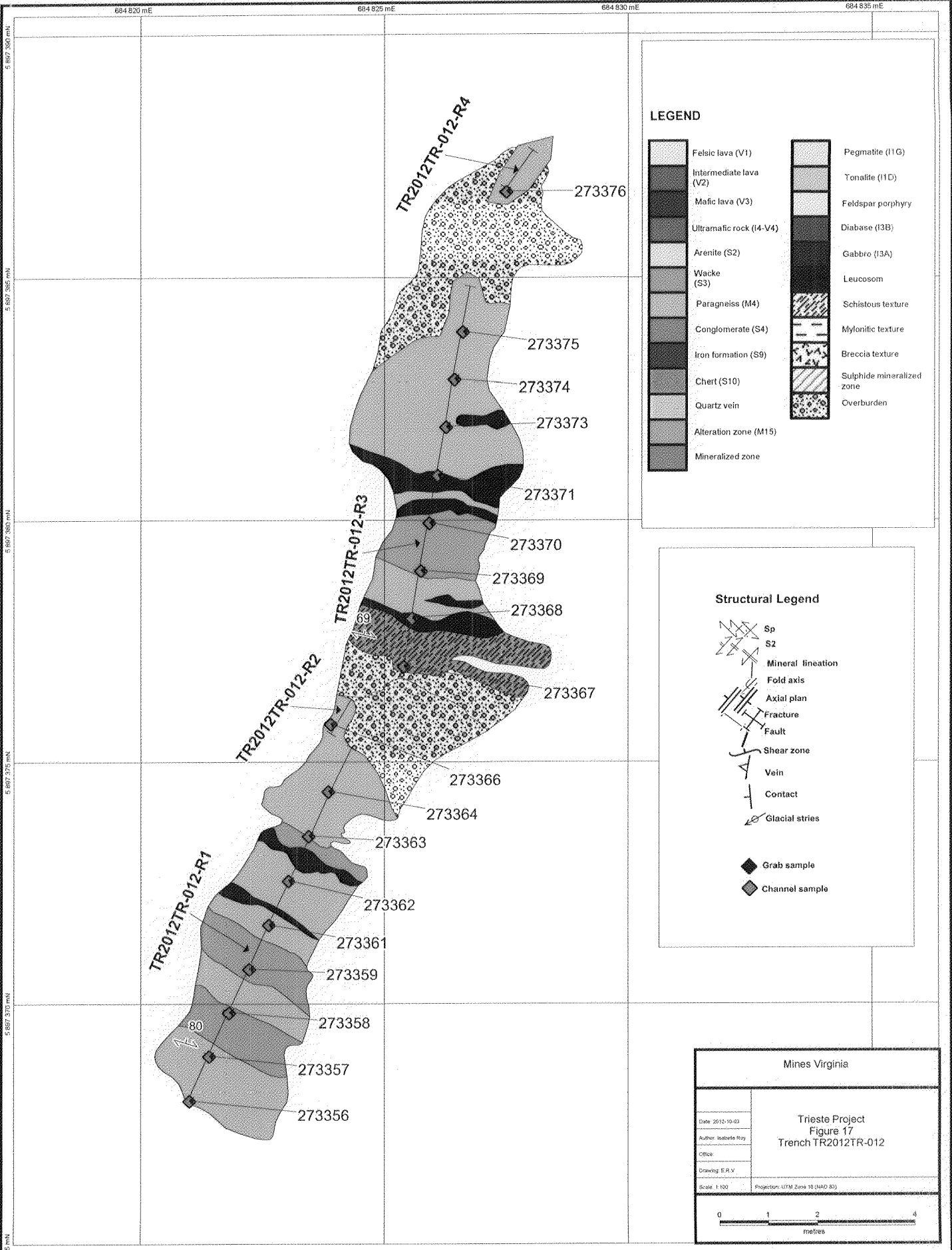
TR2012TR-008-R1 to R7

TR2012TR-009-R1 to R4

Scale: 1:100







**LEGEND**

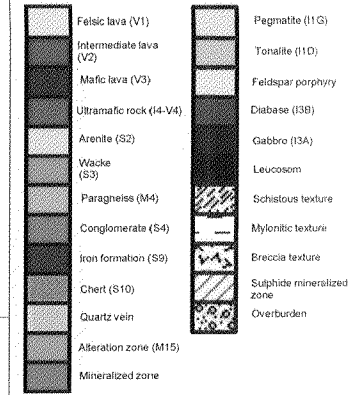
[Pattern]	Felsic lava (V1)	[Pattern]	Pegmatite (I1G)
[Pattern]	Intermediate lava (V2)	[Pattern]	Tonalite (I1D)
[Pattern]	Mafic lava (V3)	[Pattern]	Feldspar porphyry
[Pattern]	Ultramafic rock (I4-V4)	[Pattern]	Diabase (I3B)
[Pattern]	Arenite (S2)	[Pattern]	Gabbro (I3A)
[Pattern]	Wacke (S3)	[Pattern]	Leucosom
[Pattern]	Paragneiss (M4)	[Pattern]	Schistous texture
[Pattern]	Conglomerate (S4)	[Pattern]	Mylonitic texture
[Pattern]	Iron formation (S9)	[Pattern]	Breccia texture
[Pattern]	Chert (S10)	[Pattern]	Sulphide mineralized zone
[Pattern]	Quartz vein	[Pattern]	Overburden
[Pattern]	Alteration zone (M15)		
[Pattern]	Mineralized zone		

**Structural Legend**

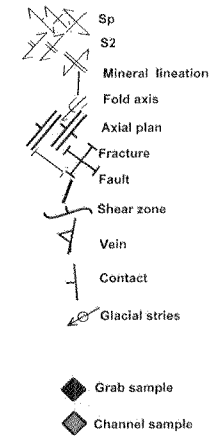
[Symbol]	S <sub>p</sub>
[Symbol]	S <sub>2</sub>
[Symbol]	Mineral lineation
[Symbol]	Fold axis
[Symbol]	Axial plan
[Symbol]	Fracture
[Symbol]	Fault
[Symbol]	Shear zone
[Symbol]	Vein
[Symbol]	Contact
[Symbol]	Glacial stries
[Symbol]	Grab sample
[Symbol]	Channel sample

Mines Virginia	
Trieste Project Figure 17 Trench TR2012TR-012	
Date: 2012-10-03	
Author: Isabella Roy	
Office:	
Drawing: E.R.V.	
Scale: 1:100	Projection: UTM Zone 18 (NAD 83)

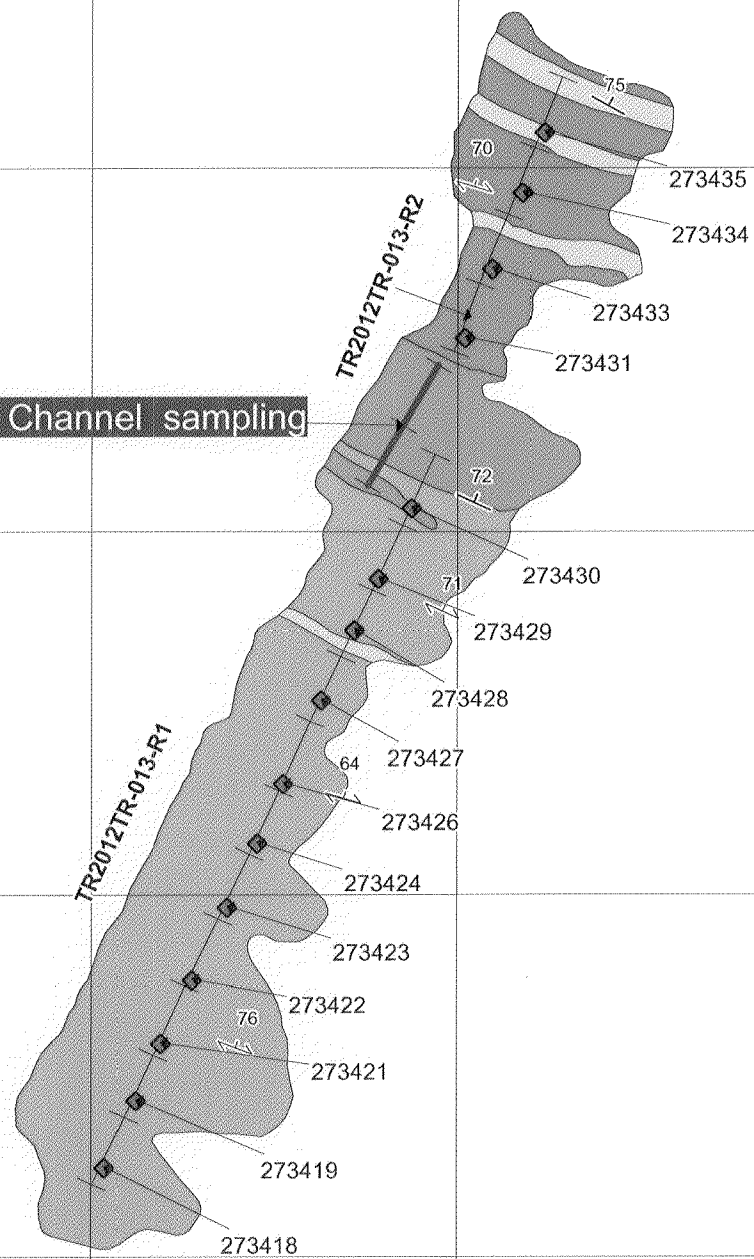
**LEGEND**



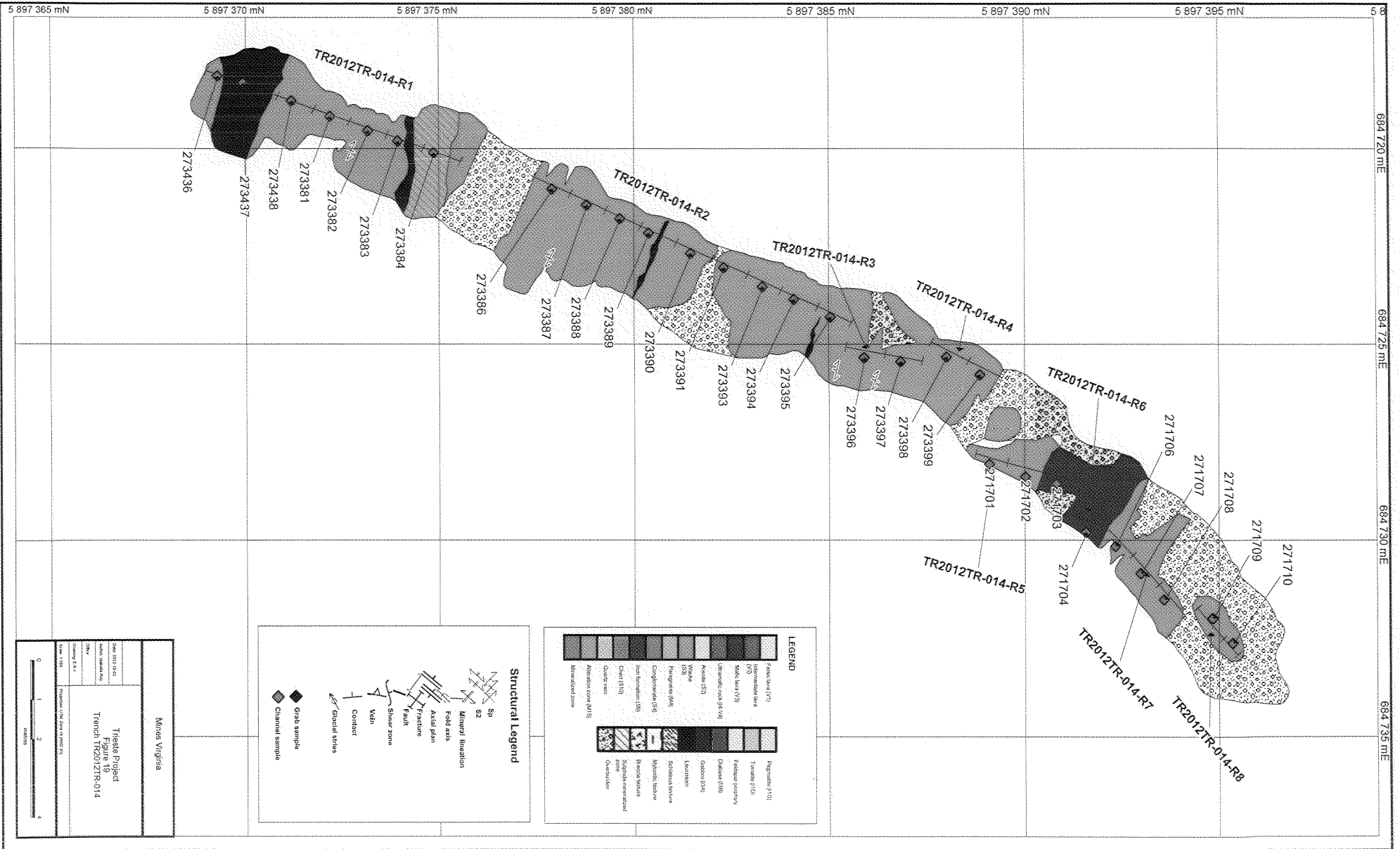
**Structural Legend**



**2009 Channel sampling**



Mines Virginia	
Trieste Project Figure 18 Trench TR2012TR-013	
Date: 2012-10-03	
Author: Isabelle Roy	
Office:	
Drawing: E.R.V.	
Scale: 1:100	Projection: UTM Zone 18 (NAD 83)



**LEGEND**

<ul style="list-style-type: none"> <li>Fossiliferous (F1)</li> <li>Unit 1 (U1)</li> <li>Unit 2 (U2)</li> <li>Unit 3 (U3)</li> <li>Unit 4 (U4)</li> <li>Unit 5 (U5)</li> <li>Unit 6 (U6)</li> <li>Unit 7 (U7)</li> <li>Unit 8 (U8)</li> <li>Unit 9 (U9)</li> <li>Unit 10 (U10)</li> <li>Unit 11 (U11)</li> <li>Unit 12 (U12)</li> <li>Unit 13 (U13)</li> <li>Unit 14 (U14)</li> <li>Unit 15 (U15)</li> <li>Unit 16 (U16)</li> <li>Unit 17 (U17)</li> <li>Unit 18 (U18)</li> <li>Unit 19 (U19)</li> <li>Unit 20 (U20)</li> <li>Unit 21 (U21)</li> <li>Unit 22 (U22)</li> <li>Unit 23 (U23)</li> <li>Unit 24 (U24)</li> <li>Unit 25 (U25)</li> <li>Unit 26 (U26)</li> <li>Unit 27 (U27)</li> <li>Unit 28 (U28)</li> <li>Unit 29 (U29)</li> <li>Unit 30 (U30)</li> <li>Unit 31 (U31)</li> <li>Unit 32 (U32)</li> <li>Unit 33 (U33)</li> <li>Unit 34 (U34)</li> <li>Unit 35 (U35)</li> <li>Unit 36 (U36)</li> <li>Unit 37 (U37)</li> <li>Unit 38 (U38)</li> <li>Unit 39 (U39)</li> <li>Unit 40 (U40)</li> <li>Unit 41 (U41)</li> <li>Unit 42 (U42)</li> <li>Unit 43 (U43)</li> <li>Unit 44 (U44)</li> <li>Unit 45 (U45)</li> <li>Unit 46 (U46)</li> <li>Unit 47 (U47)</li> <li>Unit 48 (U48)</li> <li>Unit 49 (U49)</li> <li>Unit 50 (U50)</li> <li>Unit 51 (U51)</li> <li>Unit 52 (U52)</li> <li>Unit 53 (U53)</li> <li>Unit 54 (U54)</li> <li>Unit 55 (U55)</li> <li>Unit 56 (U56)</li> <li>Unit 57 (U57)</li> <li>Unit 58 (U58)</li> <li>Unit 59 (U59)</li> <li>Unit 60 (U60)</li> <li>Unit 61 (U61)</li> <li>Unit 62 (U62)</li> <li>Unit 63 (U63)</li> <li>Unit 64 (U64)</li> <li>Unit 65 (U65)</li> <li>Unit 66 (U66)</li> <li>Unit 67 (U67)</li> <li>Unit 68 (U68)</li> <li>Unit 69 (U69)</li> <li>Unit 70 (U70)</li> <li>Unit 71 (U71)</li> <li>Unit 72 (U72)</li> <li>Unit 73 (U73)</li> <li>Unit 74 (U74)</li> <li>Unit 75 (U75)</li> <li>Unit 76 (U76)</li> <li>Unit 77 (U77)</li> <li>Unit 78 (U78)</li> <li>Unit 79 (U79)</li> <li>Unit 80 (U80)</li> <li>Unit 81 (U81)</li> <li>Unit 82 (U82)</li> <li>Unit 83 (U83)</li> <li>Unit 84 (U84)</li> <li>Unit 85 (U85)</li> <li>Unit 86 (U86)</li> <li>Unit 87 (U87)</li> <li>Unit 88 (U88)</li> <li>Unit 89 (U89)</li> <li>Unit 90 (U90)</li> <li>Unit 91 (U91)</li> <li>Unit 92 (U92)</li> <li>Unit 93 (U93)</li> <li>Unit 94 (U94)</li> <li>Unit 95 (U95)</li> <li>Unit 96 (U96)</li> <li>Unit 97 (U97)</li> <li>Unit 98 (U98)</li> <li>Unit 99 (U99)</li> <li>Unit 100 (U100)</li> </ul>	<ul style="list-style-type: none"> <li>Unit 101 (U101)</li> <li>Unit 102 (U102)</li> <li>Unit 103 (U103)</li> <li>Unit 104 (U104)</li> <li>Unit 105 (U105)</li> <li>Unit 106 (U106)</li> <li>Unit 107 (U107)</li> <li>Unit 108 (U108)</li> <li>Unit 109 (U109)</li> <li>Unit 110 (U110)</li> <li>Unit 111 (U111)</li> <li>Unit 112 (U112)</li> <li>Unit 113 (U113)</li> <li>Unit 114 (U114)</li> <li>Unit 115 (U115)</li> <li>Unit 116 (U116)</li> <li>Unit 117 (U117)</li> <li>Unit 118 (U118)</li> <li>Unit 119 (U119)</li> <li>Unit 120 (U120)</li> <li>Unit 121 (U121)</li> <li>Unit 122 (U122)</li> <li>Unit 123 (U123)</li> <li>Unit 124 (U124)</li> <li>Unit 125 (U125)</li> <li>Unit 126 (U126)</li> <li>Unit 127 (U127)</li> <li>Unit 128 (U128)</li> <li>Unit 129 (U129)</li> <li>Unit 130 (U130)</li> <li>Unit 131 (U131)</li> <li>Unit 132 (U132)</li> <li>Unit 133 (U133)</li> <li>Unit 134 (U134)</li> <li>Unit 135 (U135)</li> <li>Unit 136 (U136)</li> <li>Unit 137 (U137)</li> <li>Unit 138 (U138)</li> <li>Unit 139 (U139)</li> <li>Unit 140 (U140)</li> <li>Unit 141 (U141)</li> <li>Unit 142 (U142)</li> <li>Unit 143 (U143)</li> <li>Unit 144 (U144)</li> <li>Unit 145 (U145)</li> <li>Unit 146 (U146)</li> <li>Unit 147 (U147)</li> <li>Unit 148 (U148)</li> <li>Unit 149 (U149)</li> <li>Unit 150 (U150)</li> </ul>
--	--

**Structural Legend**

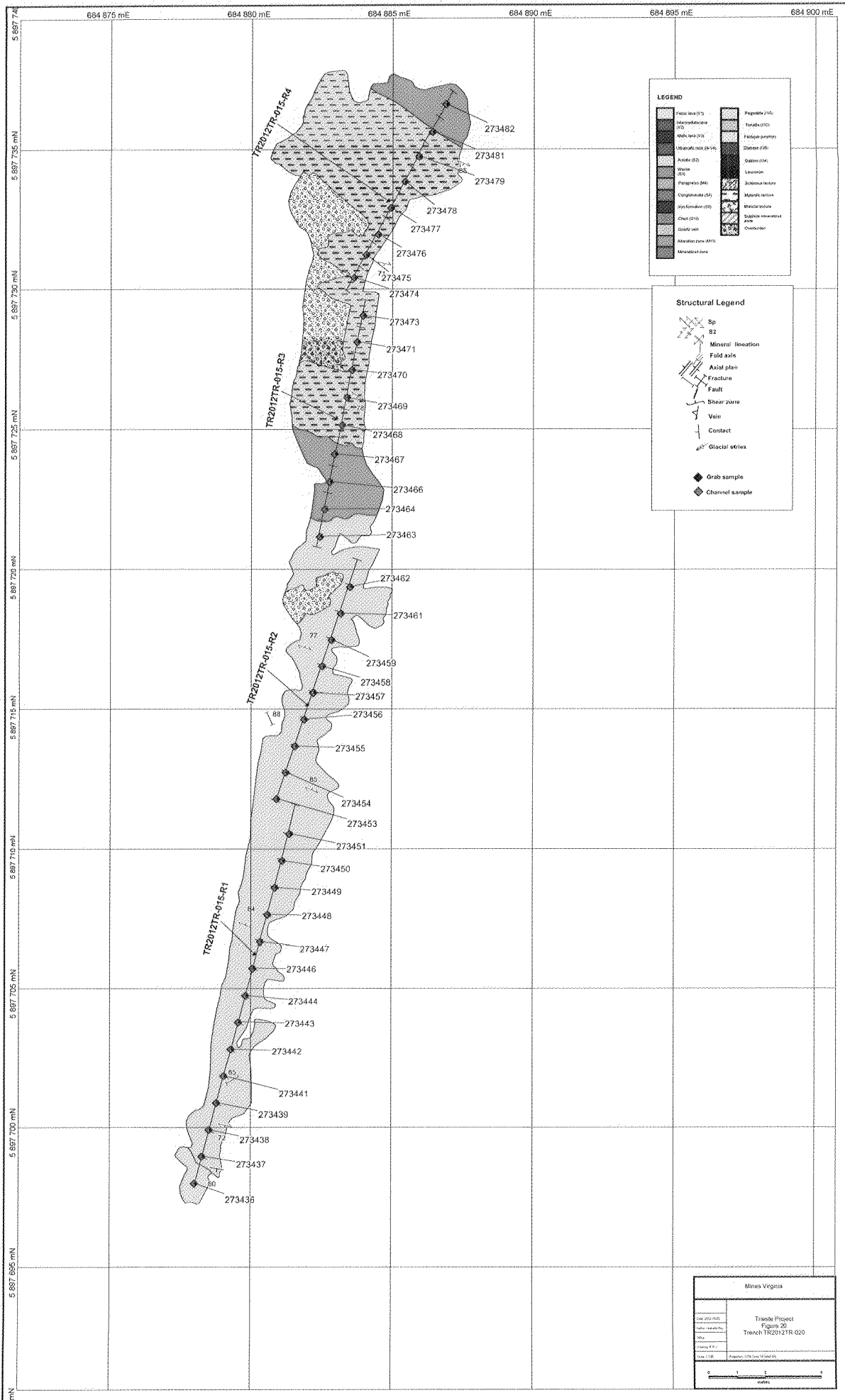
- Sp 82
- Mineral liberation
- Fold axis
- Axial plan
- Fracture
- Fault
- Shear zone
- Valp
- Contact
- Glacial strias
- Grub sample
- Chemical sample

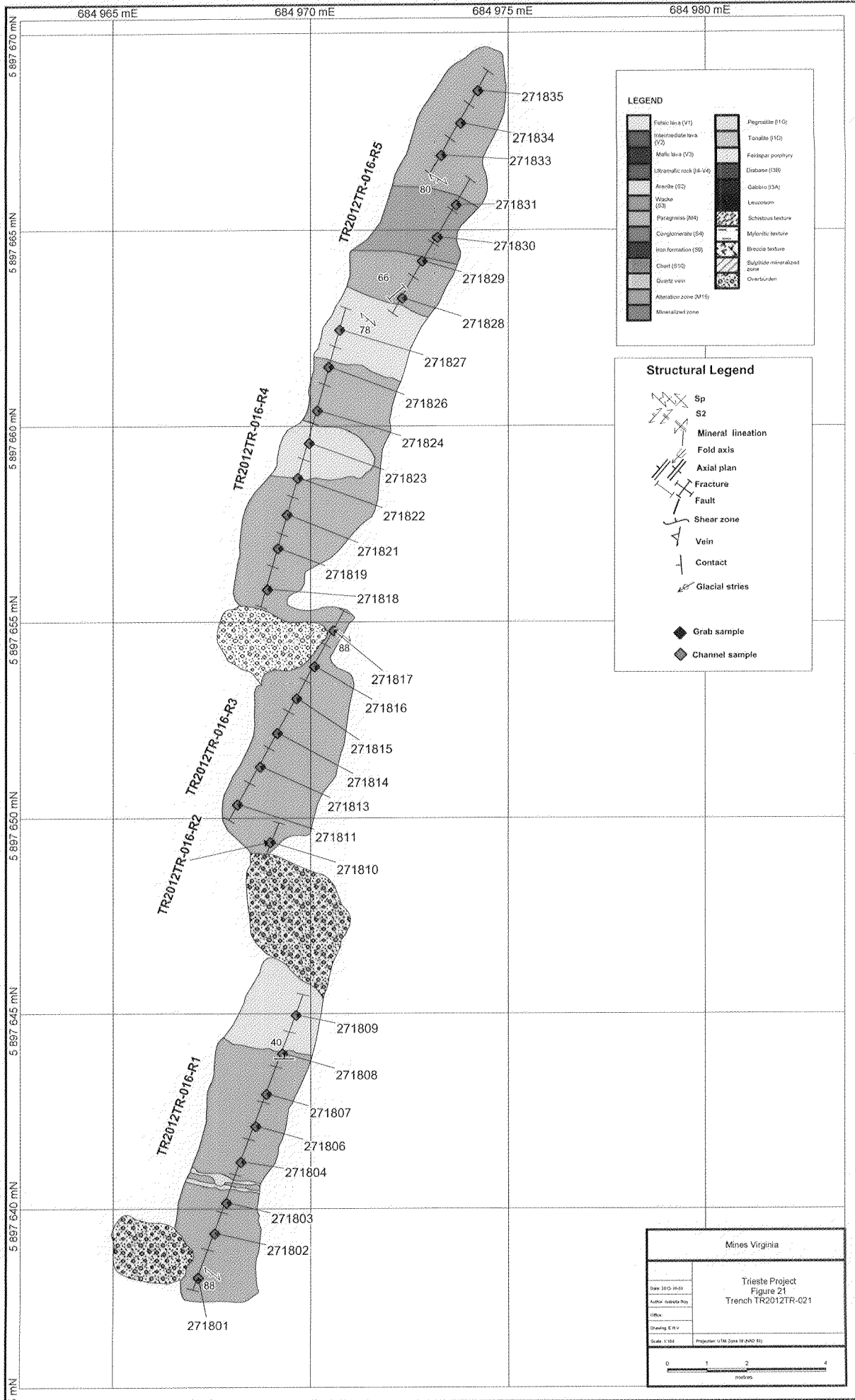
Map of Minnesota Virginia

Traverse Project  
Figure 19  
Trench TR2012TR-014

Scale: 1:1000  
Horizontal Date: 10/20/2011  
Vertical Date: 10/20/2011

0 1 2  
Feet





**LEGEND**

Mafic lava (V1)	Pegmatite (P10)
Intermediate lava (V2)	Tonalite (T10)
Mafic lava (V3)	Feldspar porphyry
Ultramafic rock (U1-V4)	Diorase (D3B)
Amphibolite (S2)	Gabbro (G3A)
Soapstone (S3)	Leucosome
Pyroxenite (M4)	Schistosity texture
Conglomerate (S4)	Mylonitic texture
Non formation (S5)	Breccia texture
Chert (S10)	Sulphide mineralized zone
Quartz vein	Overburden
Alteration zone (M15)	
Mineralized zone	

**Structural Legend**

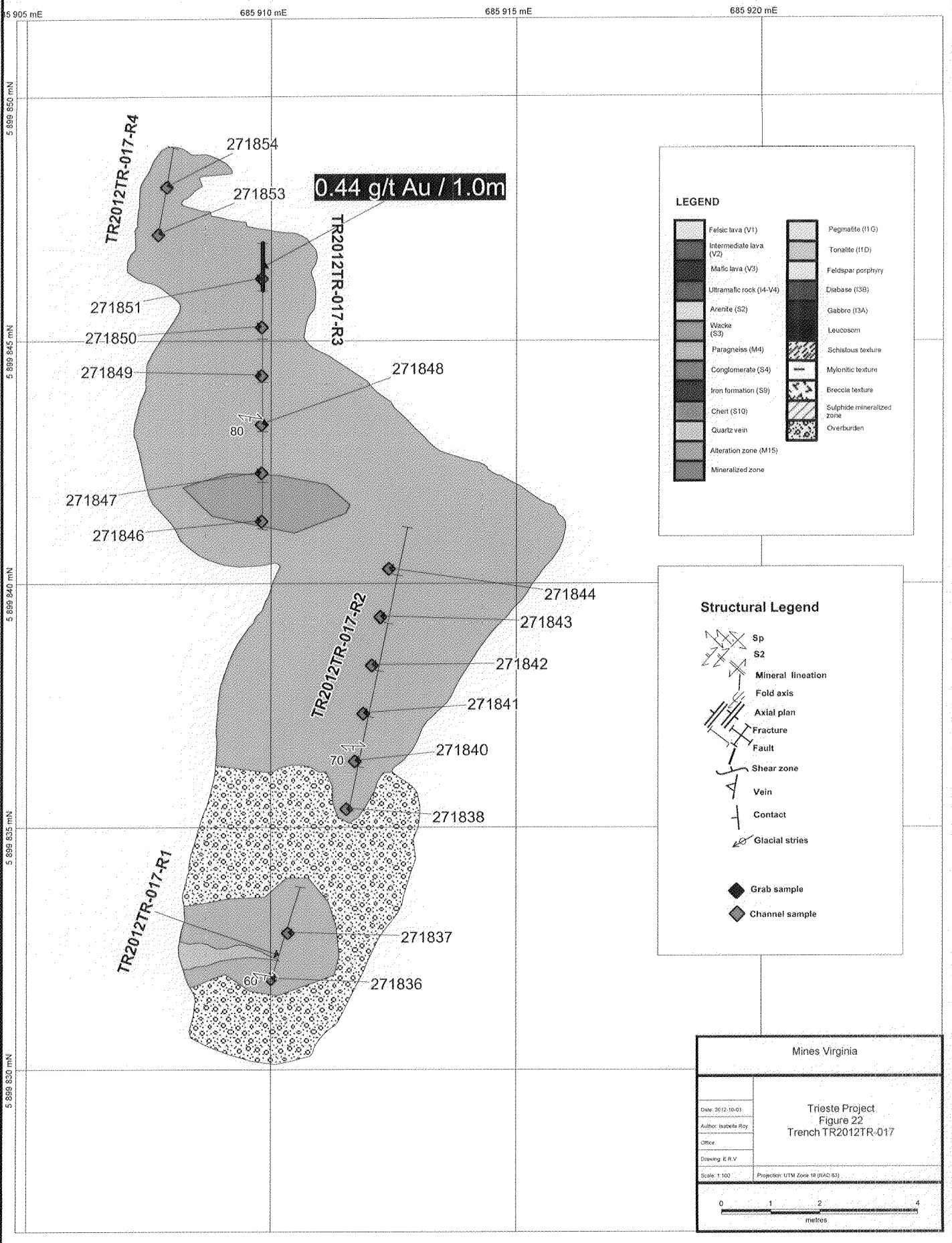
Sp	Mineral lineation
S2	Fold axis
	Axial plan
	Fracture
	Fault
	Shear zone
	Vein
	Contact
	Glacial stries
◆	Grab sample
◇	Channel sample

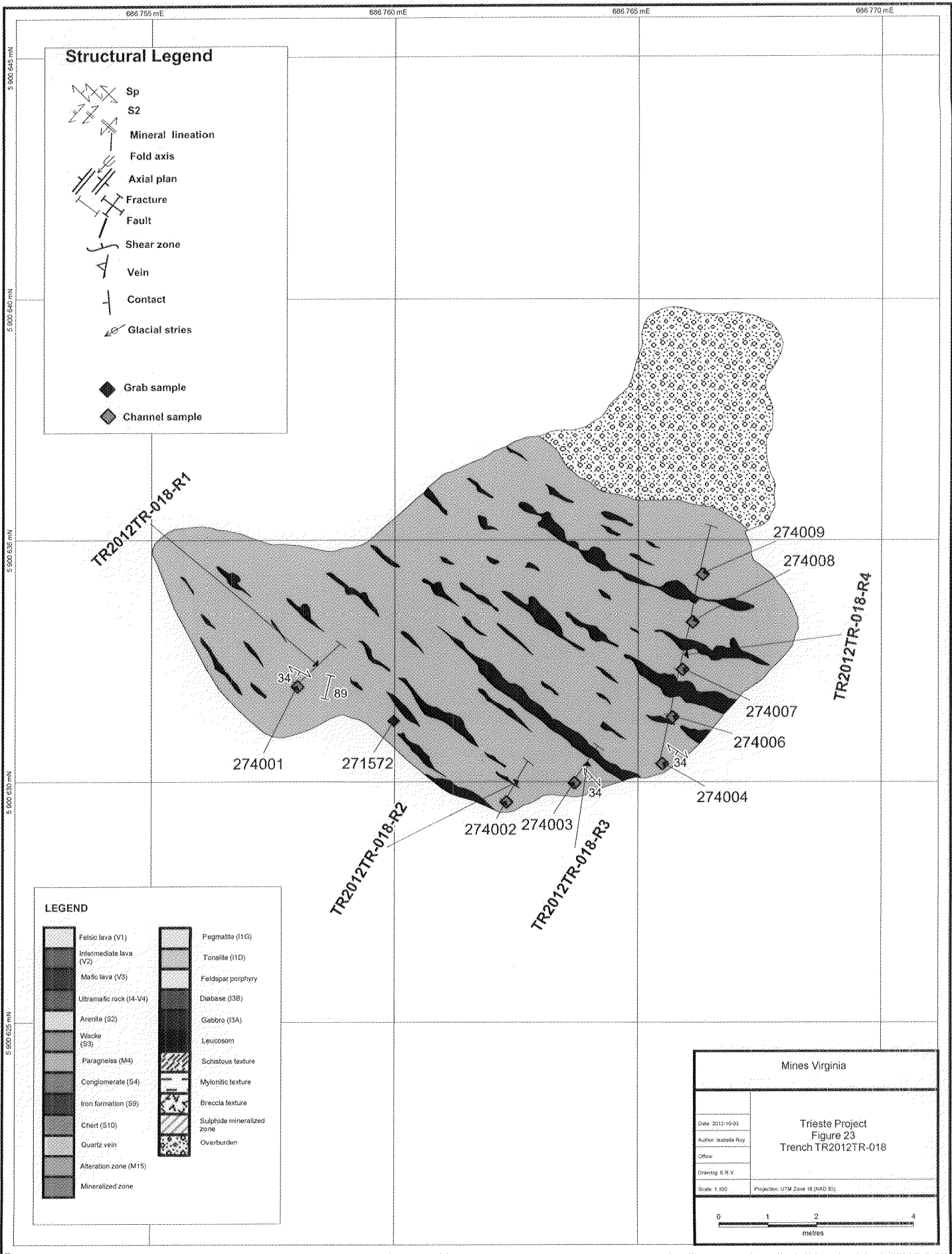
Mines Virginia

Trieste Project  
Figure 21  
Trench TR2012TR-021

Scale: 1:500 Projection: UTM Zone 18NAD 83

0 1 2 4  
meters





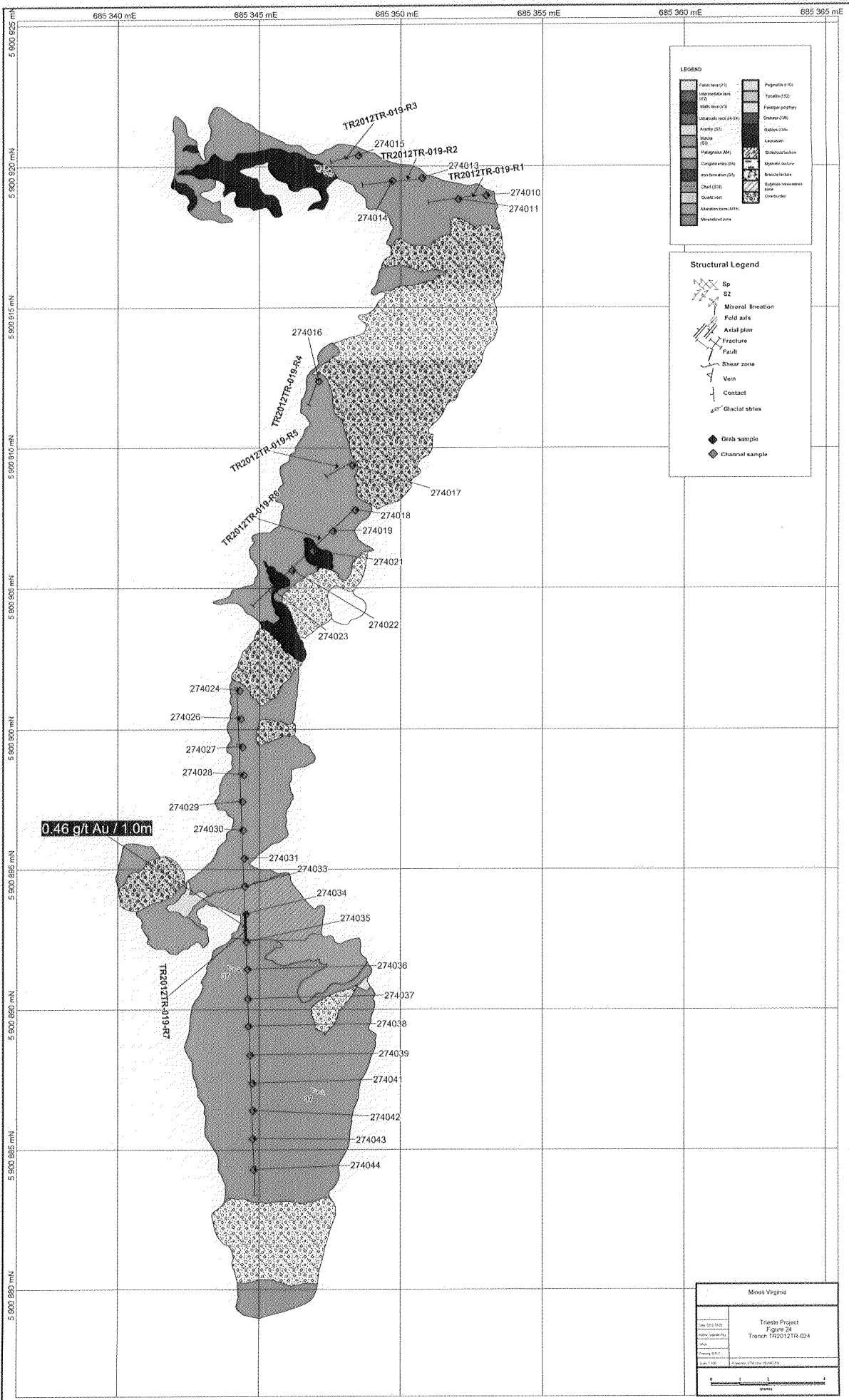
### Structural Legend

- Sp
- S2
- Mineral lineation
- Fold axis
- Axial plan
- Fracture
- Fault
- Shear zone
- Vein
- Contact
- Glacial stries
- ◆ Grab sample
- ◇ Channel sample

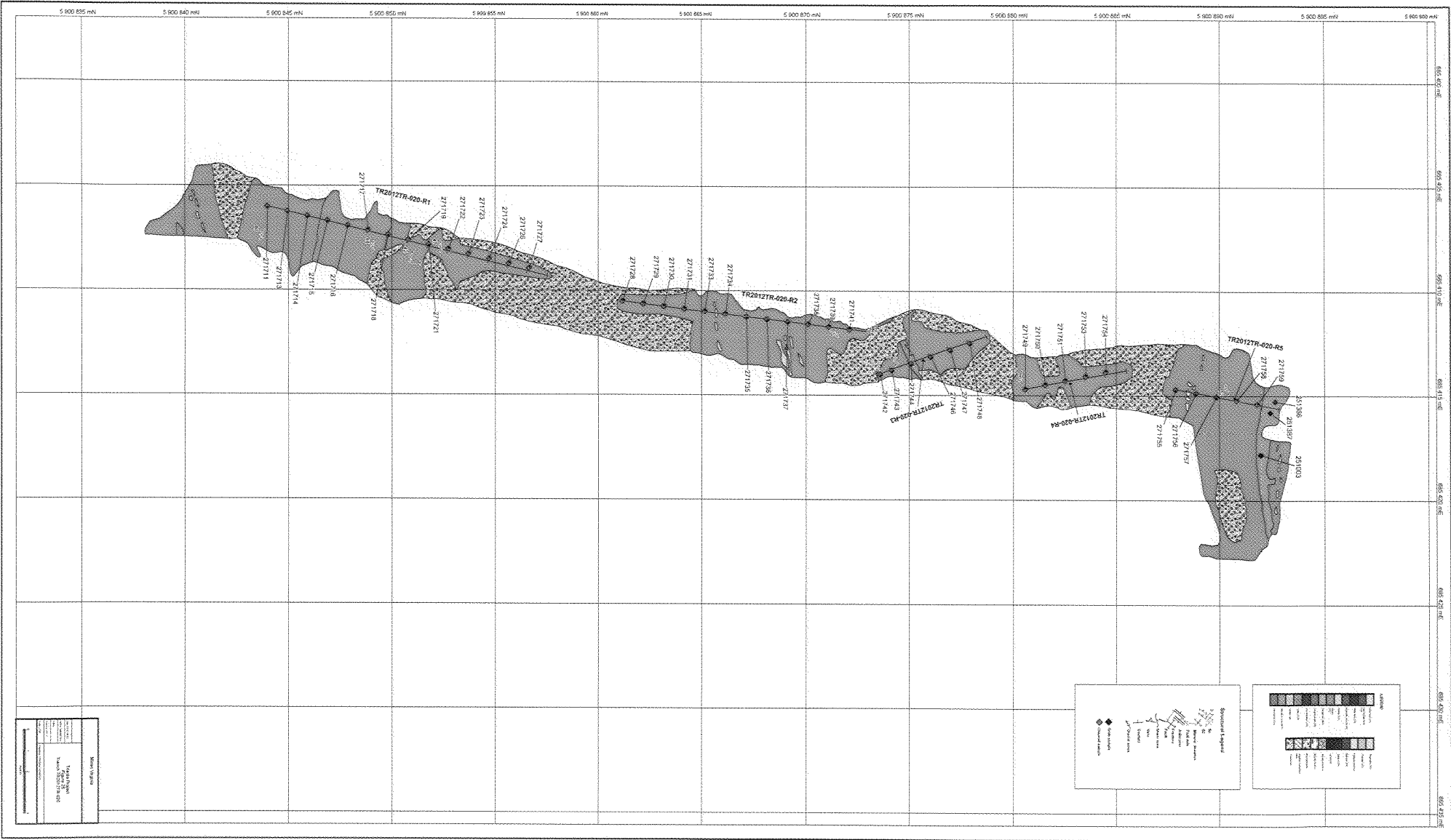
### LEGEND

<ul style="list-style-type: none"> <li>Felsic lava (V1)</li> <li>Intermediate lava (V2)</li> <li>Mafic lava (V3)</li> <li>Ultramafic rock (I4-V4)</li> <li>Arenite (S2)</li> <li>Wacke (S3)</li> <li>Paragneiss (M4)</li> <li>Conglomerate (S4)</li> <li>Iron formation (S9)</li> <li>Chert (S10)</li> <li>Quartz vein</li> <li>Alteration zone (M15)</li> <li>Mineralized zone</li> </ul>	<ul style="list-style-type: none"> <li>Pegmatite (I1G)</li> <li>Tonalite (I1D)</li> <li>Feldspar porphyry</li> <li>Diabase (I3B)</li> <li>Gabbro (I3A)</li> <li>Leucosom</li> <li>Schistose texture</li> <li>Mylonitic texture</li> <li>Breccia texture</li> <li>Sulphide mineralized zone</li> <li>Overburden</li> </ul>
--	---

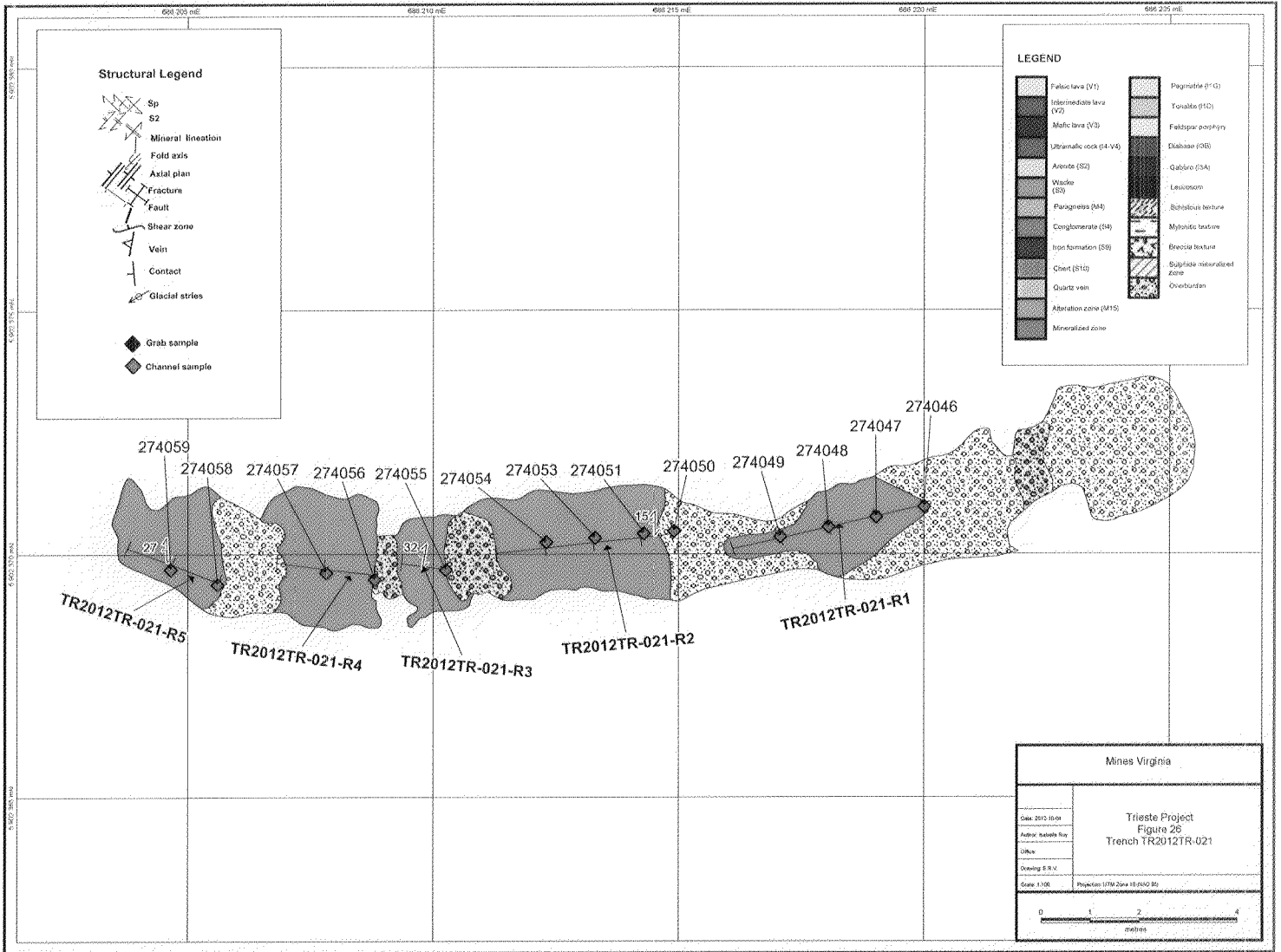
Mines Virginia	
Date: 2012-10-09 Author: Isabelle Roy Office: Drawing: C.R.V. Scale: 1:100 Projection: UTM Zone 18 (NAD 83)	<b>Trieste Project</b> <b>Figure 23</b> <b>Trench TR2012TR-018</b>

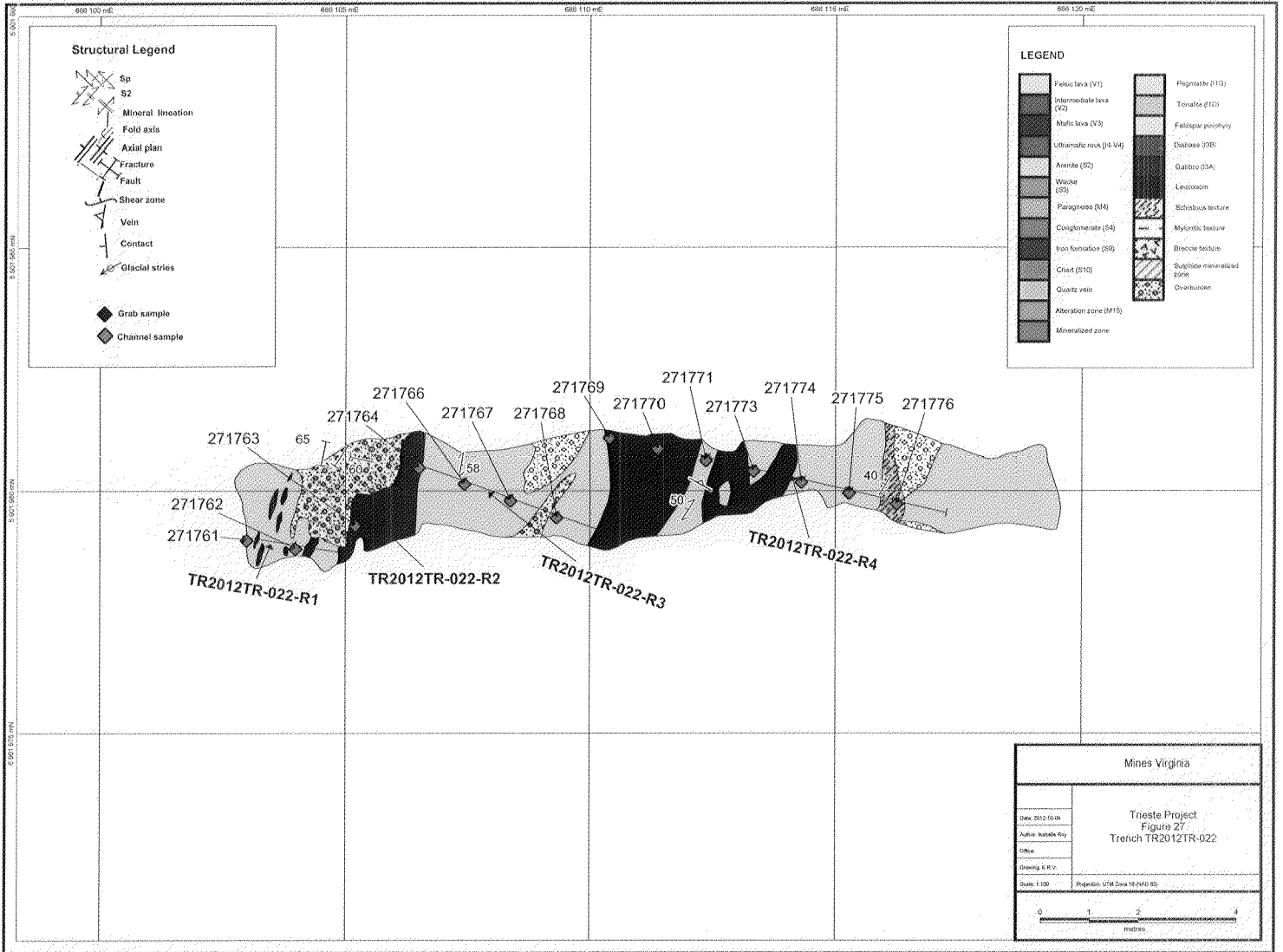


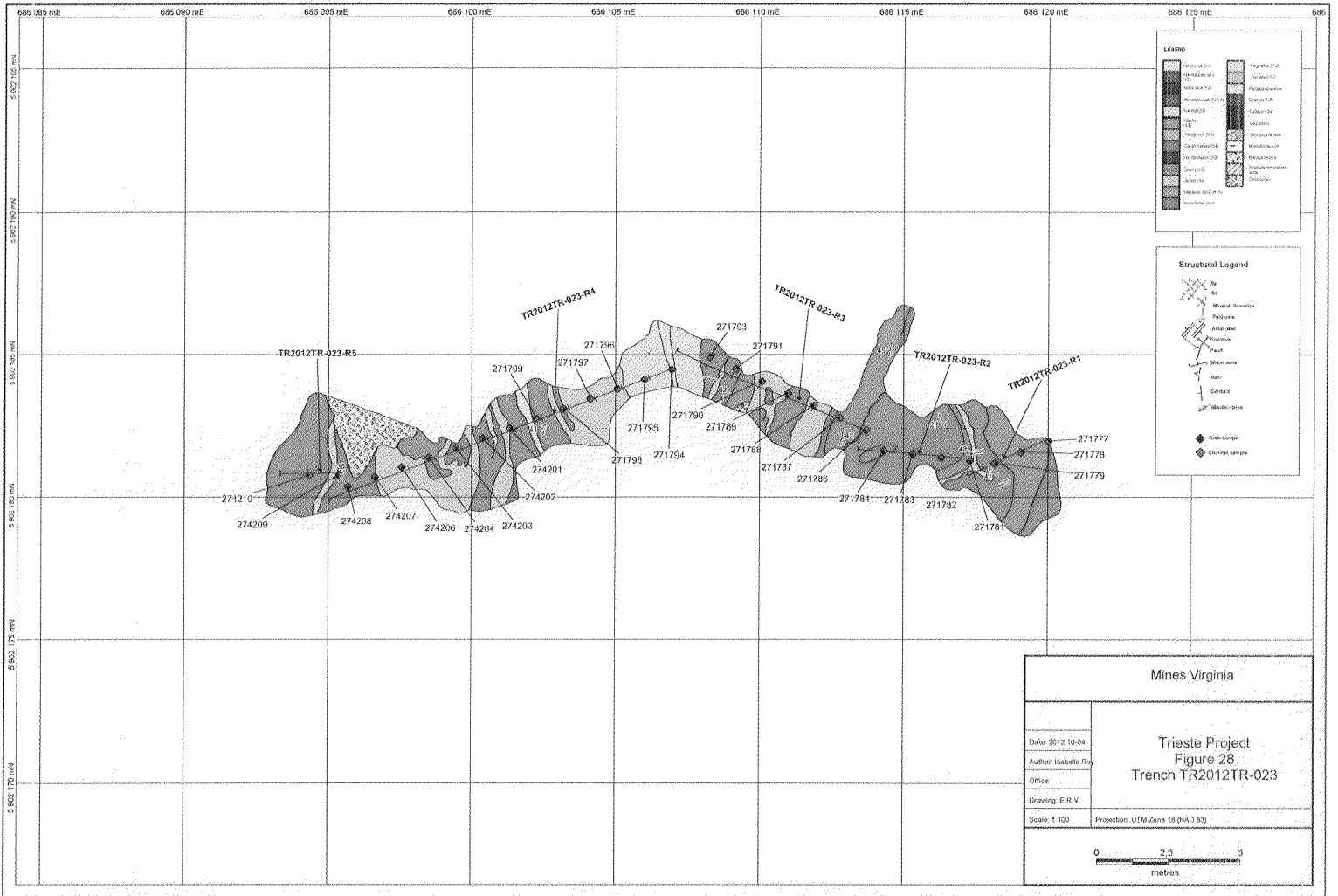




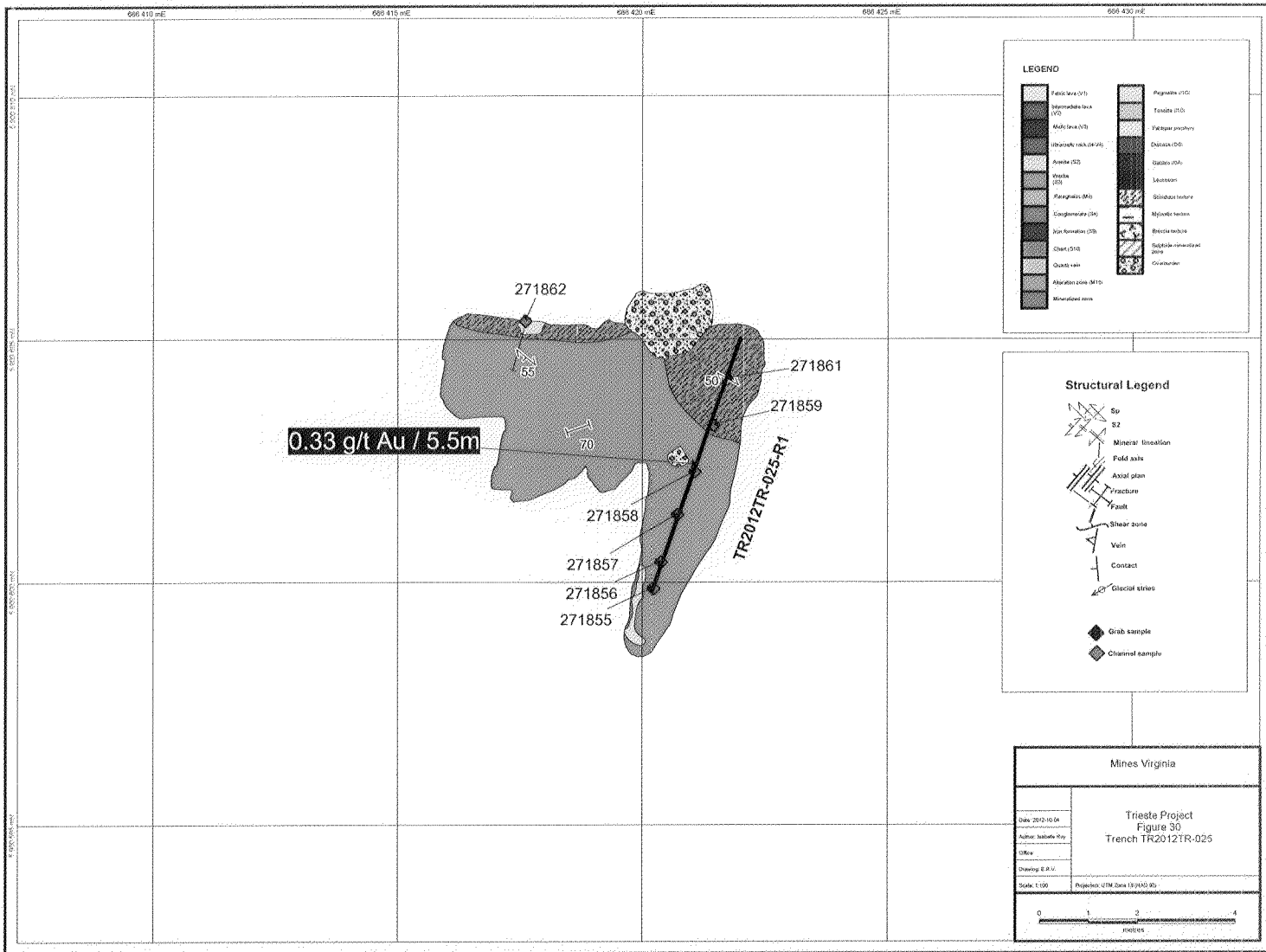
Sheet Name  
 Title  
 Date  
 Author  
 Checker  
 Approver



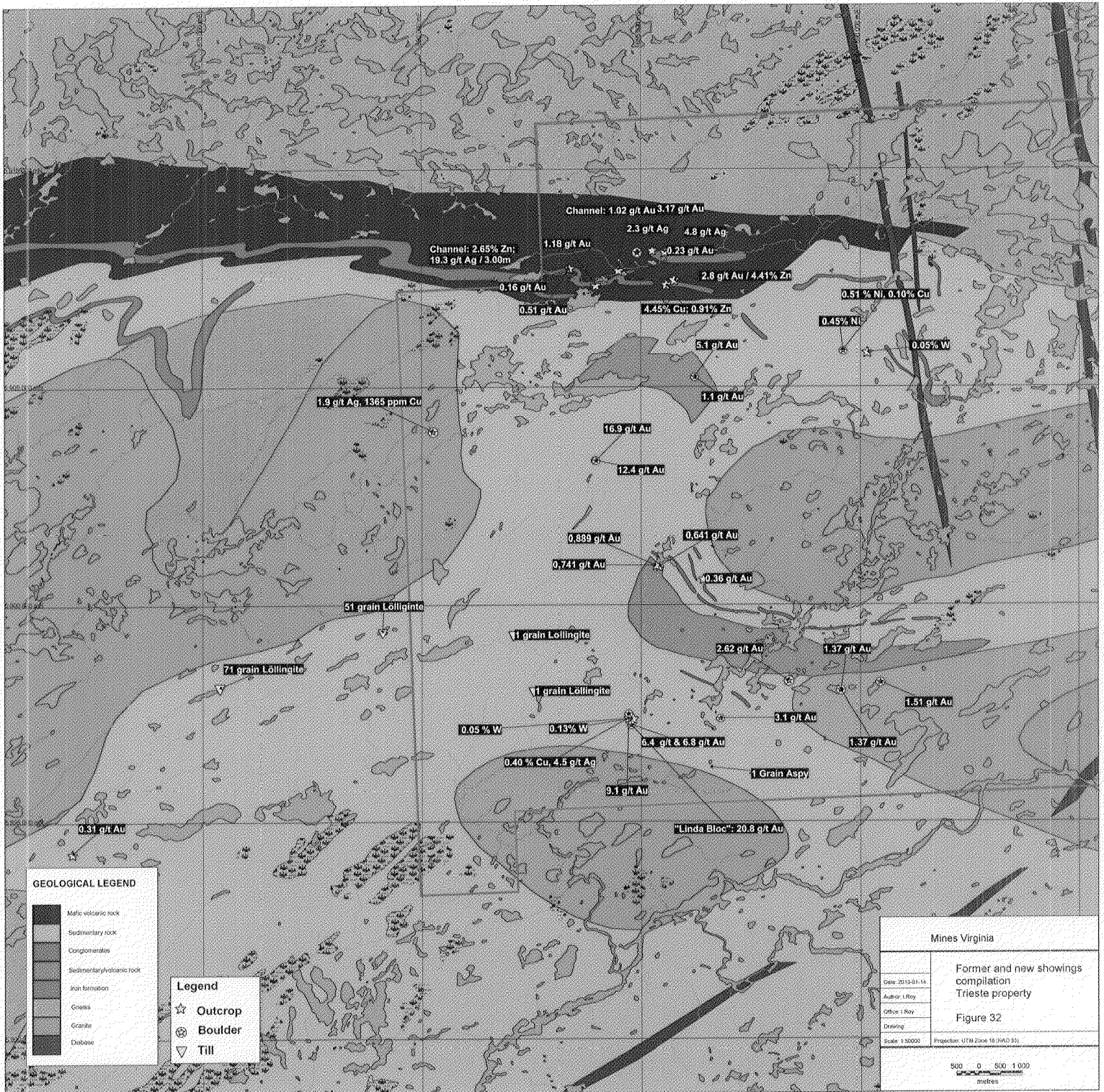














APPENDIX 1. CLAIMS LIST, TRIESTE PROJECT

**INFORMATION AVAILABLE UPON REQUEST  
SUBMITTED TO VIRGINIA MINES INC.**

**[info@minesvirginia.com](mailto:info@minesvirginia.com)**

**Toll free number: 800 476-1853**

## APPENDIX 2. LIST OF ABBREVIATIONS

Source	Domaine	Code	Signification	Référence
VIA	Alteration	ALB	Albitisation	
VIA	Alteration	CAR	Carbonatation	
VIA	Alteration	CHL	Chloritisation	
VIA	Alteration	FRE	Fresh-Unaltered	
VIA	Alteration	HEM	Hematization	
VIA	Alteration	KSP	Potassic Alt	
VIA	Alteration	SER	Sericitisation	
VIA	Alteration	SIL	Silicification	
VIA	Alteration	SUL	Sulfurisation	
VIA	Contrôle	CTC	... associé à un contact	
VIA	Contrôle	CTL	... associé au litage	
VIA	Contrôle	BFR	... bordure de fragments	
VIA	Contrôle	BCO	... bordures de coussins	
VIA	Contrôle	PSC	... dans le plan de la schistosité	
VIA	Contrôle	ZCI	... dans une zone de cisaillement	
VIA	Contrôle	FRP	... en plaquage de fracture	
VIA	Contrôle	VEI	... en veines et veinules	
VIA	Contrôle	GTE	... grid texture	
VIA	Contrôle	PEN	... pénétrant - pervasive	
VIA	Contrôle	RAM	... remplissage d'amygdules	
VIA	Contrôle	STO	... stockwerk	
VIA	Contrôle	VAR	... variable - mottled	
VIA	Contrôle	ZAN	... zones anastomosée	
SIGEOM	Minéralisation	Ag	Argent natif (visible)	PRO2000-08
SIGEOM	Minéralisation	AS	Arsénopyrite	PRO2000-08
SIGEOM	Minéralisation	Bi	Bismuth	PRO2000-08
SIGEOM	Minéralisation	BM	Bismuthinite	PRO2000-08
SIGEOM	Minéralisation	BS	Bismutite	PRO2000-08
SIGEOM	Minéralisation	BN	Bornite	PRO2000-08
SIGEOM	Minéralisation	BG	Boulangerite	PRO2000-08
SIGEOM	Minéralisation	WO	Bourmonite	PRO2000-08
SIGEOM	Minéralisation	CT	Chalcocite(ne)	PRO2000-08
SIGEOM	Minéralisation	CP	Chalcopyrite	PRO2000-08
SIGEOM	Minéralisation	CM	Chromite	PRO2000-08
SIGEOM	Minéralisation	CE	Cobaltite	PRO2000-08
SIGEOM	Minéralisation	NB	Columbite/Niobite	PRO2000-08
SIGEOM	Minéralisation	TO	Columbo-tantalite	PRO2000-08
SIGEOM	Minéralisation	CV	Covellite	PRO2000-08
SIGEOM	Minéralisation	CF	Cubanite	PRO2000-08
SIGEOM	Minéralisation	Cu	Cuivre natif (visible)	PRO2000-08
SIGEOM	Minéralisation	CU	Cuprite	PRO2000-08
SIGEOM	Minéralisation	DG	Digenite	PRO2000-08
SIGEOM	Minéralisation	EM	Électrum	PRO2000-08
SIGEOM	Minéralisation	EG	Enargite	PRO2000-08
SIGEOM	Minéralisation	Fe	Fer	PRO2000-08
SIGEOM	Minéralisation	FM	Ferrimolybdite	PRO2000-08
SIGEOM	Minéralisation	GH	Gahnite	PRO2000-08
SIGEOM	Minéralisation	GL	Galène	PRO2000-08
SIGEOM	Minéralisation	GO	Goethite	PRO2000-08
SIGEOM	Minéralisation	HM	Hématite	PRO2000-08
SIGEOM	Minéralisation	IM	Ilménite	PRO2000-08
SIGEOM	Minéralisation	LM	Limonite	PRO2000-08
SIGEOM	Minéralisation	LG	Loellingite	PRO2000-08
SIGEOM	Minéralisation	MG	Magnétite	PRO2000-08
SIGEOM	Minéralisation	MC	Malachite	PRO2000-08
SIGEOM	Minéralisation	MS	Marcasite	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralisation	MK	Merenskyite	PRO2000-08
SIGEOM	Minéralisation	NS	Millerite	PRO2000-08
SIGEOM	Minéralisation	OP	Minéraux opaques	PRO2000-08
SIGEOM	Minéralisation	MR	Minéraux radioactifs	PRO2000-08
SIGEOM	Minéralisation	MO	Molybdénite	PRO2000-08
SIGEOM	Minéralisation	MB	Molybdite(dine)	PRO2000-08
SIGEOM	Minéralisation	UN	Nickeline	PRO2000-08
SIGEOM	Minéralisation	VG	Or natif (visible)	
SIGEOM	Minéralisation	OF	Oxyde de fer	PRO2000-08
SIGEOM	Minéralisation	PB	Pechblende	PRO2000-08
SIGEOM	Minéralisation	PD	Pentlandite	PRO2000-08
SIGEOM	Minéralisation	PY	Pyrite	PRO2000-08
SIGEOM	Minéralisation	PM	Pyrochlore	PRO2000-08
SIGEOM	Minéralisation	PO	Pyrrhotine	PRO2000-08
SIGEOM	Minéralisation	SW	Scheelite	PRO2000-08
SIGEOM	Minéralisation	SG	Sélénite	PRO2000-08
SIGEOM	Minéralisation	Se	Sélénium	PRO2000-08
SIGEOM	Minéralisation	S	Souffre	PRO2000-08
SIGEOM	Minéralisation	HS	Spécularite	PRO2000-08
SIGEOM	Minéralisation	SP	Sphalérite	PRO2000-08
SIGEOM	Minéralisation	SB	Stibine/Stibnite	PRO2000-08
SIGEOM	Minéralisation	HD	Stilbite (Heulandite)	PRO2000-08
SIGEOM	Minéralisation	SF	Sulfures	PRO2000-08
SIGEOM	Minéralisation	OT	Tétraferroplatine	PRO2000-08
SIGEOM	Minéralisation	TH	Tétrahédrite	PRO2000-08
SIGEOM	Minéralisation	TR	Thorianite	PRO2000-08
SIGEOM	Minéralisation	TI	Thorite	PRO2000-08
SIGEOM	Minéralisation	NM	Titanomagnétite	PRO2000-08
SIGEOM	Minéralisation	UR	Uraninite	PRO2000-08
SIGEOM	Minéralisation	UP	Uranophane	PRO2000-08
SIGEOM	Minéralisation	UI	Uranopilite	PRO2000-08
SIGEOM	Minéralisation	UH	Uranothorianite	PRO2000-08
SIGEOM	Minéralisation	UT	Uranothorite	PRO2000-08
SIGEOM	Minéralisation	GU	Uvarovite	PRO2000-08
SIGEOM	Minéralisation	WF	Wolframite	PRO2000-08
SIGEOM	Minéralogie	AV	Acanthite	PRO2000-08
SIGEOM	Minéralogie	AC	Actinote	PRO2000-08
SIGEOM	Minéralogie	EC	Aeschynite - Y	PRO2000-08
SIGEOM	Minéralogie	AE	Agate	PRO2000-08
SIGEOM	Minéralogie	BP	Aikinite	PRO2000-08
SIGEOM	Minéralogie	KA	Akermanite	PRO2000-08
SIGEOM	Minéralogie	AB	Albite	PRO2000-08
SIGEOM	Minéralogie	AL	Allanite	PRO2000-08
SIGEOM	Minéralogie	TP	Altaïte	PRO2000-08
SIGEOM	Minéralogie	AI	Amazonite	PRO2000-08
SIGEOM	Minéralogie	AH	Améthyste	PRO2000-08
SIGEOM	Minéralogie	AO	Amiante (Asbestos)	PRO2000-08
SIGEOM	Minéralogie	AM	Amphibole	PRO2000-08
SIGEOM	Minéralogie	NT	Anatase	PRO2000-08
SIGEOM	Minéralogie	AD	Andalousite	PRO2000-08
SIGEOM	Minéralogie	AA	Andésine	PRO2000-08
SIGEOM	Minéralogie	GD	Andradite	PRO2000-08
SIGEOM	Minéralogie	LR	Anglésite	PRO2000-08
SIGEOM	Minéralogie	AY	Anhydrite	PRO2000-08
SIGEOM	Minéralogie	AK	Ankérite	PRO2000-08
SIGEOM	Minéralogie	NG	Annabergite	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralogie	AN	Anorthite	PRO2000-08
SIGEOM	Minéralogie	AT	Anthophyllite	PRO2000-08
SIGEOM	Minéralogie	Sb	Antimoine	PRO2000-08
SIGEOM	Minéralogie	AP	Apatite	PRO2000-08
SIGEOM	Minéralogie	OA	Aragonite	PRO2000-08
SIGEOM	Minéralogie	AG	Augite	PRO2000-08
SIGEOM	Minéralogie	AU	Autunite	PRO2000-08
SIGEOM	Minéralogie	NF	Awaruite	PRO2000-08
SIGEOM	Minéralogie	AX	Axinite	PRO2000-08
SIGEOM	Minéralogie	AZ	Azurite	PRO2000-08
SIGEOM	Minéralogie	BR	Barytine	PRO2000-08
SIGEOM	Minéralogie	BA	Bastnaesite	PRO2000-08
SIGEOM	Minéralogie	BL	Béryl	PRO2000-08
SIGEOM	Minéralogie	BF	Bétafite	PRO2000-08
SIGEOM	Minéralogie	BO	Biotite	PRO2000-08
SIGEOM	Minéralogie	BI	Birnessite	PRO2000-08
SIGEOM	Minéralogie	BD	Boltwoodite	PRO2000-08
SIGEOM	Minéralogie	DI	Braggite	PRO2000-08
SIGEOM	Minéralogie	BE	Brannerite	PRO2000-08
SIGEOM	Minéralogie	BV	Bravoite	PRO2000-08
SIGEOM	Minéralogie	BU	Britholite	PRO2000-08
SIGEOM	Minéralogie	BH	Brochantite	PRO2000-08
SIGEOM	Minéralogie	BC	Brucite	PRO2000-08
SIGEOM	Minéralogie	BT	Bytownite	PRO2000-08
SIGEOM	Minéralogie	CA	Calaverite	PRO2000-08
SIGEOM	Minéralogie	CQ	Calcédoine	PRO2000-08
SIGEOM	Minéralogie	CC	Calcite	PRO2000-08
SIGEOM	Minéralogie	CB	Carbonate	PRO2000-08
SIGEOM	Minéralogie	CJ	Cattierite	PRO2000-08
SIGEOM	Minéralogie	WD	Céruosite	PRO2000-08
SIGEOM	Minéralogie	OS	Cervantite	PRO2000-08
SIGEOM	Minéralogie	ZB	Chabazite(Chabasite)	PRO2000-08
SIGEOM	Minéralogie	DN	Chamosite	PRO2000-08
SIGEOM	Minéralogie	CH	Chert	PRO2000-08
SIGEOM	Minéralogie	CO	Chloanthite	PRO2000-08
SIGEOM	Minéralogie	CL	Chlorite	PRO2000-08
SIGEOM	Minéralogie	CR	Chloritoïde	PRO2000-08
SIGEOM	Minéralogie	HR	Chondrodite	PRO2000-08
SIGEOM	Minéralogie	CY	Chrysocolle	PRO2000-08
SIGEOM	Minéralogie	CS	Chrysotile	PRO2000-08
SIGEOM	Minéralogie	UC	Clarkeite	PRO2000-08
SIGEOM	Minéralogie	CI	Clevelandite	PRO2000-08
SIGEOM	Minéralogie	HO	Clinohypersthène	PRO2000-08
SIGEOM	Minéralogie	CX	Clinopyroxène	PRO2000-08
SIGEOM	Minéralogie	CZ	Clinozoïsite	PRO2000-08
SIGEOM	Minéralogie	UB	Coffinite	PRO2000-08
SIGEOM	Minéralogie	OO	Coopérite	PRO2000-08
SIGEOM	Minéralogie	CD	Cordiérite	PRO2000-08
SIGEOM	Minéralogie	CN	Corindon	PRO2000-08
SIGEOM	Minéralogie	PI	Cosalite	PRO2000-08
SIGEOM	Minéralogie	CK	Cryptomelane	PRO2000-08
SIGEOM	Minéralogie	CG	Cummingtonite	PRO2000-08
SIGEOM	Minéralogie	ZU	Cyrtolite	PRO2000-08
SIGEOM	Minéralogie	DT	Danaite	PRO2000-08
SIGEOM	Minéralogie	DL	Devilline	PRO2000-08
SIGEOM	Minéralogie	DP	Diopside	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralogie	DJ	Djurleite	PRO2000-08
SIGEOM	Minéralogie	DM	Dolomite	PRO2000-08
SIGEOM	Minéralogie	TG	Dravite	PRO2000-08
SIGEOM	Minéralogie	DS	Dravite-Schorlite	PRO2000-08
SIGEOM	Minéralogie	ES	Enstatite	PRO2000-08
SIGEOM	Minéralogie	EP	Epidote	PRO2000-08
SIGEOM	Minéralogie	ER	Erythrite	PRO2000-08
SIGEOM	Minéralogie	EU	Eudialyte	PRO2000-08
SIGEOM	Minéralogie	EX	Euxénite - (Y)	PRO2000-08
SIGEOM	Minéralogie	FA	Fayalite	PRO2000-08
SIGEOM	Minéralogie	FP	Feldspath	PRO2000-08
SIGEOM	Minéralogie	FN	Feldspath noir	PRO2000-08
SIGEOM	Minéralogie	FK	Feldspath potassique	PRO2000-08
SIGEOM	Minéralogie	FV	Feldspath vert/brun	PRO2000-08
SIGEOM	Minéralogie	FD	Feldspathoïde	PRO2000-08
SIGEOM	Minéralogie	FT	Ferghanite	PRO2000-08
SIGEOM	Minéralogie	FS	Fergusonite	PRO2000-08
SIGEOM	Minéralogie	FB	Fibrolite	PRO2000-08
SIGEOM	Minéralogie	AF	Fluorapatite	PRO2000-08
SIGEOM	Minéralogie	FL	Fluorite (fluorine)	PRO2000-08
SIGEOM	Minéralogie	FO	Forstérite	PRO2000-08
SIGEOM	Minéralogie	FR	Franklinite	PRO2000-08
SIGEOM	Minéralogie	FG	Freibergite	PRO2000-08
SIGEOM	Minéralogie	FC	Fuchsite	PRO2000-08
SIGEOM	Minéralogie	NC	Gaspéite	PRO2000-08
SIGEOM	Minéralogie	GT	Gédrite	PRO2000-08
SIGEOM	Minéralogie	NA	Gersdorffite	PRO2000-08
SIGEOM	Minéralogie	GC	Glaucothane	PRO2000-08
SIGEOM	Minéralogie	GP	Graphite	PRO2000-08
SIGEOM	Minéralogie	GF	Greenalite	PRO2000-08
SIGEOM	Minéralogie	GK	Greenockite	PRO2000-08
SIGEOM	Minéralogie	GR	Grenat	PRO2000-08
SIGEOM	Minéralogie	GM	Grenat manganésifère	PRO2000-08
SIGEOM	Minéralogie	GA	Grenat-almandin	PRO2000-08
SIGEOM	Minéralogie	GG	Grenat-grossulaire	PRO2000-08
SIGEOM	Minéralogie	GY	Grenat-pyrope	PRO2000-08
SIGEOM	Minéralogie	GN	Grunérite	PRO2000-08
SIGEOM	Minéralogie	UD	Gudmundite	PRO2000-08
SIGEOM	Minéralogie	GB	Gummite	PRO2000-08
SIGEOM	Minéralogie	GI	Gunningite	PRO2000-08
SIGEOM	Minéralogie	GE	Gypse	PRO2000-08
SIGEOM	Minéralogie	HL	Halite	PRO2000-08
SIGEOM	Minéralogie	HZ	Heazlewoodite	PRO2000-08
SIGEOM	Minéralogie	HG	Hédenbergite	PRO2000-08
SIGEOM	Minéralogie	HE	Hemimorphite	PRO2000-08
SIGEOM	Minéralogie	HC	Hercynite	PRO2000-08
SIGEOM	Minéralogie	HK	Holmquistite	PRO2000-08
SIGEOM	Minéralogie	HB	Hornblende	PRO2000-08
SIGEOM	Minéralogie	HT	Hydrocerussite	PRO2000-08
SIGEOM	Minéralogie	HN	Hydromagnésite	PRO2000-08
SIGEOM	Minéralogie	ZH	Hydrozincite	PRO2000-08
SIGEOM	Minéralogie	HP	Hypersthène	PRO2000-08
SIGEOM	Minéralogie	ID	Idaite	PRO2000-08
SIGEOM	Minéralogie	IG	Iddingsite	PRO2000-08
SIGEOM	Minéralogie	IR	Iriginite	PRO2000-08
SIGEOM	Minéralogie	IF	Isoferroplatine	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralogie	JA	Jade	PRO2000-08
SIGEOM	Minéralogie	JS	Jarosite	PRO2000-08
SIGEOM	Minéralogie	JP	Jaspe	PRO2000-08
SIGEOM	Minéralogie	KL	Kaolinite	PRO2000-08
SIGEOM	Minéralogie	KS	Kasolite	PRO2000-08
SIGEOM	Minéralogie	KM	Kermésite	PRO2000-08
SIGEOM	Minéralogie	KK	Klockmannite	PRO2000-08
SIGEOM	Minéralogie	KP	Kornéropine	PRO2000-08
SIGEOM	Minéralogie	KR	Krennerite	PRO2000-08
SIGEOM	Minéralogie	KN	Kyanite/Disthène	PRO2000-08
SIGEOM	Minéralogie	LB	Labradorite	PRO2000-08
SIGEOM	Minéralogie	LU	Laumontite	PRO2000-08
SIGEOM	Minéralogie	LI	Laurite	PRO2000-08
SIGEOM	Minéralogie	LS	Lawsonite	PRO2000-08
SIGEOM	Minéralogie	LD	Lepidocrocite	PRO2000-08
SIGEOM	Minéralogie	LP	Lépidolite	PRO2000-08
SIGEOM	Minéralogie	LE	Lessingite	PRO2000-08
SIGEOM	Minéralogie	LC	Leucite	PRO2000-08
SIGEOM	Minéralogie	LX	Leucoxène	PRO2000-08
SIGEOM	Minéralogie	LN	Linnaéite	PRO2000-08
SIGEOM	Minéralogie	DH	Maghémite	PRO2000-08
SIGEOM	Minéralogie	IC	Magnésiochromite	PRO2000-08
SIGEOM	Minéralogie	MN	Magnésite	PRO2000-08
SIGEOM	Minéralogie	MM	Manganite	PRO2000-08
SIGEOM	Minéralogie	MT	Mariposite	PRO2000-08
SIGEOM	Minéralogie	ZF	Marmatite	PRO2000-08
SIGEOM	Minéralogie	MH	Martite	PRO2000-08
SIGEOM	Minéralogie	ME	Méliilite	PRO2000-08
SIGEOM	Minéralogie	MW	Melonite	PRO2000-08
SIGEOM	Minéralogie	NE	Ménéghinite	PRO2000-08
SIGEOM	Minéralogie	MP	Mésoperthite	PRO2000-08
SIGEOM	Minéralogie	WH	Meymacite	PRO2000-08
SIGEOM	Minéralogie	MI	Mica	PRO2000-08
SIGEOM	Minéralogie	ML	Microcline	PRO2000-08
SIGEOM	Minéralogie	MA	Minéraux argileux	PRO2000-08
SIGEOM	Minéralogie	MD	Minéraux décoratifs	PRO2000-08
SIGEOM	Minéralogie	MX	Minéraux lourds	PRO2000-08
SIGEOM	Minéralogie	MF	Minéraux mafiques	PRO2000-08
SIGEOM	Minéralogie	MU	Minnesotaite	PRO2000-08
SIGEOM	Minéralogie	MZ	Monazite	PRO2000-08
SIGEOM	Minéralogie	OM	Monticellite	PRO2000-08
SIGEOM	Minéralogie	MV	Muscovite	PRO2000-08
SIGEOM	Minéralogie	NP	Néphéline	PRO2000-08
SIGEOM	Minéralogie	OI	Niocalite	PRO2000-08
SIGEOM	Minéralogie	OC	Ocre	PRO2000-08
SIGEOM	Minéralogie	OG	Oligoclasse	PRO2000-08
SIGEOM	Minéralogie	OV	Olivine	PRO2000-08
SIGEOM	Minéralogie	OR	Orthoclase (orthose)	PRO2000-08
SIGEOM	Minéralogie	OX	Orthopyroxène	PRO2000-08
SIGEOM	Minéralogie	OL	Ottrelite	PRO2000-08
SIGEOM	Minéralogie	OH	Oxyhornblende (Hornblende brune)	PRO2000-08
SIGEOM	Minéralogie	PE	Paragonite	PRO2000-08
SIGEOM	Minéralogie	PT	Penninite/Pennine	PRO2000-08
SIGEOM	Minéralogie	II	Péristérite	PRO2000-08
SIGEOM	Minéralogie	PK	Perovskite	PRO2000-08
SIGEOM	Minéralogie	PR	Perthite	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralogie	PZ	Petzite	PRO2000-08
SIGEOM	Minéralogie	PA	Phénacite/Phénakite	PRO2000-08
SIGEOM	Minéralogie	PH	Phlogopite	PRO2000-08
SIGEOM	Minéralogie	PU	Phosphuranylite	PRO2000-08
SIGEOM	Minéralogie	AR	Picrolite	PRO2000-08
SIGEOM	Minéralogie	PC	Pistachite	PRO2000-08
SIGEOM	Minéralogie	PG	Plagioclase	PRO2000-08
SIGEOM	Minéralogie	ZP	Pollucite	PRO2000-08
SIGEOM	Minéralogie	PJ	Posniakite	PRO2000-08
SIGEOM	Minéralogie	PN	Préhnite	PRO2000-08
SIGEOM	Minéralogie	PP	Pumpellyite	PRO2000-08
SIGEOM	Minéralogie	PS	Pyrolusite	PRO2000-08
SIGEOM	Minéralogie	PL	Pyrophyllite	PRO2000-08
SIGEOM	Minéralogie	PX	Pyroxène	PRO2000-08
SIGEOM	Minéralogie	QZ	Quartz	PRO2000-08
SIGEOM	Minéralogie	QB	Quartz bleu	PRO2000-08
SIGEOM	Minéralogie	RD	Rhodochrosite	PRO2000-08
SIGEOM	Minéralogie	RN	Rhodonite	PRO2000-08
SIGEOM	Minéralogie	RB	Riebeckite	PRO2000-08
SIGEOM	Minéralogie	RM	Romanechite	PRO2000-08
SIGEOM	Minéralogie	RC	Roscoelite	PRO2000-08
SIGEOM	Minéralogie	RZ	Rozénite	PRO2000-08
SIGEOM	Minéralogie	RL	Rutile	PRO2000-08
SIGEOM	Minéralogie	FF	Safflorite	PRO2000-08
SIGEOM	Minéralogie	SK	Samarskite	PRO2000-08
SIGEOM	Minéralogie	UL	Samarskite - (Y)	PRO2000-08
SIGEOM	Minéralogie	SA	Sanidine	PRO2000-08
SIGEOM	Minéralogie	SH	Sapphirine	PRO2000-08
SIGEOM	Minéralogie	SC	Scapolite	PRO2000-08
SIGEOM	Minéralogie	TF	Schorlite(Schorl)	PRO2000-08
SIGEOM	Minéralogie	VS	Sénarmontite	PRO2000-08
SIGEOM	Minéralogie	SR	Séricite	PRO2000-08
SIGEOM	Minéralogie	ST	Serpentine	PRO2000-08
SIGEOM	Minéralogie	SD	Sidérite(sidérose)	PRO2000-08
SIGEOM	Minéralogie	SI	Sidérotit	PRO2000-08
SIGEOM	Minéralogie	SM	Sillimanite	PRO2000-08
SIGEOM	Minéralogie	DW	Sklodowskite	PRO2000-08
SIGEOM	Minéralogie	TW	Smaltite/Smaltine	PRO2000-08
SIGEOM	Minéralogie	ZO	Smithsonite	PRO2000-08
SIGEOM	Minéralogie	SS	Sodalite	PRO2000-08
SIGEOM	Minéralogie	DY	Soddyite	PRO2000-08
SIGEOM	Minéralogie	GS	Spessartine	PRO2000-08
SIGEOM	Minéralogie	SN	Sphène/Titanite	PRO2000-08
SIGEOM	Minéralogie	SL	Spinelle	PRO2000-08
SIGEOM	Minéralogie	SO	Spodumène	PRO2000-08
SIGEOM	Minéralogie	NN	Stannite	PRO2000-08
SIGEOM	Minéralogie	SY	Starkéyite	PRO2000-08
SIGEOM	Minéralogie	SU	Staurotide	PRO2000-08
SIGEOM	Minéralogie	TS	Stéatite	PRO2000-08
SIGEOM	Minéralogie	ON	Stibiconite	PRO2000-08
SIGEOM	Minéralogie	SE	Stilpnomélane	PRO2000-08
SIGEOM	Minéralogie	SV	Sylvanite	PRO2000-08
SIGEOM	Minéralogie	SZ	Szomolnokite	PRO2000-08
SIGEOM	Minéralogie	TC	Talc	PRO2000-08
SIGEOM	Minéralogie	TN	Tantalite	PRO2000-08
SIGEOM	Minéralogie	TB	Tellurobismuthite	PRO2000-08



Source	Domaine	Code	Signification	Référence
SIGEOM	Minéralogie	TT	Tennantite	PRO2000-08
SIGEOM	Minéralogie	TE	Tenorite	PRO2000-08
SIGEOM	Minéralogie	TD	Tétradymite	PRO2000-08
SIGEOM	Minéralogie	ZT	Thomsonite	PRO2000-08
SIGEOM	Minéralogie	HU	Thucholite	PRO2000-08
SIGEOM	Minéralogie	TZ	Topaze	PRO2000-08
SIGEOM	Minéralogie	TU	Torbernite	PRO2000-08
SIGEOM	Minéralogie	TL	Tourmaline	PRO2000-08
SIGEOM	Minéralogie	TA	Tourmaline zincifère	PRO2000-08
SIGEOM	Minéralogie	TM	Trémolite	PRO2000-08
SIGEOM	Minéralogie	US	Ulvöspinel	PRO2000-08
SIGEOM	Minéralogie	VA	Valentinite	PRO2000-08
SIGEOM	Minéralogie	VL	Valleriite	PRO2000-08
SIGEOM	Minéralogie	VR	Vermiculite	PRO2000-08
SIGEOM	Minéralogie	VV	Vésuvianite	PRO2000-08
SIGEOM	Minéralogie	VO	Violarite	PRO2000-08
SIGEOM	Minéralogie	WM	Willemite	PRO2000-08
SIGEOM	Minéralogie	WS	Wilsonite	PRO2000-08
SIGEOM	Minéralogie	WL	Wollastonite	PRO2000-08
SIGEOM	Minéralogie	WN	Wulfenite	PRO2000-08
SIGEOM	Minéralogie	TX	Xénotime-(Y)	PRO2000-08
SIGEOM	Minéralogie	ZL	Zéolite	PRO2000-08
SIGEOM	Minéralogie	ZN	Zincite	PRO2000-08
SIGEOM	Minéralogie	ZC	Zircon	PRO2000-08
SIGEOM	Minéralogie	ZS	Zoïsite	PRO2000-08
SIGEOM	OrganoFossile	XX	Autres	PRO2000-08
SIGEOM	OrganoFossile	XB	Bioclastes	PRO2000-08
SIGEOM	OrganoFossile	YB	Brachiopodes	PRO2000-08
SIGEOM	OrganoFossile	YZ	Bryozoaires	PRO2000-08
SIGEOM	OrganoFossile	YC	Céphalopodes	PRO2000-08
SIGEOM	OrganoFossile	XC	Ciment	PRO2000-08
SIGEOM	OrganoFossile	YA	Conulaires	PRO2000-08
SIGEOM	OrganoFossile	YX	Coraux	PRO2000-08
SIGEOM	OrganoFossile	YR	Crinoïdes	PRO2000-08
SIGEOM	OrganoFossile	YD	Échinodermes	PRO2000-08
SIGEOM	OrganoFossile	YE	Éponges	PRO2000-08
SIGEOM	OrganoFossile	YY	Fossile	PRO2000-08
SIGEOM	OrganoFossile	YT	Gastéropodes	PRO2000-08
SIGEOM	OrganoFossile	YG	Graptolites	PRO2000-08
SIGEOM	OrganoFossile	XH	Hydrocarbures	PRO2000-08
SIGEOM	OrganoFossile	XL	Liant	PRO2000-08
SIGEOM	OrganoFossile	XR	Lithoclastes	PRO2000-08
SIGEOM	OrganoFossile	XG	Matière organique	PRO2000-08
SIGEOM	OrganoFossile	XM	Matrice	PRO2000-08
SIGEOM	OrganoFossile	XT	Oncolites	PRO2000-08
SIGEOM	OrganoFossile	XO	Oolites	PRO2000-08
SIGEOM	OrganoFossile	YO	Ostracodes	PRO2000-08
SIGEOM	OrganoFossile	YP	Péléciopodes	PRO2000-08
SIGEOM	OrganoFossile	XP	Pellets	PRO2000-08
SIGEOM	OrganoFossile	XD	Péloïdes	PRO2000-08
SIGEOM	OrganoFossile	YN	Plantes	PRO2000-08
SIGEOM	OrganoFossile	YK	Poissons	PRO2000-08
SIGEOM	OrganoFossile	YS	Stromatoïdes	PRO2000-08
SIGEOM	OrganoFossile	YI	Stromatoporoides	PRO2000-08
SIGEOM	OrganoFossile	YF	Traces fossiles	PRO2000-08
SIGEOM	OrganoFossile	YL	Trilobites	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche	I4QA	Aillikite	MB96-28
SIGEOM	Roche	I1K	Alaskite	MB96-28
SIGEOM	Roche	I4OA	Alnoite	MB96-28
SIGEOM	Roche	V2J	Andésite	MB96-28
SIGEOM	Roche	S12C	Anhydrite	MB96-28
SIGEOM	Roche	I3G	Anorthosite	MB96-28
SIGEOM	Roche	I3T	Anorthosite à hyperstène	MB96-28
SIGEOM	Roche	I3GR	Anorthosite foidifère	MB96-28
SIGEOM	Roche	I3H	Anorthosite gabbroïque	MB96-28
SIGEOM	Roche	I3GQ	Anorthosite quartzifère	MB96-28
SIGEOM	Roche	I1F	Aplite	MB96-28
SIGEOM	Roche	S2	Arénite	MB96-28
SIGEOM	Roche	S2D	Arénite arkosique	MB96-28
SIGEOM	Roche	S2E	Arénite lithique	MB96-28
SIGEOM	Roche	S2A	Arénite Quartzitique	MB96-28
SIGEOM	Roche	S1C	Arkose	MB96-28
SIGEOM	Roche	S2C	Arkose	MB96-28
SIGEOM	Roche	S7J	Bafflestone	MB96-28
SIGEOM	Roche	V3B	Basalte	MB96-28
SIGEOM	Roche	V3E	Basalte à olivine	MB96-28
SIGEOM	Roche	V3C	Basalte à quartz	MB96-28
SIGEOM	Roche	V3A	Basalte andésitique/Andésite basaltique	MB96-28
SIGEOM	Roche	V3F	Basalte magnésien	MB96-28
SIGEOM	Roche	V3H	Basanite	MB96-28
SIGEOM	Roche	V3HP	Basanite phonolitique	MB96-28
SIGEOM	Roche	V2FB	Benmoréite	MB96-28
SIGEOM	Roche	V3J	Bonninite	MB96-28
SIGEOM	Roche	S7I	Boundstone	MB96-28
SIGEOM	Roche	S5	Brèche	MB96-28
SIGEOM	Roche	S5G	Brèche Intraformationnel	MB96-28
SIGEOM	Roche	S5H	Brèche Intraformationnel Fermé	MB96-28
SIGEOM	Roche	S5I	Brèche Intraformationnel Ouvert	MB96-28
SIGEOM	Roche	S5A	Brèche Monogénique	MB96-28
SIGEOM	Roche	S5B	Brèche Monogénique Fermé	MB96-28
SIGEOM	Roche	S5C	Brèche Monogénique Ouvert	MB96-28
SIGEOM	Roche	S5D	Brèche Polygénique	MB96-28
SIGEOM	Roche	S5E	Brèche Polygénique Fermé	MB96-28
SIGEOM	Roche	S5F	Brèche Polygénique Ouvert	MB96-28
SIGEOM	Roche	S7	Calcaire	MB96-28
SIGEOM	Roche	S7C	Calcarénite	MB96-28
SIGEOM	Roche	S7A	Calculite	MB96-28
SIGEOM	Roche	I4QC	Calciocarbonatite	MB96-28
SIGEOM	Roche	S7D	calcirudite	MB96-28
SIGEOM	Roche	S7B	calcisiltite	MB96-28
SIGEOM	Roche	I4OC	Camptonite	MB96-28
SIGEOM	Roche	I4Q	Carbonatite	MB96-28
SIGEOM	Roche	I1P	Charnockite (Granite à hyperstène)	MB96-28
SIGEOM	Roche	I1O	Charnockite à feldspath alcalin	MB96-28
SIGEOM	Roche	S10	Chert	MB96-28
SIGEOM	Roche	S10B	Chert Carbonaté	MB96-28
SIGEOM	Roche	S10F	Chert Ferrugineux	MB96-28
SIGEOM	Roche	S10E	Chert Graphiteux/Carboné	MB96-28
SIGEOM	Roche	S10A	Chert Oxydé	MB96-28
SIGEOM	Roche	S10C	Chert Silicaté	MB96-28
SIGEOM	Roche	S10D	Chert Sulfuré	MB96-28
SIGEOM	Roche	S6H	Clayshale	MB96-28

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche	S6I	Clayslate	MB96-28
SIGEOM	Roche	S6G	Claystone	MB96-28
SIGEOM	Roche	I4C	Clinopyroxénite	MB96-28
SIGEOM	Roche	I4F	Clinopyroxénite à olivine	MB96-28
SIGEOM	Roche	V1BC	Commendite	MB96-28
SIGEOM	Roche	S4	Conglomérat	MB96-28
SIGEOM	Roche	S4G	Conglomérat intraformationnel	MB96-28
SIGEOM	Roche	S4H	Conglomérat intraformationnel Fermé	MB96-28
SIGEOM	Roche	S4I	Conglomérat intraformationnel Ouvert	MB96-28
SIGEOM	Roche	S4A	Conglomérat monogénique	MB96-28
SIGEOM	Roche	S4B	Conglomérat monogénique fermé	MB96-28
SIGEOM	Roche	S4C	Conglomérat monogénique Ouvert	MB96-28
SIGEOM	Roche	S4D	Conglomérat polygénique	MB96-28
SIGEOM	Roche	S4E	Conglomérat polygénique Fermé	MB96-28
SIGEOM	Roche	S4F	Conglomérat polygénique Ouvert	MB96-28
SIGEOM	Roche	V1D	Dacite	MB96-28
SIGEOM	Roche	I4QD	Damtiernite	MB96-28
SIGEOM	Roche	I3B	Diabase	MB96-28
SIGEOM	Roche	I3M	Diabase à olivine	MB96-28
SIGEOM	Roche	I3F	Diabase à quartz	MB96-28
SIGEOM	Roche	I2J	Diorite	MB96-28
SIGEOM	Roche	I2Q	Diorite à hyperstène	MB96-28
SIGEOM	Roche	I2JR	Diorite foidifère	MB96-28
SIGEOM	Roche	I2JF	Diorite foidique	MB96-28
SIGEOM	Roche	I2I	Diorite quartzifère	MB96-28
SIGEOM	Roche	S8C	Dolarénite	MB96-28
SIGEOM	Roche	S8A	Dololuite	MB96-28
SIGEOM	Roche	S8	Dolomite	MB96-28
SIGEOM	Roche	S8D	Dolorudite	MB96-28
SIGEOM	Roche	S8B	Dolosilite	MB96-28
SIGEOM	Roche	I4M	Dunite	MB96-28
SIGEOM	Roche	I1T	Enderbite (Tonalite à hyperstène)	MB96-28
SIGEOM	Roche	S12	Évaporite	MB96-28
SIGEOM	Roche	S11	Exhalite	MB96-28
SIGEOM	Roche	I4QF	Ferrocarbonatite	MB96-28
SIGEOM	Roche	I3D	Ferrogabbro	MB96-28
SIGEOM	Roche	I1N	Filon/Veine de quartz	MB96-28
SIGEOM	Roche	V4I	Foidite	MB96-28
SIGEOM	Roche	V4IP	Foidite phonolitique	MB96-28
SIGEOM	Roche	V4IT	Foidite téphritique	MB96-28
SIGEOM	Roche	I4S	Foidolite	MB96-28
SIGEOM	Roche	S9	Formation de fer	MB96-28
SIGEOM	Roche	S9C	Formation de fer Carbonatée	MB96-28
SIGEOM	Roche	S9A	Formation de fer indéterminée	MB96-28
SIGEOM	Roche	S9B	Formation de fer oxydée	MB96-28
SIGEOM	Roche	S9D	Formation de fer Silicatée	MB96-28
SIGEOM	Roche	S9E	Formation de fer Sulfurée	MB96-28
SIGEOM	Roche	I3A	Gabbro	MB96-28
SIGEOM	Roche	I3K	Gabbro à olivine	MB96-28
SIGEOM	Roche	I3E	Gabbro à quartz	MB96-28
SIGEOM	Roche	I3I	Gabbro anorthosite	MB96-28
SIGEOM	Roche	I3AR	Gabbro foidifère	MB96-28
SIGEOM	Roche	I3Q	Gabbronorite	MB96-28
SIGEOM	Roche	I3R	Gabbronorite à olivine	MB96-28
SIGEOM	Roche	S7H	Grainstone	MB96-28
SIGEOM	Roche	I1B	Granite	MB96-28

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche	I1A	Granite à feldspath alcalin	MB96-28
SIGEOM	Roche	I1I	Granitoïde riche en quartz	MB96-28
SIGEOM	Roche	I1C	Granodiorite	MB96-28
SIGEOM	Roche	I1S	Grano-diotite à hyperstène	MB96-28
SIGEOM	Roche	I1H	Granophyre	MB96-28
SIGEOM	Roche	S1	Grès	MB96-28
SIGEOM	Roche	S1D	Grès Arkosique	MB96-28
SIGEOM	Roche	S1B	Grès Feldspathique	MB96-28
SIGEOM	Roche	S1E	Grès Lithique	MB96-28
SIGEOM	Roche	S1F	Grès Lithique subfeldspathitique	MB96-28
SIGEOM	Roche	S1A	Grès Quartzique	MB96-28
SIGEOM	Roche	S12D	Gypse	MB96-28
SIGEOM	Roche	S12A	Halite	MB96-28
SIGEOM	Roche	I4L	Harzburgite	MB96-28
SIGEOM	Roche	V3DH	Hawaïite	MB96-28
SIGEOM	Roche	I4A	Hornblendite	MB96-28
SIGEOM	Roche	V2JI	Icelandite	MB96-28
SIGEOM	Roche	V3AI	Icelandite basaltique	MB96-28
SIGEOM	Roche	I1	Intrusion felsique	MB96-28
SIGEOM	Roche	I2	Intrusion Intermédiaire	MB96-28
SIGEOM	Roche	I3	Intrusion mafique	MB96-28
SIGEOM	Roche	I4	Intrusion ultramafique	MB96-28
SIGEOM	Roche	S10J	Jaspe, Jaspilite	MB96-28
SIGEOM	Roche	I2P	Jotunite (Monzodiorite à hyperstène)	MB96-28
SIGEOM	Roche	I3OK	Kersantite	MB96-28
SIGEOM	Roche	I4P	Kimberlite	MB96-28
SIGEOM	Roche	I4PA	Kimberlite (groupe I)	MB96-28
SIGEOM	Roche	I4PB	Kimberlite (groupe II)	MB96-28
SIGEOM	Roche	V4A	Komatiite	MB96-28
SIGEOM	Roche	V4D	Komatiite dunitique	MB96-28
SIGEOM	Roche	V4C	Komatiite péridotitique	MB96-28
SIGEOM	Roche	V4B	Komatiite pyroxénitique	MB96-28
SIGEOM	Roche	I4R	Lamproïte	MB96-28
SIGEOM	Roche	I3O	Lamprophyre mafique	MB96-28
SIGEOM	Roche	I4O	Lamprophyre ultrabasique	MB96-28
SIGEOM	Roche	V2FL	Latite	MB96-28
SIGEOM	Roche	V2LR	Latite foidifère	MB96-28
SIGEOM	Roche	V2E	Latite quartzifère	MB96-28
SIGEOM	Roche	I3P	Leuconorite	MB96-28
SIGEOM	Roche	I4K	Lherzolite	MB96-28
SIGEOM	Roche	I4QM	Magnésiocarbonatite	MB96-28
SIGEOM	Roche	I2O	Mangérite (Monzonite à hyperstène)	MB96-28
SIGEOM	Roche	V4E	Meimechite	MB96-28
SIGEOM	Roche	V4F	Melilitite	MB96-28
SIGEOM	Roche	V4FO	Melilitite à olivine	MB96-28
SIGEOM	Roche	I4T	Mélilitolite	MB96-28
SIGEOM	Roche	I3OM	Minette	MB96-28
SIGEOM	Roche	I4OM	Monchiquite	MB96-28
SIGEOM	Roche	I2H	Monzodiorite	MB96-28
SIGEOM	Roche	I2HR	Monzodiorite foidifère	MB96-28
SIGEOM	Roche	I2HF	Monzodiorite foidique	MB96-28
SIGEOM	Roche	I2G	Monzodiorite quartzifère	MB96-28
SIGEOM	Roche	I3C	Monzogabbro	MB96-28
SIGEOM	Roche	I3CR	Monzogabbro foidifère	MB96-28
SIGEOM	Roche	I3CF	Monzogabbro foidique	MB96-28
SIGEOM	Roche	I3CQ	Monzogabbro quartzifère	MB96-28

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche	I1M	Monzo-Granite	MB96-28
SIGEOM	Roche	I1R	Monzo-granite à hyperstène	MB96-28
SIGEOM	Roche	I2F	Monzonite	MB96-28
SIGEOM	Roche	I2FR	Monzonite foidifère	MB96-28
SIGEOM	Roche	I2E	Monzonite quartzifère	MB96-28
SIGEOM	Roche	I3S	Monzonorite	MB96-28
SIGEOM	Roche	I2K	Monzosyénite	MB96-28
SIGEOM	Roche	I2KF	Monzosyénite foidique	MB96-28
SIGEOM	Roche	OB	Mort Terrain (Overburden)	
SIGEOM	Roche	S6	Mudrock	MB96-28
SIGEOM	Roche	S6E	Mudshale	MB96-28
SIGEOM	Roche	S6F	Mudslate	MB96-28
SIGEOM	Roche	S6D	Mudstone	MB96-28
SIGEOM	Roche	S7E	Mudstone	MB96-28
SIGEOM	Roche	V3GM	Mugéargite	MB96-28
SIGEOM	Roche	V4IN	Néphéline	MB96-28
SIGEOM	Roche	I3J	Norite	MB96-28
SIGEOM	Roche	I3L	Norite à olivine	MB96-28
SIGEOM	Roche	I4E	Orthopyroxénite	MB96-28
SIGEOM	Roche	I4H	Orthopyroxénite à olivine	MB96-28
SIGEOM	Roche	S7G	Packstone	MB96-28
SIGEOM	Roche	V1BP	Pantellérite	MB96-28
SIGEOM	Roche	I1G	Pegmatite (granitique)	MB96-28
SIGEOM	Roche	I4I	Péridotite	MB96-28
SIGEOM	Roche	V2G	Phonolite	MB96-28
SIGEOM	Roche	V2GT	Phonolite téphritique	MB96-28
SIGEOM	Roche	V4H	Picrite	MB96-28
SIGEOM	Roche	V4G	Picrobasalte	MB96-28
SIGEOM	Roche	I4OP	Polzénite	MB96-28
SIGEOM	Roche	I4B	Pyroxénite	MB96-28
SIGEOM	Roche	I1J	Quartzolite (Silexite)	MB96-28
SIGEOM	Roche	V1C	Rhyodacite	MB96-28
SIGEOM	Roche	V1B	Rhyolite	MB96-28
SIGEOM	Roche	V1A	Rhyolite à feldspath alcalin	MB96-28
SIGEOM	Roche	V4M	Roche volcanique ultramafique à melilite	MB96-28
SIGEOM	Roche	S7K	Rudstone	MB96-28
SIGEOM	Roche	I4OS	Sannaite	MB96-28
SIGEOM	Roche	S	Sédiments	MB96-28
SIGEOM	Roche	I4N	Serpentinite	MB96-28
SIGEOM	Roche	V3GS	Shoshonite	MB96-28
SIGEOM	Roche	S6B	Siltshale	MB96-28
SIGEOM	Roche	S6C	Siltslate	MB96-28
SIGEOM	Roche	S6A	Siltstone	MB96-28
SIGEOM	Roche	I3OS	Spessartite	MB96-28
SIGEOM	Roche	S2B	SubArkose	MB96-28
SIGEOM	Roche	S2F	Sublitharénite	MB96-28
SIGEOM	Roche	S12E	Sulfate	MB96-28
SIGEOM	Roche	F1	Sulfures Massifs	MB96-28
SIGEOM	Roche	F2	Sulfures semi-Massifs	MB96-28
SIGEOM	Roche	I2D	Syénite	MB96-28
SIGEOM	Roche	I2B	Syénite à feldspath alcalin	MB96-28
SIGEOM	Roche	I2N	Syénite à hyperstène	MB96-28
SIGEOM	Roche	I2DR	Syénite foidifère	MB96-28
SIGEOM	Roche	I2BR	Syénite foidifère à feldspath alcalin	MB96-28
SIGEOM	Roche	I2DF	Syénite foidique	MB96-28
SIGEOM	Roche	I2C	Syénite quartzifère	MB96-28

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche	I2A	Syénite quartzifère à feldspath alcalin	MB96-28
SIGEOM	Roche	I2M	Syénite quartzifère à feldspath alcalin avec hyperstène	MB96-28
SIGEOM	Roche	I1L	Syéno-granite	MB96-28
SIGEOM	Roche	I1Q	Syéno-granite à hyperstène	MB96-28
SIGEOM	Roche	S12B	Sylvite	MB96-28
SIGEOM	Roche	V3I	Téphrite	MB96-28
SIGEOM	Roche	V3IP	Téphryte phonolitique	MB96-28
SIGEOM	Roche	S4J	Tillite	MB96-28
SIGEOM	Roche	I1D	Tonalite	MB96-28
SIGEOM	Roche	V2F	Trachyandésite	MB96-28
SIGEOM	Roche	V3G	Trachyandésite basaltique	MB96-28
SIGEOM	Roche	V3D	Trachybasalte	MB96-28
SIGEOM	Roche	V3DK	Trachybasalte potassique	MB96-28
SIGEOM	Roche	V1E	Trachydacite	MB96-28
SIGEOM	Roche	V2D	Trachyte	MB96-28
SIGEOM	Roche	V2B	Trachyte à feldspath alcalin	MB96-28
SIGEOM	Roche	V2DC	Trachyte commenditique	MB96-28
SIGEOM	Roche	V2DR	Trachyte foidifère	MB96-28
SIGEOM	Roche	V2BR	Trachyte foidifère à feldspath alcalin	MB96-28
SIGEOM	Roche	V2DP	Trachyte pantellétique	MB96-28
SIGEOM	Roche	V2C	Trachyte quartzifère	MB96-28
SIGEOM	Roche	V2A	Trachyte quartzifère à feldspath alcalin	MB96-28
SIGEOM	Roche	I3N	Troctolite	MB96-28
SIGEOM	Roche	I1E	Trondhémite	MB96-28
SIGEOM	Roche	I3OV	Vogesite	MB96-28
SIGEOM	Roche	V	Volcanite	
SIGEOM	Roche	V1	Volcanite felsique	MB96-28
SIGEOM	Roche	V2	Volcanite Intermédiaire	MB96-28
SIGEOM	Roche	V3	Volcanite mafique	MB96-28
SIGEOM	Roche	V4	Volcanite ultramafique	MB96-28
SIGEOM	Roche	S3	Wacke	MB96-28
SIGEOM	Roche	S3C	Wacke Arkosique	MB96-28
SIGEOM	Roche	S3D	Wacke Feldspathique	MB96-28
SIGEOM	Roche	S3E	Wacke Lithique	MB96-28
SIGEOM	Roche	S3A	Wacke Quartzitique	MB96-28
SIGEOM	Roche	S7F	Wackestone	MB96-28
SIGEOM	Roche	I4D	Websterite	MB96-28
SIGEOM	Roche	I4G	Websterite à olivine	MB96-28
SIGEOM	Roche	I4J	Wehrlite	MB96-28
SIGEOM	Roche Métamorphique	M23	Agmatite	MB96-28
SIGEOM	Roche Métamorphique	M16	Amphibolite	MB96-28
SIGEOM	Roche Métamorphique	M26	Brèche Tectonique	MB96-28
SIGEOM	Roche Métamorphique	M24	Cataclastite	MB96-28
SIGEOM	Roche Métamorphique	M18	Cornéenne	MB96-28
SIGEOM	Roche Métamorphique	M31	Coticule	MB96-28
SIGEOM	Roche Métamorphique	M21	Diatexite	MB96-28
SIGEOM	Roche Métamorphique	M17	Éclogite	MB96-28
SIGEOM	Roche Métamorphique	M1	Gneiss	MB96-28
SIGEOM	Roche Métamorphique	T3A	Gneiss droit («straight gneiss»)	MB96-28
SIGEOM	Roche Métamorphique	M6	Gneiss granitique	MB96-28
SIGEOM	Roche Métamorphique	T3D	Gneiss irrégulier	MB96-28
SIGEOM	Roche Métamorphique	T3B	Gneiss porphyroclastique	MB96-28
SIGEOM	Roche Métamorphique	M5	Gneiss Quartzofeldspathique	MB96-28
SIGEOM	Roche Métamorphique	T3C	Gneiss régulier	MB96-28
SIGEOM	Roche Métamorphique	M2	Gneiss Rubané	MB96-28
SIGEOM	Roche Métamorphique	M21A	Granite d'Anatexie	MB96-28

Source	Domaine	Code	Signification	Référence
SIGEOM	Roche Métamorphique	M7	Granulite	MB96-28
SIGEOM	Roche Métamorphique	M13	Marbre	MB96-28
SIGEOM	Roche Métamorphique	M20	Métatexite	MB96-28
SIGEOM	Roche Métamorphique	M22	Migmatite	MB96-28
SIGEOM	Roche Métamorphique	M25	Mylonite	MB96-28
SIGEOM	Roche Métamorphique	M3	Orthogneiss	MB96-28
SIGEOM	Roche Métamorphique	M9	Orthoschiste	MB96-28
SIGEOM	Roche Métamorphique	M4	Paragneiss	MB96-28
SIGEOM	Roche Métamorphique	M10	Paraschiste	MB96-28
SIGEOM	Roche Métamorphique	M11	Phyllade	MB96-28
SIGEOM	Roche Métamorphique	M12	Quartzite	MB96-28
SIGEOM	Roche Métamorphique	M14	Roche Calco-Silicatée	MB96-28
SIGEOM	Roche Métamorphique	M15	Roche Métasomatique (Skarn)	MB96-28
SIGEOM	Roche Métamorphique	M8	Schiste	MB96-28
SIGEOM	Roche Métamorphique	M30	Tourmalinite	MB96-28
SIGEOM	Roche Tectonite	T2E	Blastomylonite	MB96-28
SIGEOM	Roche Tectonite	T1A	Brèche de Faille	MB96-28
SIGEOM	Roche Tectonite	T1F	Brèche d'Impact	MB96-28
SIGEOM	Roche Tectonite	T4	Brèche tectonique	MB96-28
SIGEOM	Roche Tectonite	T4B	Brèche tectonique à matrice de marbre	MB96-28
SIGEOM	Roche Tectonite	T1	Cataclastite	MB96-28
SIGEOM	Roche Tectonite	T1C	Gouge de faille	MB96-28
SIGEOM	Roche Tectonite	T1G	Impactite	MB96-28
SIGEOM	Roche Tectonite	T4A	Mélange tectonique	MB96-28
SIGEOM	Roche Tectonite	T1B	Microbrèche de Faille	MB96-28
SIGEOM	Roche Tectonite	T1E	Myololithénite	MB96-28
SIGEOM	Roche Tectonite	T2	Mylonite	MB96-28
SIGEOM	Roche Tectonite	T2B	Orthomylonite	MB96-28
SIGEOM	Roche Tectonite	T2D	Phyllonite	MB96-28
SIGEOM	Roche Tectonite	T2A	Protomylonite	MB96-28
SIGEOM	Roche Tectonite	T1D	Pseudotachylite	MB96-28
SIGEOM	Roche Tectonite	T2C	Ultramylonite	MB96-28
VIA	Structure	APL	Axe de Pli	
VIA	Structure	DIA	Diaclase, Joint, Fracture	
VIA	Structure	DYK	Dyke	
VIA	Structure	FAI	Faille, Cisaillement	
VIA	Structure	FOL	Foliation	
VIA	Structure	LAM	Lamination, Rubannement, Flow banding	
VIA	Structure	LIN	Linéation	
VIA	Structure	LIT	Litage, Bedding, S0, Stratification	
VIA	Structure	PAX	Plan Axial	
VIA	Structure	SCH	Schistosité, Gneissosité, SP, S1, S2, S3	
VIA	Structure	SGL	Strie Glaciaire	
VIA	Structure	VEI	Veine	
SIGEOM	Structure	L	Axe de mullion	PRO2000-08
SIGEOM	Structure	B	Axe de boudin	PRO2000-08
SIGEOM	Structure	J	Axe de joint en colonne	PRO2000-08
VIA	Structure	AP	Axe de pli	
SIGEOM	Structure	Q	Axe de stylolithe	PRO2000-08
SIGEOM	Structure	E	Axe d'étirement	PRO2000-08
SIGEOM	Structure	A	Axe d'étirement d'objet déformé	PRO2000-08
SIGEOM	Structure	Y	Axe d'étirement plaquage minéral	PRO2000-08
SIGEOM	Structure	M	Axe Minérale primaire (magmatique)	PRO2000-08
SIGEOM	Structure	N	Axe Minérale secondaire (tectonométamorphique)	PRO2000-08
VIA	Structure	LE	Linéation d'étirement	
SIGEOM	Structure	L1	Linéation d'intersection	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Structure	L2	Linéation d'intersection	PRO2000-08
SIGEOM	Structure	L3	Linéation d'intersection	PRO2000-08
SIGEOM	Structure	L4	Linéation d'intersection	PRO2000-08
SIGEOM	Structure	L	Linéation Indéterminée	PRO2000-08
VIA	Structure	LM	Linéation minérale	
SIGEOM	Structure	F	Strie de faille	PRO2000-08
VIA	Structure	SG	Strie glaciaire	
SIGEOM	Structure	T	Strie intercouche	PRO2000-08
VIA	Structure	CC	Clivage de crénulation	
VIA	Structure	DY	Dyke	
VIA	Structure	FA	Faille	
VIA	Structure	FR	Fracture	
VIA	Structure	LI	Litage	
VIA	Structure	PA	Plan axial	
VIA	Structure	S1	Schistosité S1	
VIA	Structure	S2	Schistosité S2	
VIA	Structure	S3	Schistosité S3	
VIA	Structure	VN	Veine	
VIA	Structure	ZC	Zone de cisaillement	
SIGEOM	Texture	AC	Aciculaire	PRO2000-08
SIGEOM	Texture	AD	Adcumulat	PRO2000-08
SIGEOM	Texture	AA	Affleurement caractérisé par le plissement	PRO2000-08
SIGEOM	Texture	AT	Agmatitique	PRO2000-08
SIGEOM	Texture	AL	Alaskitique	PRO2000-08
SIGEOM	Texture	AE	Altéré	PRO2000-08
SIGEOM	Texture	AO	Amas arrondis (globulaires)	PRO2000-08
SIGEOM	Texture	AB	Amiboïdal(e)	PRO2000-08
SIGEOM	Texture	AM	Amygdalaire	PRO2000-08
SIGEOM	Texture	AM	Amygdalaire	PRO2000-08
SIGEOM	Texture	AN	Anastomosé	PRO2000-08
SIGEOM	Texture	AR	Antirapakivi	PRO2000-08
SIGEOM	Texture	AP	Aphanitique	PRO2000-08
SIGEOM	Texture	AY	Apophyse (en)	PRO2000-08
SIGEOM	Texture	AS	Arborescent	PRO2000-08
SIGEOM	Texture	AU	Autoclastique	PRO2000-08
SIGEOM	Texture	XX	Autres	PRO2000-08
SIGEOM	Texture	BA	Bancs (en)	PRO2000-08
SIGEOM	Texture	BM	Bandes de cimentation	PRO2000-08
SIGEOM	Texture	BS	Basal(e)	PRO2000-08
SIGEOM	Texture	BE	Birds eyes	PRO2000-08
SIGEOM	Texture	BI	Biseau	PRO2000-08
SIGEOM	Texture	BL	Blocs (à)	PRO2000-08
SIGEOM	Texture	BU	Bordure / limite de coulée	PRO2000-08
SIGEOM	Texture	BV	Botryoïdal	PRO2000-08
SIGEOM	Texture	BO	Boudinage	PRO2000-08
SIGEOM	Texture	BC	Brèche à coussins ordinaires isolés	PRO2000-08
SIGEOM	Texture	BG	Brèche à coussins peu serrés	PRO2000-08
SIGEOM	Texture	BF	Brèche à méga-coussins isolés	PRO2000-08
SIGEOM	Texture	BB	Brèche à mini-coussins isolés	PRO2000-08
SIGEOM	Texture	BQ	Brèche de coulée / Brèche de lave	PRO2000-08
SIGEOM	Texture	BH	Brèche de coussins désagrégés / brisés	PRO2000-08
SIGEOM	Texture	BK	Brèche de coussins fragmentés	PRO2000-08
SIGEOM	Texture	BN	Brèche d'intrusion	PRO2000-08
SIGEOM	Texture	BP	Brèche pyroclastique	PRO2000-08
SIGEOM	Texture	BT	Brèche tectonique	PRO2000-08
SIGEOM	Texture	BR	Bréchique / Brèche	PRO2000-08



Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	BY	Broyage	PRO2000-08
SIGEOM	Texture	CA	Cailloux 4-64 mm	PRO2000-08
SIGEOM	Texture	PK	Cailloux alignés «pebble stringers»	PRO2000-08
SIGEOM	Texture	CN	Cannelure	PRO2000-08
SIGEOM	Texture	CQ	Cataclastique	PRO2000-08
SIGEOM	Texture	CE	Cendre (à)	PRO2000-08
SIGEOM	Texture	VP	Centre volcanique/ faciès proximal	PRO2000-08
SIGEOM	Texture	DN	Cheminée d'alimentation (dyke nourricier)	PRO2000-08
SIGEOM	Texture	CV	Cheminée volcanique	PRO2000-08
SIGEOM	Texture	CH	Chenal	PRO2000-08
SIGEOM	Texture	CD	Chenal d'érosion ( à )	PRO2000-08
SIGEOM	Texture	CG	Chenalisé	PRO2000-08
SIGEOM	Texture	CS	Cisaillé(e)	PRO2000-08
VIA	Texture	CIS	Cisaillement	
SIGEOM	Texture	JC	Columnaire/ (joints en colonnes)	PRO2000-08
SIGEOM	Texture	CB	Convolutions (à)	PRO2000-08
SIGEOM	Texture	KO	Coronitique	PRO2000-08
SIGEOM	Texture	NM	Coulé massive à noyaux saussuritisés	PRO2000-08
SIGEOM	Texture	CL	Coulée	PRO2000-08
SIGEOM	Texture	NC	Coulée coussinée à noyaux saussuritisés	PRO2000-08
SIGEOM	Texture	FZ	Coulée fragmentée	PRO2000-08
SIGEOM	Texture	CK	Coulée massive	PRO2000-08
SIGEOM	Texture	CZ	Coulée massive à surface coussinée	PRO2000-08
SIGEOM	Texture	CW	Coulée massive grenue et/ou partie basale grenue de coulée	PRO2000-08
SIGEOM	Texture	CO	Coussiné (coussins)	PRO2000-08
SIGEOM	Texture	CO	Coussiné (coussins)	PRO2000-08
SIGEOM	Texture	XP	Coussins allongés	PRO2000-08
SIGEOM	Texture	FP	Coussins aplatis	PRO2000-08
SIGEOM	Texture	MD	Coussins en molaire	PRO2000-08
SIGEOM	Texture	CF	Coussins fragmentés	PRO2000-08
SIGEOM	Texture	CI	Coussins isolés	PRO2000-08
SIGEOM	Texture	CJ	Coussins jointifs	PRO2000-08
SIGEOM	Texture	CT	Crescumulat	PRO2000-08
SIGEOM	Texture	CR	Cristalloblastique	PRO2000-08
SIGEOM	Texture	CX	Cristaux (en)	PRO2000-08
SIGEOM	Texture	CP	Cryptalguaire	PRO2000-08
SIGEOM	Texture	CU	Cumulat (à)	PRO2000-08
SIGEOM	Texture	CM	Cumulite	PRO2000-08
SIGEOM	Texture	DS	Cupules («dish structure»)	PRO2000-08
SIGEOM	Texture	CY	Cyclique(Cyclicité)	PRO2000-08
SIGEOM	Texture	DG	Désagrégés / brisés	PRO2000-08
SIGEOM	Texture	DQ	Diabasique	PRO2000-08
SIGEOM	Texture	DB	Diablastique	PRO2000-08
SIGEOM	Texture	DC	Diaclasé	PRO2000-08
SIGEOM	Texture	DR	Direction de courant	PRO2000-08
SIGEOM	Texture	DE	Direction d'écoulement de coulés	PRO2000-08
SIGEOM	Texture	DD	Discordance	PRO2000-08
SIGEOM	Texture	DK	Drusique	PRO2000-08
SIGEOM	Texture	DU	Dunes	PRO2000-08
SIGEOM	Texture	DW	Durchbewegung	PRO2000-08
SIGEOM	Texture	SB	Échappement (structure d')	PRO2000-08
SIGEOM	Texture	ED	Écharde	PRO2000-08
SIGEOM	Texture	EO	Écoulement (structure d')	PRO2000-08
SIGEOM	Texture	EF	Effondrement (structure d')	PRO2000-08
SIGEOM	Texture	EL	Empreinte de cannelures	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	EC	Empreinte de charge (« load cast»)	PRO2000-08
SIGEOM	Texture	EI	Empreinte d'impact	PRO2000-08
SIGEOM	Texture	EE	En échelon	PRO2000-08
SIGEOM	Texture	ES	En festons	PRO2000-08
SIGEOM	Texture	EN	Enclave	PRO2000-08
SIGEOM	Texture	EM	Encroûtement («crustification»)	PRO2000-08
SIGEOM	Texture	EP	Épiclastique	PRO2000-08
SIGEOM	Texture	EQ	Équigrulaire	PRO2000-08
SIGEOM	Texture	ER	Excroissances	PRO2000-08
SIGEOM	Texture	EX	Extrusif (ve)	PRO2000-08
SIGEOM	Texture	FJ	Faille intra-formationnelle	PRO2000-08
SIGEOM	Texture	FV	Faille synvolcanique	PRO2000-08
SIGEOM	Texture	FD	Fente de dessiccation	PRO2000-08
SIGEOM	Texture	FM	Fente de refroidissement	PRO2000-08
SIGEOM	Texture	FI	Fibreux (se)	PRO2000-08
SIGEOM	Texture	FB	Fibroblastique	PRO2000-08
SIGEOM	Texture	FS	Filandré « Flaser »	PRO2000-08
SIGEOM	Texture	FH	Filons-couches cogénitiques (synvolcaniques)	PRO2000-08
SIGEOM	Texture	FE	Flammes	PRO2000-08
SIGEOM	Texture	FL	Flué, par fluage - fluidal	PRO2000-08
SIGEOM	Texture	FL	Fluidal(e) (à structure)	PRO2000-08
SIGEOM	Texture	FT	Flûte («flutecast»)	PRO2000-08
SIGEOM	Texture	FX	Flûte déformée par surcharge	PRO2000-08
SIGEOM	Texture	FO	Folié(e)	PRO2000-08
SIGEOM	Texture	FF	Fossilifère	PRO2000-08
SIGEOM	Texture	FA	Fracturé(e)	PRO2000-08
SIGEOM	Texture	FC	Fractures radiales dans les coussins	PRO2000-08
SIGEOM	Texture	FG	Fragmenté	PRO2000-08
SIGEOM	Texture	FW	Fragments allongés «monomictes»/monogéniques	PRO2000-08
SIGEOM	Texture	FU	Fragments allongés «polymictic»/polygéniques	PRO2000-08
SIGEOM	Texture	FQ	Fragments aplatis «monomictic»/monogénique	PRO2000-08
SIGEOM	Texture	FK	Fragments aplatis «polymictic»/polygénique	PRO2000-08
SIGEOM	Texture	FR	Frites («pencil structure») (en crayon)	PRO2000-08
SIGEOM	Texture	GA	Galets (à)(64-256 mm)	PRO2000-08
SIGEOM	Texture	GE	Géode	PRO2000-08
SIGEOM	Texture	GB	Gloméroblastique	PRO2000-08
SIGEOM	Texture	GC	Gloméroclastique	PRO2000-08
SIGEOM	Texture	GX	Glomérocrystallin(e)	PRO2000-08
SIGEOM	Texture	GH	Gloméroporphyrrique	PRO2000-08
SIGEOM	Texture	NR	Gneiss à crayons	PRO2000-08
SIGEOM	Texture	GD	Gneiss droit («straight gneiss»)	PRO2000-08
SIGEOM	Texture	GS	Gneissique	PRO2000-08
SIGEOM	Texture	GW	Gradation densimétrique	PRO2000-08
SIGEOM	Texture	VG	Gradation granulométrique	PRO2000-08
SIGEOM	Texture	GF	Grains fins (à) < 1mm roches ignées	PRO2000-08
SIGEOM	Texture	GG	Grains grossiers (à) >5 mm roches ignées	PRO2000-08
SIGEOM	Texture	GM	Grains moyens (à) 1-5 mm roches ignées	PRO2000-08
SIGEOM	Texture	GT	Grains très fins	PRO2000-08
SIGEOM	Texture	GO	Grains très grossiers	PRO2000-08
SIGEOM	Texture	GR	Granoblastique	PRO2000-08
SIGEOM	Texture	GI	Granoclasement inverse	PRO2000-08
SIGEOM	Texture	GJ	Granoclasement inverse suivi de normal	PRO2000-08
SIGEOM	Texture	GN	Granoclasement normal	PRO2000-08
SIGEOM	Texture	GK	Granoclasement normal suivi d'inverse	PRO2000-08
SIGEOM	Texture	GQ	Granoclastique	PRO2000-08
SIGEOM	Texture	GY	Granophyrique	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	GU	Granules (à) (2-4 mm)	PRO2000-08
SIGEOM	Texture	GP	Graphique	PRO2000-08
SIGEOM	Texture	GV	Griffon	PRO2000-08
SIGEOM	Texture	HA	Harrisitic	PRO2000-08
SIGEOM	Texture	HE	Hélicitique	PRO2000-08
SIGEOM	Texture	HU	Hétéradcumulat	PRO2000-08
SIGEOM	Texture	HB	Hétéroblastique	PRO2000-08
SIGEOM	Texture	HK	Hétérogène	PRO2000-08
SIGEOM	Texture	HG	Hétérogranulaire	PRO2000-08
SIGEOM	Texture	HC	Holocristallin(e)	PRO2000-08
SIGEOM	Texture	HH	Holohyalin(e)	PRO2000-08
SIGEOM	Texture	HL	Hololeucocrate	PRO2000-08
SIGEOM	Texture	HM	Holomélanocrate	PRO2000-08
SIGEOM	Texture	HQ	Homéoblastique	PRO2000-08
SIGEOM	Texture	HJ	Homogène	PRO2000-08
SIGEOM	Texture	HT	Homotactique	PRO2000-08
SIGEOM	Texture	HY	Hyaloclastites	PRO2000-08
SIGEOM	Texture	HR	Hyaloclastites remaniées	PRO2000-08
SIGEOM	Texture	HP	Hyalopilitique	PRO2000-08
SIGEOM	Texture	TH	Hyalotuf	PRO2000-08
SIGEOM	Texture	HD	Hypidiomorphe	PRO2000-08
SIGEOM	Texture	HX	Hypocristallin(e)	PRO2000-08
SIGEOM	Texture	IM	Imbrication de cailloux, blocs	PRO2000-08
SIGEOM	Texture	IP	Imprégnation	PRO2000-08
SIGEOM	Texture	IS	Intersertale	PRO2000-08
SIGEOM	Texture	IT	Intraclastes (à)	PRO2000-08
SIGEOM	Texture	IR	Intraformationnel(le)	PRO2000-08
SIGEOM	Texture	IU	Intrusif(ve) / injection	PRO2000-08
SIGEOM	Texture	IC	Iridescence	PRO2000-08
SIGEOM	Texture	IL	Isolés	PRO2000-08
SIGEOM	Texture	JC	Joints en colonnes	PRO2000-08
SIGEOM	Texture	KR	Karstique	PRO2000-08
SIGEOM	Texture	LU	Labradorescence	PRO2000-08
SIGEOM	Texture	LA	Laminaire (laminé)	PRO2000-08
SIGEOM	Texture	LC	Laminations convolutées	PRO2000-08
SIGEOM	Texture	CP	Laminations cryptalgaires	PRO2000-08
SIGEOM	Texture	LQ	Laminations obliques	PRO2000-08
SIGEOM	Texture	LO	Laminations ondulantes	PRO2000-08
SIGEOM	Texture	LL	Laminations ondulantes lenticulaires	PRO2000-08
SIGEOM	Texture	LP	Laminations parallèles	PRO2000-08
SIGEOM	Texture	LI	Lapilli (à)	PRO2000-08
SIGEOM	Texture	TO	Lapillistone	PRO2000-08
SIGEOM	Texture	LT	Lattes (en)	PRO2000-08
SIGEOM	Texture	LV	Lave / coulée de lave	PRO2000-08
SIGEOM	Texture	LK	Lave en blocs	PRO2000-08
SIGEOM	Texture	LF	Lépidoblastique	PRO2000-08
SIGEOM	Texture	LX	Leucocrate	PRO2000-08
SIGEOM	Texture	LS	Leucosome	PRO2000-08
SIGEOM	Texture	SA	Lité(e), stratifié(e)	PRO2000-08
SIGEOM	Texture	AG	Lits amalgamés	PRO2000-08
SIGEOM	Texture	LN	Lits d'épaisseur moyenne (10 à 25 cm)	PRO2000-08
SIGEOM	Texture	LG	Lits épais (>25 cm)	PRO2000-08
SIGEOM	Texture	LD	Lits lenticulaires	PRO2000-08
SIGEOM	Texture	LM	Lits minces (1-10 cm)	PRO2000-08
SIGEOM	Texture	LB	Lobe	PRO2000-08
SIGEOM	Texture	MC	Mégacoussins (à)	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	MP	Mégaporphyrique	PRO2000-08
SIGEOM	Texture	MX	Mélanocrate	PRO2000-08
SIGEOM	Texture	MS	Mélanosome	PRO2000-08
SIGEOM	Texture	MK	Mésocrate	PRO2000-08
SIGEOM	Texture	MF	Mésocumulat	PRO2000-08
SIGEOM	Texture	ME	Métamorphisé	PRO2000-08
SIGEOM	Texture	ML	Miarolitique	PRO2000-08
SIGEOM	Texture	MT	Micritique	PRO2000-08
SIGEOM	Texture	MB	Microbrèche	PRO2000-08
SIGEOM	Texture	MI	Microlitique	PRO2000-08
SIGEOM	Texture	MR	Microporphyrique	PRO2000-08
SIGEOM	Texture	MU	Minicoussins (à)	PRO2000-08
SIGEOM	Texture	MZ	Mobilisat	PRO2000-08
SIGEOM	Texture	MM	Monogénique «Monomictic»	PRO2000-08
SIGEOM	Texture	MO	Mosaïque	PRO2000-08
SIGEOM	Texture	MN	Mylonitique	PRO2000-08
SIGEOM	Texture	MY	Myrmékitique	PRO2000-08
SIGEOM	Texture	NB	Nébulitique	PRO2000-08
SIGEOM	Texture	NE	Nématoblastique	PRO2000-08
SIGEOM	Texture	NS	Néosome	PRO2000-08
SIGEOM	Texture	NY	Noyaux	PRO2000-08
SIGEOM	Texture	OC	Ocellaire	PRO2000-08
SIGEOM	Texture	OE	Oeillé(e)	PRO2000-08
SIGEOM	Texture	OI	Olikocryst (à)	PRO2000-08
SIGEOM	Texture	OO	Oolitique	PRO2000-08
SIGEOM	Texture	OP	Ophitique	PRO2000-08
SIGEOM	Texture	OR	Orbiculaire	PRO2000-08
SIGEOM	Texture	OU	Orthocumulat	PRO2000-08
SIGEOM	Texture	PS	Paléosome	PRO2000-08
SIGEOM	Texture	PE	Paléosurface d'érosion	PRO2000-08
SIGEOM	Texture	PA	Panidiomorphe	PRO2000-08
SIGEOM	Texture	PV	Patron d'interférence	PRO2000-08
SIGEOM	Texture	PG	Pegmatitique	PRO2000-08
SIGEOM	Texture	PL	Pellets (à)	PRO2000-08
SIGEOM	Texture	PD	Péloïdes	PRO2000-08
SIGEOM	Texture	PT	Perlitique	PRO2000-08
SIGEOM	Texture	LR	Peu serrés (loosely packed)	PRO2000-08
SIGEOM	Texture	PH	Phanéritique	PRO2000-08
SIGEOM	Texture	PI	Phénocristique	PRO2000-08
SIGEOM	Texture	PZ	Plis pygmiques	PRO2000-08
SIGEOM	Texture	PU	Plutonique	PRO2000-08
SIGEOM	Texture	PC	Poecilitique	PRO2000-08
SIGEOM	Texture	PB	Poeciloblastique	PRO2000-08
SIGEOM	Texture	PM	Polygénique /«polymictic»	PRO2000-08
SIGEOM	Texture	PN	Ponce	PRO2000-08
SIGEOM	Texture	PP	Porphyre	PRO2000-08
SIGEOM	Texture	PO	Porphyrique	PRO2000-08
SIGEOM	Texture	PQ	Porphyroblastique	PRO2000-08
SIGEOM	Texture	PJ	Porphyroclastique	PRO2000-08
SIGEOM	Texture	PX	Prismatique	PRO2000-08
SIGEOM	Texture	PF	Protoclastique	PRO2000-08
SIGEOM	Texture	PR	Pyroclastique	PRO2000-08
SIGEOM	Texture	RO	Radeaux (en)	PRO2000-08
SIGEOM	Texture	RK	Rapakivique	PRO2000-08
SIGEOM	Texture	RG	Régolite	PRO2000-08
SIGEOM	Texture	RN	Remanié(e)	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	RL	Remplacement	PRO2000-08
SIGEOM	Texture	RF	Réniforme	PRO2000-08
SIGEOM	Texture	RE	Réticulé(e)	PRO2000-08
SIGEOM	Texture	RC	Rides de courant	PRO2000-08
SIGEOM	Texture	RP	Rides de plage	PRO2000-08
SIGEOM	Texture	RM	Rill mark(s)	PRO2000-08
SIGEOM	Texture	RI	Rip-up clast(s)	PRO2000-08
SIGEOM	Texture	RQ	Ruban de quartz	PRO2000-08
SIGEOM	Texture	RU	Rubané(e)	PRO2000-08
SIGEOM	Texture	RA	Rubanement concentrique	PRO2000-08
SIGEOM	Texture	LJ	Rubanement de diffusion («Liesegang rings»)	PRO2000-08
SIGEOM	Texture	RS	Rubanement symétrique	PRO2000-08
SIGEOM	Texture	RT	Rubanement tectonique	PRO2000-08
SIGEOM	Texture	SD	Saccaroïdale (granoblastique)	PRO2000-08
SIGEOM	Texture	SC	Schisteux	PRO2000-08
SIGEOM	Texture	SH	Schlieren	PRO2000-08
SIGEOM	Texture	SR	Scoriacé(e)	PRO2000-08
SIGEOM	Texture	SV	shatter cone	PRO2000-08
SIGEOM	Texture	SL	Slump	PRO2000-08
SIGEOM	Texture	SM	Sommital(e)	PRO2000-08
SIGEOM	Texture	SP	Sphérolitique	PRO2000-08
SIGEOM	Texture	SX	Spinifex (à)	PRO2000-08
SIGEOM	Texture	SN	Stratifications / laminations obliques planaires	PRO2000-08
SIGEOM	Texture	SQ	Stratifications / laminations obliques tangentielles	PRO2000-08
SIGEOM	Texture	SF	Stratifications entrecroisées defosse	PRO2000-08
SIGEOM	Texture	ST	Stratifié(e) / stratiforme	PRO2000-08
SIGEOM	Texture	SG	Streaky mafiques en trait	PRO2000-08
SIGEOM	Texture	SI	Strie	PRO2000-08
SIGEOM	Texture	SK	Stromatic	PRO2000-08
SIGEOM	Texture	SU	Stromatolitique	PRO2000-08
SIGEOM	Texture	DW	Structure «durchbewegung »	PRO2000-08
SIGEOM	Texture	ET	Structure de percement («percement»)	PRO2000-08
SIGEOM	Texture	PW	Structure en peigne («comb»)	PRO2000-08
SIGEOM	Texture	SY	Stylolites	PRO2000-08
SIGEOM	Texture	SO	Subophitique	PRO2000-08
SIGEOM	Texture	SE	Surface d'érosion	PRO2000-08
SIGEOM	Texture	TA	Tabulaire	PRO2000-08
SIGEOM	Texture	TT	Talus (de)	PRO2000-08
SIGEOM	Texture	TE	Tectonique	PRO2000-08
SIGEOM	Texture	YH	Tectonique hétéroclastique	PRO2000-08
SIGEOM	Texture	YL	Tectonite en L	PRO2000-08
SIGEOM	Texture	YS	Tectonite en L/S	PRO2000-08
SIGEOM	Texture	YZ	Tectonite en S	PRO2000-08
SIGEOM	Texture	YM	Tectonite homoclastique	PRO2000-08
SIGEOM	Texture	TF	Tracesfossiles (trous de vers, etc.)	PRO2000-08
SIGEOM	Texture	TR	Trachytique / trachytoïde	PRO2000-08
SIGEOM	Texture	TP	Trempe (de)	PRO2000-08
SIGEOM	Texture	TM	Tuf à blocs	PRO2000-08
SIGEOM	Texture	TZ	Tuf à blocs et tuf à lapilli	PRO2000-08
SIGEOM	Texture	TD	Tuf à cendre	PRO2000-08
SIGEOM	Texture	TX	Tuf à cristaux	PRO2000-08
SIGEOM	Texture	TL	Tuf à lapilli	PRO2000-08
SIGEOM	Texture	TY	Tuf à lapilli et tuf à blocs	PRO2000-08
SIGEOM	Texture	TC	Tuf cherteux	PRO2000-08
SIGEOM	Texture	TG	Tuf graphiteux	PRO2000-08
SIGEOM	Texture	TI	Tuf lithique	PRO2000-08

Source	Domaine	Code	Signification	Référence
SIGEOM	Texture	TS	Tuf soudé	PRO2000-08
SIGEOM	Texture	TU	Tufacé	PRO2000-08
SIGEOM	Texture	TB	Turbidite (voir guide des géofiches)	PRO2000-08
SIGEOM	Texture	VA	Variolitique	PRO2000-08
SIGEOM	Texture	VE	Vesiculaire	PRO2000-08
SIGEOM	Texture	VI	Vitreux(se)	PRO2000-08
SIGEOM	Texture	VO	Volcanique	PRO2000-08
SIGEOM	Texture	VC	Volcanoclastites	PRO2000-08
SIGEOM	Texture	XB	Xénoblastique	PRO2000-08
SIGEOM	Texture	XM	Xénomorphe	PRO2000-08
SIGEOM	Texture	ZS	Zone de cisaillement	PRO2000-08
SIGEOM	Texture	ZC	Zone de contact	PRO2000-08
SIGEOM	Texture	ZD	Zone de déformation	PRO2000-08
SIGEOM	Texture	ZF	Zone de faille	PRO2000-08
SIGEOM	Texture	ZM	Zone minéralisée	PRO2000-08
SIGEOM	Texture	ZR	Zone rouillée	PRO2000-08
SIGEOM	Texture	AI	Amas irréguliers, agrégats	PRO2000-08
SIGEOM	Texture	OL	Colloforme	PRO2000-08
SIGEOM	Texture	CC	Concrétion(s) nodules	PRO2000-08
SIGEOM	Texture	DT	Dendritique	PRO2000-08
SIGEOM	Texture	DI	Disséminé	PRO2000-08
SIGEOM	Texture	FN	Filonien	PRO2000-08
SIGEOM	Texture	RB	Framboïdal	PRO2000-08
SIGEOM	Texture	ID	Idiomorphe	PRO2000-08
SIGEOM	Texture	IG	Intergranulaire	PRO2000-08
SIGEOM	Texture	LE	Lenticulaire	PRO2000-08
SIGEOM	Texture	MA	Massif(ve)	PRO2000-08
SIGEOM	Texture	NO	Nodulaire	PRO2000-08
VIA	Texture	SSM	Semi-Massif	
SIGEOM	Texture	SW	Stockwerk	PRO2000-08
SIGEOM	Texture	SJ	Stratoïde («stratabound»)	PRO2000-08
SIGEOM	Texture	SS	Stringer	PRO2000-08
SIGEOM	Texture	PY	Structure en cocarde (crustification , «cockade»)	PRO2000-08
VIA	Texture	VN	Veine	

APPENDIX 3. DESCRIPTION OF OUTCROPS AND BOULDERS, TRIESTE PROJECT

**INFORMATION AVAILABLE UPON REQUEST  
SUBMITTED TO VIRGINIA MINES INC.**

**[info@minesvirginia.com](mailto:info@minesvirginia.com)**

**Toll free number: 800 476-1853**

APPENDIX 4.ROCK SAMPLES LIST, TRIESTE PROJECT

**INFORMATION AVAILABLE UPON REQUEST  
SUBMITTED TO VIRGINIA MINES INC.**

**[info@minesvirginia.com](mailto:info@minesvirginia.com)**

**Toll free number: 800 476-1853**



APPENDIX 5. DESCRIPTION OF CHANNEL SAMPLING

**INFORMATION AVAILABLE UPON REQUEST  
SUBMITTED TO VIRGINIA MINES INC.**

**[info@minesvirginia.com](mailto:info@minesvirginia.com)**

**Toll free number: 800 476-1853**

## APPENDIX 6. QUALITY CONTROLS, ASSAYS

**QC-QA Blank samples, Trieste project, Summer 2012**

sample	certificate	Au_ppm	Ag_ppm	Cu_ppm	Zn_ppm	Comment
271712	VO12201565	<0,005	<0,2	<1	9	Ok
271732	VO12198899	<0,005	<0,2	1	27	Ok
271752	VO12200523	<0,005	<0,2	1	14	Ok
271772	VO12200524	<0,005	<0,2	3	24	Ok
271792	VO12200525	<0,005	<0,2	9	30	Ok
271812	VO12187277	<0,005	0,2	<1	9	Ok
271832	VO12187275	<0,005	<0,2	1	9	Ok
271852	VO12211102	<0,005	<0,2	<1	14	Ok
272712	VO12163271	0,005	<0,2	<1	9	Ok
272732	VO12162449	<0,005	0,2	3	17	Ok
272752	VO12163273	<0,005	<0,2	<1	62	Ok
272772	VO12171061	<0,005	<0,2	<1	28	Ok
272792	VO12171063	<0,005	<0,2	1	12	Ok
273112	VO12163272	0,006	<0,2	1	11	Ok
273132	VO12163110	<0,005	<0,2	<1	16	Ok
273152	VO12171060	<0,005	<0,2	<1	21	Ok
273312	VO12175517	<0,005	0,3	1	56	Ok
273332	VO12175518	<0,005	<0,2	<1	11	Ok
273352	VO12186289	0,007	<0,2	<1	16	Ok
273372	VO12187271	0,005	0,2	3	19	Ok
273392	VO12187272	<0,005	<0,2	1	18	Ok
273412	VO12187270	<0,005	0,3	3	8	Ok
273432	VO12187273	<0,005	<0,2	1	11	Ok
273452	VO12187274	<0,005	<0,2	1	14	Ok
273472	VO12187276	<0,005	<0,2	1	8	Ok
274012	VO12198896	<0,005	<0,2	2	10	Ok
274032	VO12198897	<0,005	<0,2	1	16	Ok
274052	VO12198898	<0,005	0,2	<1	11	Ok
274072	VO12201288	<0,005	<0,2	1	17	Ok
274092	VO12200527	0,122	<0,2	1	17	Failure

### QC-QA. Duplicate results, Trieste project, Summer 2012

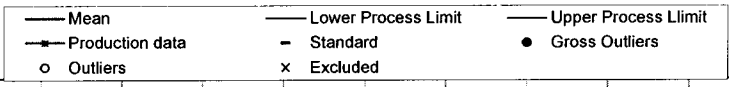
No tag	Certificate	type	Au_ppm	Ag_ppm	Cu_ppm	Status
271719	VO12201565	Expected duplicate result	-0,005	-0,2	47	
271720	VO12201565	271719	-0,005	-0,2	48	
			0	0	-1	ok
271739	VO12198899	Expected duplicate result	-0,005	-0,2	46	
271740	VO12198899	271739	-0,005	-0,2	46	
			0	0	0	ok
271759	VO12200523	Expected duplicate result	0,039	0,8	374	
271760	VO12200523	271759	0,053	1,1	460	
			-0,014	-0,3	-86	ok
271779	VO12200524	Expected duplicate result	-0,005	-0,2	11	
271780	VO12200524	271779	-0,005	-0,2	10	
			0	0	1	ok
271799	VO12200525	Expected duplicate result	-0,005	0,2	23	
271800	VO12200525	271799	-0,005	0,2	24	
			0	0	-1	ok
271819	VO12187277	Expected duplicate result	-0,005	-0,2	33	
271820	VO12187277	271819	-0,005	0,2	33	
			0	-0,4	0	ok
271839	VO12187275	Expected duplicate result	0,008	-0,2	37	
271840	VO12187275	271839	0,011	-0,2	43	
			-0,003	0	-6	ok
271859	VO12211102	Expected duplicate result	0,039	-0,2	39	
271860	VO12211102	271859	0,03	-0,2	7	
			0,009	0	32	ok
272719	VO12163271	Expected duplicate result	1,55	-0,2	165	
272720	VO12163271	272719	2,26	0,3	163	
			-0,71	-0,5	2	Failure
272739	VO12162449	Expected duplicate result	0,07	-0,2	94	
272740	VO12162449	272739	-0,005	-0,2	92	
			0,075	0	2	ok
272759	VO12163273	Expected duplicate result	-0,005	-0,2	19	
272760	VO12163273	272759	-0,005	-0,2	17	
			0	0	2	ok
272779	VO12171061	Expected duplicate result	0,006	0,3	25	
272780	VO12171061	272779	0,007	0,3	25	
			-0,001	0	0	ok
273119	VO12163272	Expected duplicate result	0,007	-0,2	75	
273120	VO12163272	273119	0,008	-0,2	72	
			-0,001	0	3	ok
273139	VO12163110	Expected duplicate result	0,006	-0,2	115	
273140	VO12163110	273139	0,009	-0,2	136	
			-0,003	0	-21	ok
273159	VO12171060	Expected duplicate result	0,02	-0,2	62	
273160	VO12171060	273159	0,009	-0,2	60	

No tag	Certificate	type	Au_ppm	Ag_ppm	Cu_ppm	Status
			0,011	0	2	ok
273319	VO12175517	Expected duplicate result	0,038	0,3	125	
273320	VO12175517	273319	0,052	0,3	121	
			-0,014	0	4	ok
273339	VO12175518	Expected duplicate result	0,015	-0,2	35	
273340	VO12175518	273339	0,006	-0,2	36	
			0,009	0	-1	ok
273359	VO12186289	Expected duplicate result	0,008	-0,2	46	
273360	VO12186289	273359	0,005	-0,2	46	
			0,003	0	0	ok
273379	VO12187271	Expected duplicate result	0,007	-0,2	35	
273380	VO12187271	273379	0,011	-0,2	35	
			-0,004	0	0	ok
273399	VO12187272	Expected duplicate result	-0,005	-0,2	48	
273400	VO12187272	273399	-0,005	-0,2	48	
			0	0	0	ok
273419	VO12187270	Expected duplicate result	-0,005	-0,2	48	
273420	VO12187270	273419	-0,005	-0,2	49	
			0	0	-1	ok
273439	VO12187273	Expected duplicate result	-0,005	-0,2	22	
273440	VO12187273	273439	-0,005	-0,2	22	
			0	0	0	ok
273459	VO12187274	Expected duplicate result	0,01	-0,2	31	
273460	VO12187274	273459	0,005	-0,2	29	
			0,005	0	2	ok
273479	VO12187276	Expected duplicate result	0,007	-0,2	18	
273480	VO12187276	273479	0,01	-0,2	18	
			-0,003	0	0	ok
274019	VO12198896	Expected duplicate result	0,005	-0,2	32	
274020	VO12198896	274019	0,005	-0,2	37	
			0	0	-5	ok
274039	VO12198897	Expected duplicate result	-0,005	-0,2	50	
274040	VO12198897	274039	-0,005	-0,2	48	
			0	0	2	ok
274059	VO12198898	Expected duplicate result	-0,005	0,3	93	
274060	VO12198898	274059	-0,005	0,3	89	
			0	0	4	ok
274079	VO12201288	Expected duplicate result	0,159	-0,2	32	
274080	VO12201288	274079	0,122	-0,2	27	
			0,037	0	5	ok
274099	VO12200527	Expected duplicate result	0,013	0,3	52	
274100	VO12200527	274099	0,016	0,3	52	
			-0,003	0	0	ok

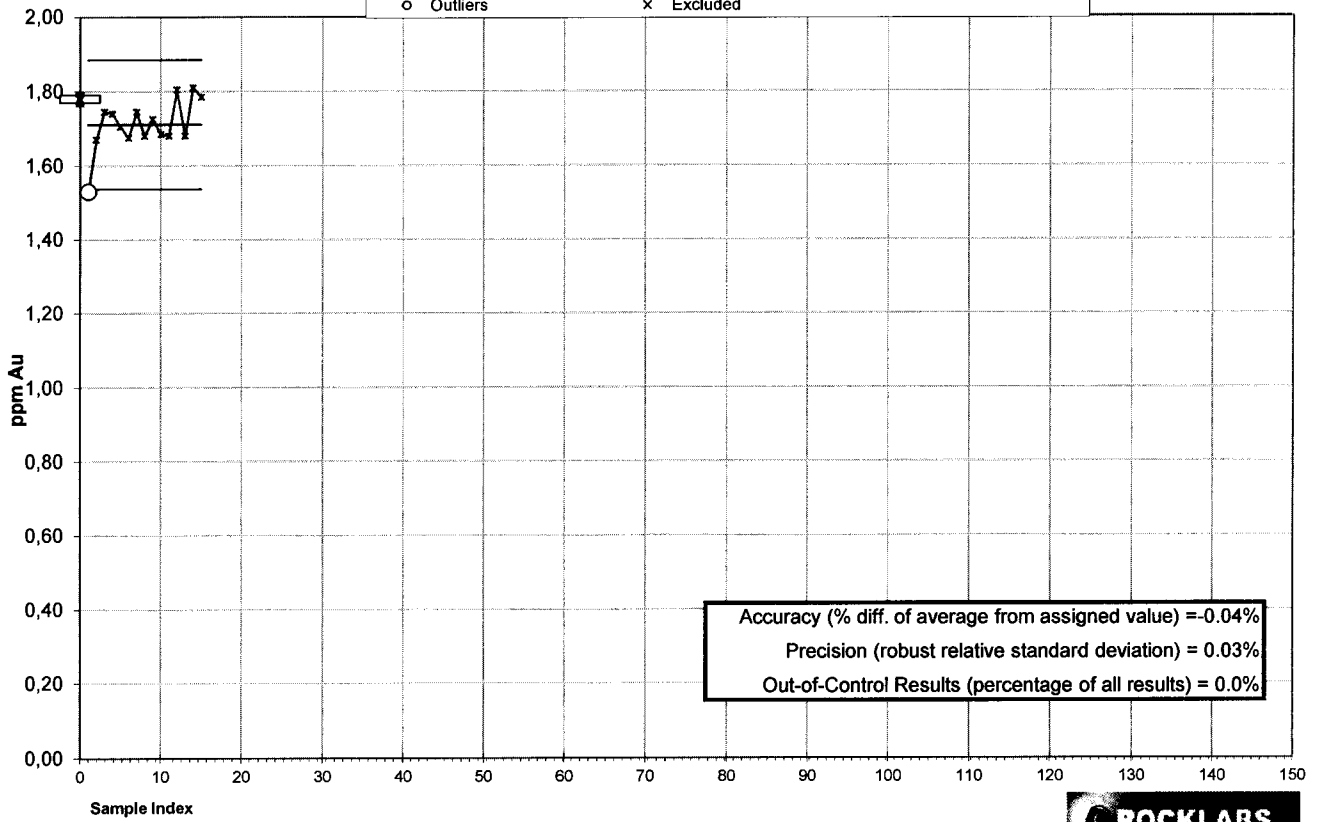
**QC-QA. Certified material results, Trieste project, Summer 2012**

Sample	Certificate	Reference material type	Certified gold concentration	Standard deviation	3x Standard deviation	ALS-Chemex result (ppm)	Difference ppm	Difference %	Comments
272705	VO12163271	SI54	1,78	0,034	0,102	1,765	0,015	0,84	Ok
272725	VO12162449	SI54	1,78	0,034	0,102	1,675	<b>0,105</b>	<b>5,90</b>	Failure
272745	VO12163273	SI54	1,78	0,034	0,102	1,715	0,065	3,65	Ok
272765	VO12171061	SI54	1,78	0,034	0,102	1,395	<b>0,385</b>	<b>21,63</b>	Failure
271705	VO12201565	SI64	1,78	0,042	0,126	1,53	<b>0,25</b>	<b>14,04</b>	Failure
271745	VO12200523	SI64	1,78	0,042	0,126	1,67	0,11	6,18	Ok
273105	VO12163272	SI64	1,78	0,042	0,126	1,745	0,035	1,97	Ok
273145	VO12171060	SI64	1,78	0,042	0,126	1,74	0,04	2,25	Ok
273305	VO12175517	SI64	1,78	0,042	0,126	1,705	0,075	4,21	Ok
273345	VO12186289	SI64	1,78	0,042	0,126	1,675	0,105	5,90	Ok
273365	VO12187271	SI64	1,78	0,042	0,126	1,745	0,035	1,97	Ok
273405	VO12187270	SI64	1,78	0,042	0,126	1,68	0,1	5,62	Ok
273445	VO12187274	SI64	1,78	0,042	0,126	1,725	0,055	3,09	Ok
273465	VO12187276	SI64	1,78	0,042	0,126	1,685	0,095	5,34	Ok
274005	VO12198896	SI64	1,78	0,042	0,126	1,68	0,1	5,62	Ok
274025	VO12198897	SI64	1,78	0,042	0,126	1,805	-0,025	1,40	Ok
274045	VO12198898	SI64	1,78	0,042	0,126	1,68	0,1	5,62	Ok
274065	VO12201288	SI64	1,78	0,042	0,126	1,81	-0,03	1,69	Ok
274305	VO12200527	SI64	1,78	0,042	0,126	1,785	-0,005	0,28	Ok
272785	VO12171063	Sk62	4,075	0,042	0,126	4,12	-0,045	1,10	Ok
271765	VO12200524	Sk62	4,075	0,14	0,42	4,21	-0,135	3,31	Ok
271785	VO12200525	Sk62	4,075	0,14	0,42	3,77	0,305	7,48	Ok
271805	VO12187277	Sk62	4,075	0,14	0,42	4,03	0,045	1,10	Ok
271825	VO12187275	Sk62	4,075	0,14	0,42	4,1	-0,025	0,61	Ok
271845	VO12211102	Sk62	4,075	0,14	0,42	3,72	0,355	8,71	Ok
273125	VO12163110	SK62	4,075	0,14	0,42	3,84	0,235	5,77	Ok
273165	VO12175516	SK62	4,075	0,14	0,42	3,89	0,185	4,54	Ok
273325	VO12175518	Sk62	4,075	0,14	0,42	3,85	0,225	5,52	Ok
273385	VO12187272	Sk62	4,075	0,14	0,42	3,98	0,095	2,33	Ok
274085	VO12200527	SK62	4,075	0,14	0,42	4,15	-0,075	1,84	Ok
274205	VO12200526	Sk62	4,075	0,14	0,42	4,21	-0,135	3,31	Ok
273425	VO12187273	Sk62	4,075	0,14	0,42	6,68	<b>-2,605</b>	<b>63,93</b>	Failure

Process Performance Chart

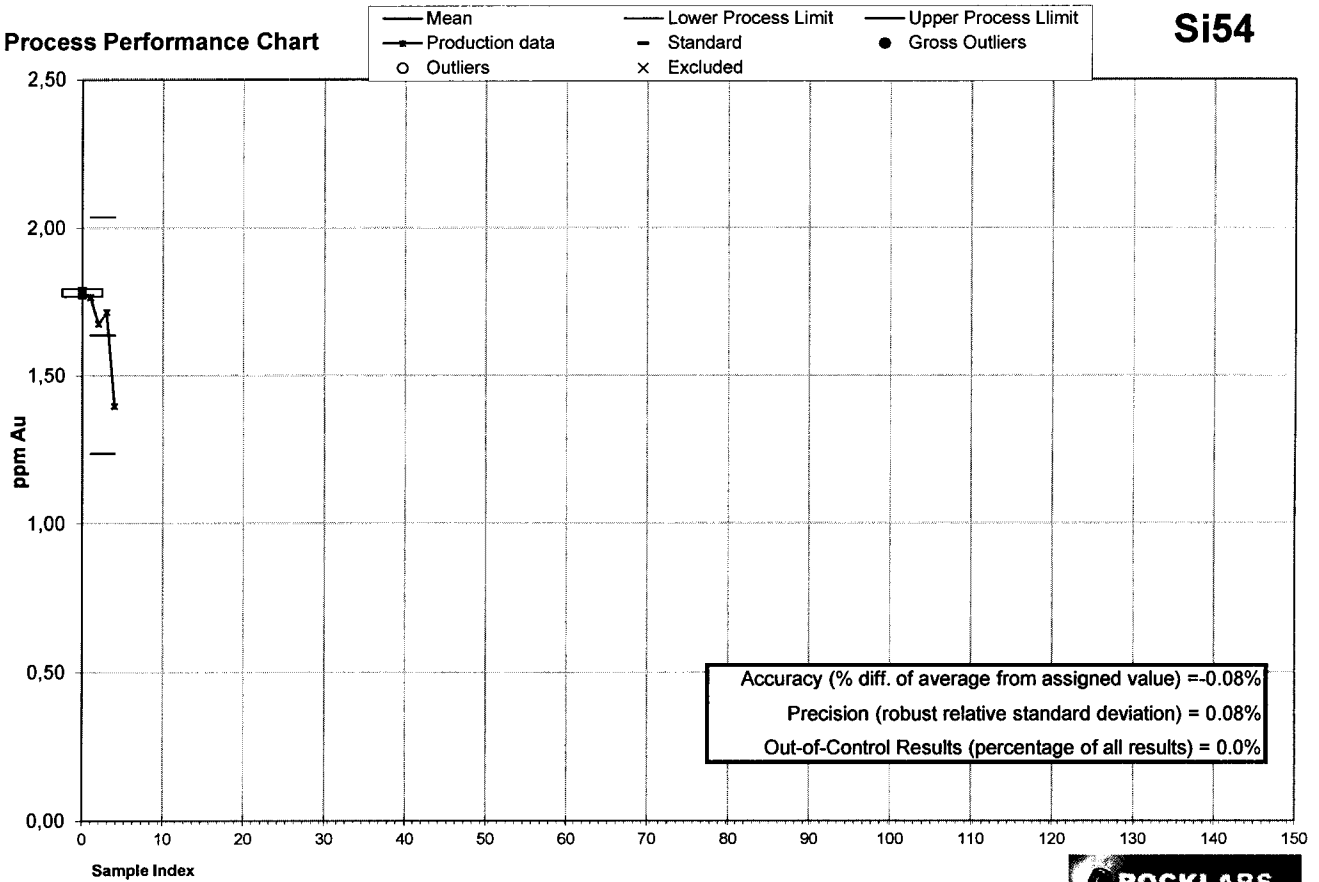


Si64



### Process Performance Chart

Si54

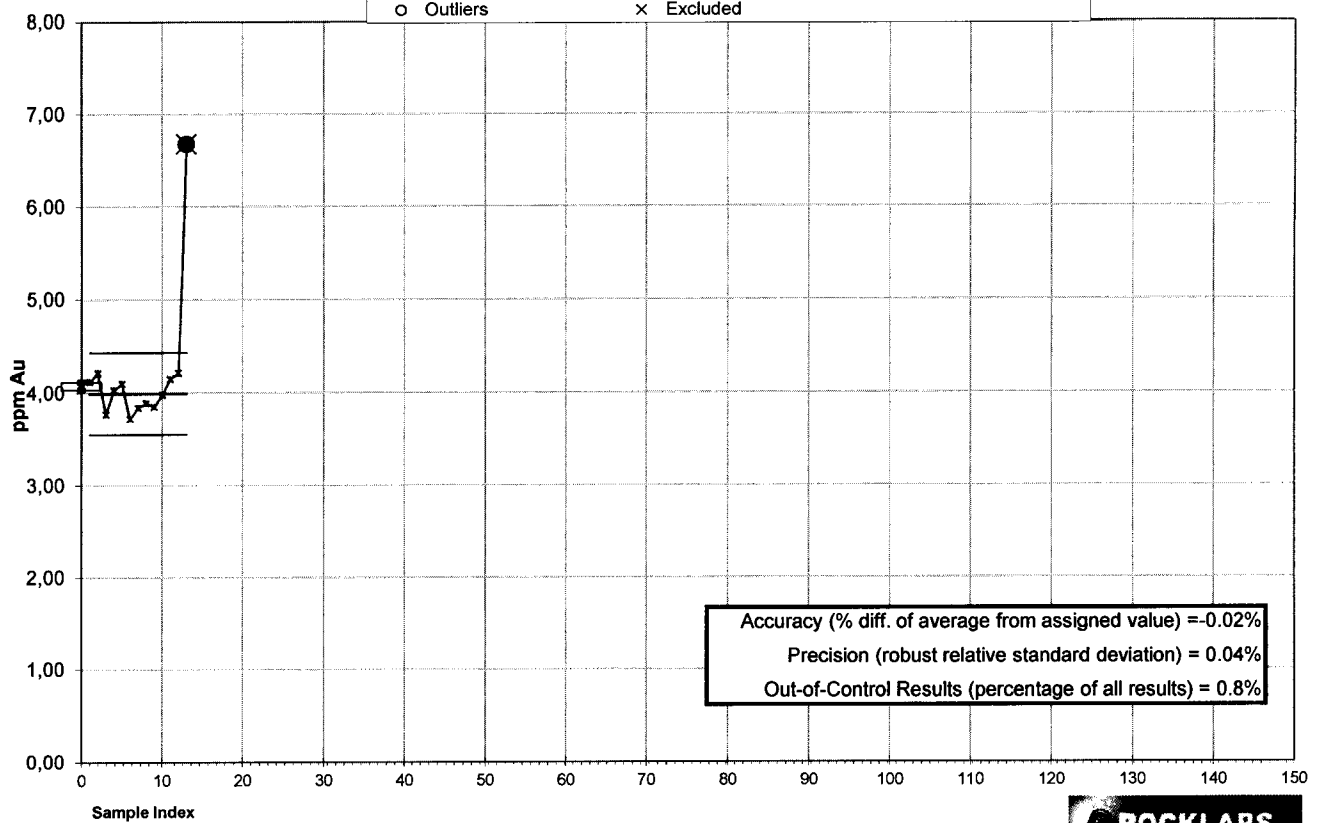




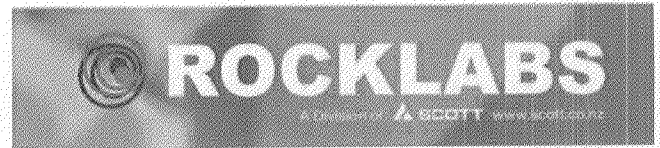
### Process Performance Chart

- Mean
- Lower Process Limit
- Upper Process Limit
- Production data
- Standard
- Gross Outliers
- Outliers
- × Excluded

**Sk62**



P.O Box 18-142, Glen Innes 1743  
Auckland, New Zealand.  
P 64 9 634 7696  
F 64 9 634 6896  
E sales@rocklabs.com  
www.rocklabs.com



# Certificate of Analysis

## Reference Material Si64

**Recommended Gold Concentration: 1.780 µg/g**  
**95% Confidence Interval: +/- 0.013 µg/g**

The above values apply only to product in jars or sachets which have an identification number within the following range: **265 719 – 268 281.**

**Prepared and Certified By:**

Malcolm Smith BSc, FNZIC  
Rocklabs Reference Materials  
40 Oakford Park Crescent, Greenhithe  
Auckland 0632  
**NEW ZEALAND**  
Email: [Malcolm@MSRML.co.nz](mailto:Malcolm@MSRML.co.nz)  
Telephone: +64 9 444 3534

**Date of Certification:**

9 March 2012

**Certificate Status:**

Original

**Available Packaging:**

This reference material has been packed in wide-mouthed jars that contain 2.5 kg of product. The contents of some jars may be subsequently repacked into sealed polyethylene sachets.

**Origin of Reference Material:**

Feldspar minerals, basalt and iron pyrites with minor quantities of finely divided gold-containing minerals that have been screened to ensure there is no gold nugget effect.

**Supplier of Reference Material:**

ROCKLABS  
P O Box 18 142  
Glen Innes  
Auckland 1743  
**NEW ZEALAND**  
Email: [reference-materials@rocklabs.com](mailto:reference-materials@rocklabs.com)  
Website: [www.rocklabs.com](http://www.rocklabs.com)

**Description:**

The reference material is a light grey powder that has been well mixed and a homogeneity test carried out after the entire batch was packaged into wide-mouthed jars. There is no soil component. The product contains crystalline quartz and therefore dust from it should not be inhaled.

The approximate chemical composition is:  
(Uncertified Values)

	%
SiO <sub>2</sub>	55.13
Al <sub>2</sub> O <sub>3</sub>	16.23
Na <sub>2</sub> O	4.87
K <sub>2</sub> O	4.46
CaO	3.65
MgO	3.40
TiO <sub>2</sub>	0.94
MnO	0.07
P <sub>2</sub> O <sub>5</sub>	0.22
Fe <sub>2</sub> O <sub>3</sub>	4.82
Fe	2.7
S	3.0

**Intended Use:**

This reference material is designed to be included with every batch of samples analysed and the results plotted for quality monitoring and assessment purposes.

**Stability:**

The container (jar or sachet) should not be heated to temperatures higher than 50 °C. Iron pyrites are likely to oxidize in the air but tests have shown that the increase in weight of an exposed reference material of similar matrix, in the Auckland climate, is less than 0.1% per year.

**Method of Preparation:**

Pulverized feldspar minerals, basalt rock and barren iron pyrites were blended with finely pulverized and screened gold-containing minerals. Once the powders were uniformly mixed the composite was placed into 2563 wide-mouthed jars, each bearing a unique number. 54 jars were randomly selected from the packaging run and material from these jars was used for both homogeneity and consensus testing.

**Homogeneity Assessment:**

An independent laboratory carried out gold analysis by fire assay of 30 g portions, using an AAS finish. Steps were taken to minimize laboratory method variation in order to better detect any variation in the candidate reference material.

The contents of six randomly selected jars were compacted by vibration (to simulate the effect of freighting) and five samples removed successively from top to bottom from each jar. In addition, five samples were removed from the last jar in the series. A sample was also removed from the top of each of the 54 jars randomly selected from the 2563 jars in the batch. The results of analysis of the 89 samples (randomly ordered and then consecutively numbered before being sent to the laboratory) produced a relative standard deviation of 1.2 %.

**Analytical Methodology:**

Once homogeneity had been established, two sub-samples were submitted to a number of well-recognized laboratories in order to assign a gold value by consensus testing. The sub-samples were drawn from the 54 randomly selected jars and each laboratory received samples from two different jars. Indicative concentration ranges were given. All laboratories used fire assay for the gold analysis, with most using an instrument finish and 3 using a gravimetric finish.

**Calculation of Certified Value:**

Results for gold were returned from 50 laboratories. Statistical analysis to identify outliers was carried out using the principles detailed in sections 7.3.2 – 7.3.4, ISO 5725-2: 1994. Assessment of each laboratory's performance was carried out on the basis of z-scores, partly based on the concept described in ISO/IEC Guide 43-1. Details of the criteria used in these examinations are available on request. As a result of these statistical analyses, nine sets of results were excluded for the purpose of assigning a gold concentration value to this reference material. A recommended value was thus calculated from the average of the remaining  $n = 41$  sets of replicate results. The 95 % confidence interval was estimated using the formula:-

$$X \pm ts/\sqrt{n}$$

(where X is the estimated average, s is the estimated standard deviation of the laboratory averages, and t is the 0.025 tail-value from Student's t-distribution with  $n-1$  degrees of freedom). The recommended value is provided at the beginning of the certificate in  $\mu\text{g/g}$  (ppm) units. A summary of the results used to calculate the recommended value is listed on page 4 and the names of the laboratories that submitted results are listed on page 5. The results are listed in increasing order of the individual laboratory averages.

Statistical analysis of the consensus test results has been carried out by independent statistician, Tim Ball.

**Summary of Results Used to Calculate Gold Value**  
(Listed in increasing order of individual laboratory averages)

<b>Gold (ppm)</b>		
<b>Sample 1</b>	<b>Sample 2</b>	<b>Average</b>
1.726	1.702	1.714
1.723	1.720	1.722
1.76	1.6845	1.722
1.733	1.714	1.724
1.710	1.745	1.728
1.701	1.754	1.728
1.741	1.726	1.734
1.73	1.75	1.740
1.73	1.76	1.745
1.73	1.76	1.745
1.770	1.734	1.752
1.740	1.770	1.755
1.731	1.783	1.757
1.760	1.757	1.758
1.790	1.740	1.765
1.76	1.77	1.765
1.725	1.806	1.766
1.78	1.76	1.770
1.76	1.78	1.770
1.768	1.775	1.772
1.755	1.790	1.773
1.773	1.775	1.774
1.75	1.81	1.780
1.77	1.79	1.780
1.780	1.790	1.785
1.784	1.794	1.789
1.800	1.780	1.790
1.790	1.800	1.795
1.83	1.78	1.805
1.82	1.79	1.805
1.79	1.82	1.805
1.82	1.80	1.810
1.81	1.81	1.810
1.809	1.822	1.816
1.825	1.825	1.825
1.85	1.80	1.825
1.84	1.82	1.830
1.84	1.87	1.855
1.85	1.86	1.855
1.859	1.860	1.860
1.910	1.880	1.895
Average of 41 sets = 1.780 ppm		
Standard deviation of 41 sets = 0.042 ppm		
<b><u>Note: this standard deviation should not be used as a basis to set control limits when plotting results from an individual laboratory.</u></b>		
Relative standard deviation = 2.4 %		
95% Confidence interval for average = 0.013 ppm		

## Participating Laboratories

<b>Australia</b>	ALS Minerals, Kalgoorlie ALS Minerals, Perth ALS Minerals, Townsville Bureau Veritas Amdel, Adelaide Bureau Veritas Amdel, Kalgoorlie Intertek Genalysis Laboratory Services, Perth SGS Minerals Services, Perth Ultra Trace – Bureau Veritas, Perth
<b>Burkina Faso</b>	ALS Minerals, Burkina Faso Semafo Burkina Faso S.A.
<b>Canada</b>	Acme Analytical Laboratories, Vancouver ALS Minerals, Val d'Or ALS Minerals, Vancouver Loring Laboratories (Alberta) Ltd, Calgary SGS Minerals Services, Lakefield SGS Minerals Services, Vancouver Techni-Lab S.G.B. Abitibi Inc/Actlabs, Québec TSL Laboratories Inc, Saskatoon
<b>Chile</b>	Acme Analytical Laboratories, Santiago ALS Minerals, La Serena
<b>Côte d'Ivoire</b>	Bureau Veritas Mineral Laboratories, Abidjan
<b>Ireland</b>	OMAC Laboratories Ltd
<b>Kyrgyz Republic</b>	Stewart Assay and Environmental Laboratories LLC, Kara-Balta
<b>Mali</b>	ALS Minerals, Bamako
<b>Namibia</b>	Bureau Veritas- Mineral Laboratories, Swakopmund
<b>New Zealand</b>	SGS New Zealand Ltd, Otago SGS New Zealand Ltd, Reefton SGS New Zealand Ltd, Waihi
<b>Peru</b>	ALS Minerals, Lima Inspectorate Services Perú S.A.C., Callao Minera Yanacocha SRL – Newmont, Lima
<b>Romania</b>	ALS Minerals, Rosia Montana
<b>Russia</b>	Irgiredmet Analytical Centre, Irkutsk
<b>South Africa</b>	AB Analytical Laboratory Services, Boksburg ALS Minerals, Modderfontein AngloGold Ashanti, Vaal River Chemical Laboratory - Metallurgy Gold Fields West Wits Analytical Laboratory Performance Laboratories, Allanridge Performance Laboratories, Barberton Performance Laboratories, Randfontein SGS South Africa (Pty) Ltd, Johannesburg
<b>Turkey</b>	Acme Analitik Laboratuar Hizmetleri Ltd, Sirketi ALS Minerals, Izmir
<b>United Kingdom</b>	Inspectorate International, Essex
<b>USA</b>	Acme Analytical Laboratories, Alaska ALS Minerals, Reno Barrick Goldstrike – Met Services Inspectorate, Sparks Newmont Mining Corporation, Carlin Laboratory
<b>Zimbabwe</b>	Performance Laboratories, Ruwa

### **Instructions and Recommendations for Use:**

Weigh out quantity usually used for analysis and analyze for total gold by normal procedure. Homogeneity testing has shown that consistent results are obtainable for gold when 30g portions are taken for analysis.

We quote a 95% confidence interval for our estimate of the declared value. This confidence interval reflects our uncertainty in estimating the true value for the gold content of the reference material. The interval is chosen such that, if the same procedure as used here to estimate the declared value were used again and again, then 95% of the trials would give intervals that contained the true value. It is a reflection of how precise the trial has been in estimating the declared value. It **does not** reflect the variability any particular laboratory will experience in its own repetitive testing.

Some users in the past have misinterpreted this confidence interval as a guide as to how different an individual test result should be from the declared value. Some mistakenly use this interval, or the standard deviation from the consensus test, to set limits for control charts on their own routine test results using the reference material. Such use inevitably leads to many apparent out-of-control points, leading to doubts about the laboratory's testing, or of the reference material itself.

A much better way of determining the laboratory performance when analysing the reference material is to accumulate a history of the test results obtained, and plot them on a control chart. The appropriate centre line and control limits for this chart should be based on the average level and variability exhibited in the laboratory's **own** data. This chart will provide a clear picture of the long-term stability or otherwise of the laboratory testing process, providing good clues as to the causes of any problems. To help our customers do this, we can provide a free Excel template that will produce sensible graphs, with intelligently chosen limits, from the customer's own data.

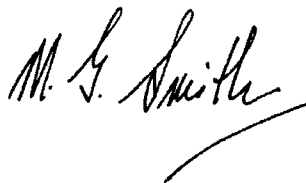
### **Legal Notice:**

This certificate and the reference material described in it have been prepared with due care and attention. However ROCKLABS Ltd, Scott Technology Ltd and Tim Ball Ltd accept no liability for any decisions or actions taken following the use of the reference material.

### **References:**

For further information on the preparation and validation of this reference material please contact Malcolm Smith.

**Certifying Officer**



M G Smith BSc, FNZIC

**Independent Statistician**



Tim Ball BSc (Hons)



# ROCKLABS

WORLD LEADERS IN SAMPLE PREPARATION EQUIPMENT AND REFERENCE MATERIALS FOR USE IN GOLD ASSAYING

ROCKLABS LIMITED

141 MILBORN STREET, ONEHANGA, PO BOX 18-142, GLEN SHIES, AUCKLAND, NEW ZEALAND

Tel: +64 9 634 7696

Fax: +64 9 634 6896

Email: sales@rocklabs.com

Website: www.rocklabs.com

## Certificate of Analysis

### Reference Material SK52

Recommended Gold Concentration: 4.107 µg/g

95% Confidence Interval: +/- 0.029 µg/g

The above values apply only to product in jars or sachets which have an identification number within the following range: *199 587 – 201 299*.

**Prepared and Certified By:**

Malcolm Smith BSc, FNZIC  
Malcolm Smith Reference Materials Ltd  
40 Oakford Park Crescent, Greenhithe  
North Shore City 0632  
**NEW ZEALAND**  
Email: Malcolm@MSRML.co.nz  
Telephone: +64 9 444 3534

**Date of Certification:**

19 April 2010

**Certificate Status:**

Original

**Available Packaging:**

This reference material has been packed in wide-mouthed jars that contain 2.5 kg of product. The contents of some jars may be subsequently repacked into sealed polyethylene sachets.

**Origin of Reference Material:**

Feldspar minerals, basalt and iron pyrites with minor quantities of finely divided gold-containing minerals that have been screened to ensure there is no gold nugget effect.

**Supplier of Reference Material:**

ROCKLABS Ltd  
P O Box 18 142  
Auckland 1743  
**NEW ZEALAND**  
Email: sales@rocklabs.com  
Website: www.rocklabs.com  
Telephone: +64 9 634 7696



**Description:**

The reference material is a light grey powder that has been well mixed and a homogeneity test carried out after the entire batch was packaged into wide-mouthed jars. There is no soil component. The product contains crystalline quartz and therefore dust from it should not be inhaled.

The approximate chemical composition is:  
(Uncertified Values)

	%
SiO <sub>2</sub>	55.09
Al <sub>2</sub> O <sub>3</sub>	16.08
Na <sub>2</sub> O	4.53
K <sub>2</sub> O	4.78
CaO	3.51
MgO	3.18
TiO <sub>2</sub>	0.94
MnO	0.07
P <sub>2</sub> O <sub>5</sub>	0.25
Fe <sub>2</sub> O <sub>3</sub>	4.92
Fe	2.8
S	3.0

**Intended Use:**

This reference material is designed to be included with every batch of samples analysed and the results plotted for quality monitoring and assessment purposes.

**Stability:**

The container (jar or sachet) and its contents should not be heated to temperatures higher than 50 °C. Iron pyrites are likely to oxidize in the air but tests have shown that the increase in weight of an exposed reference material of similar matrix, in the Auckland climate, is less than 0.1% per year.

**Method of Preparation:**

Pulverized feldspar minerals, basalt rock and barren iron pyrites were blended with finely pulverized and screened, gold-containing minerals. Once the powders were uniformly mixed the composite was placed into 1713 wide-mouthed jars, each bearing a unique number. 48 jars were randomly selected from the packaging run and material from these jars was used for both homogeneity and consensus testing.

**Homogeneity Assessment:**

An independent laboratory carried out gold analysis by fire assay of 30 g portions, using a gravimetric finish. Steps were taken to minimize laboratory method variation in order to better detect any variation in the candidate reference material.

**Homogeneity Assessment continued:**

The contents of six randomly selected jars were compacted by vibration (to simulate the effect of freighting) and five samples removed successively from top to bottom from each jar. In addition, five samples were removed from the last jar in the series. A sample was also removed from the top of each of the 48 jars randomly selected from the 1713 jars in the batch. The results of analysis of the 83 samples (randomly ordered and then consecutively numbered before being sent to the laboratory) produced a relative standard deviation of 1.1 %.

**Analytical Methodology:**

Once homogeneity had been established, two sub-samples were submitted to a number of well-recognized laboratories in order to assign a gold value by consensus testing. The sub-samples were drawn from the 48 randomly selected jars and each laboratory received samples from two different jars. Indicative concentration ranges were given. All laboratories used fire assay for the gold analysis, with most using an instrument finish and some a gravimetric finish.

**Calculation of Certified Value:**

Results for gold were returned from 43 laboratories. Statistical analysis to identify outliers was carried out using the principles detailed in sections 7.3.2 – 7.3.4, ISO 5725-2: 1994. Assessment of each laboratory's performance was carried out on the basis of z-scores, partly based on the concept described in ISO/IEC Guide 43-1. Details of the criteria used in these examinations are available on request. As a result of these statistical analyses, six sets of results were excluded for the purpose of assigning a gold concentration value to this reference material. A recommended value was thus calculated from the average of the remaining  $n = 37$  sets of replicate results. The 95 % confidence interval was estimated using the formula:-

$$\bar{X} \pm ts/\sqrt{n}$$

(where  $\bar{X}$  is the estimated average,  $s$  is the estimated standard deviation of the laboratory averages, and  $t$  is the 0.025 tail-value from Student's t-distribution with  $n-1$  degrees of freedom). The recommended value is provided at the beginning of the certificate in  $\mu\text{g/g}$  (ppm) units. A summary of the results used to calculate the recommended value is listed on page 4 and the names of the laboratories that submitted results are listed on page 5. The results are listed in increasing order of the individual laboratory averages.

Statistical analysis of the consensus test results has been carried out by independent statistician, Tim Ball.

**Summary of Results Used to Calculate Gold Value**  
 (Listed in increasing order of individual laboratory averages)

Gold (ppm)		
Sample 1	Sample 2	Average
3.85	3.84	3.845
3.91	3.94	3.925
3.90	4.03	3.965
3.99	3.98	3.985
4.01	4.00	4.005
4.014	4.019	4.016
4.080	3.983	4.032
4.07	4.06	4.065
4.061	4.071	4.066
4.108	4.041	4.075
4.14	4.01	4.075
4.10	4.06	4.080
4.002	4.185	4.094
4.11	4.08	4.095
4.08	4.11	4.095
4.14	4.05	4.095
4.055	4.135	4.095
4.08	4.11	4.097
4.130	4.088	4.109
4.15	4.08	4.115
4.155	4.082	4.119
4.16	4.08	4.120
4.14	4.15	4.145
4.17	4.14	4.155
4.20	4.11	4.155
4.15	4.16	4.155
4.155	4.175	4.165
4.16	4.17	4.165
4.10	4.25	4.175
4.16	4.20	4.180
4.15	4.22	4.185
4.16	4.22	4.190
4.19	4.20	4.195
4.19	4.22	4.205
4.29	4.13	4.210
4.21	4.26	4.235
4.28	4.28	4.280

Average of 37 sets = 4.107 ppm  
 Standard deviation of 37 sets = 0.088 ppm

**Note: this standard deviation should not be used as  
 a basis to set control limits when plotting results  
 from an individual laboratory.**

Relative standard deviation = 2.2 %  
 95% Confidence interval for average = 0.029 ppm

## Participating Laboratories

<b>Australia</b>	ALS Mineral, Kalgoorlie ALS Mineral, Orange ALS Mineral, Perth ALS Mineral, Townsville Amdel Ltd, Adelaide Amdel Ltd, Kalgoorlie Genalysis Laboratory Services, Perth Independent Assay Laboratories, Perth SGS Minerals Services, Perth Standard and Reference Laboratories, Perth Ultra Trace Pty Ltd, Perth
<b>Burkina Faso</b>	ALS Mineral, Burkina Faso
<b>Canada</b>	Acme Analytical Laboratories Ltd, Vancouver ALS Mineral, Val d'Or ALS Mineral, Vancouver Assayers Canada, Vancouver International Plasma Labs Ltd, Richmond Loring Laboratories Ltd, Calgary SGS Mineral Services, Lakefield Techni-Lab S.G.B. Abitibi Inc, Quebec TSL Laboratories Inc, Saskatoon
<b>Chile</b>	Acme Analytical Laboratories Ltd, Santiago ALS Mineral, La Serena
<b>Kyrgyzstan</b>	Stewart Assay and Environmental Laboratories LLC, Kara-Balta
<b>Malaysia</b>	Performance Laboratories, Raub
<b>Mali</b>	ALS Mineral, Bamako
<b>New Zealand</b>	Amdel Ltd, Reefton SGS Minerals Services, Waihi
<b>Peru</b>	ALS Mineral, Lima Inspectorate Services Peru S.A.C., Callao Minera Yanacocha SRL – Newmont, Lima
<b>South Africa</b>	AB Analytical Laboratory Services, Boksburg ALS Mineral, Johannesburg Anglo Research, Johannesburg Goldfields West Wits Analytical Laboratory Performance Laboratories, Allanridge Performance Laboratories, Randfontein SGS South Africa (Pty) Ltd, Johannesburg
<b>UK</b>	Inspectorate International Ltd, Essex
<b>USA</b>	ALS Mineral, Reno Barrick Goldstrike – Met Services Newmont Mining Corporation, Carlin Laboratory Newmont Mining Corporation, Lone Tree Laboratory

### **Instructions and Recommendations for Use:**

Weigh out quantity usually used for analysis and analyze for total gold by normal procedure. Homogeneity testing has shown that consistent results are obtainable for gold when 30g portions are taken for analysis.

We quote a 95% confidence interval for our estimate of the declared value. This confidence interval reflects our uncertainty in estimating the true value for the gold content of the reference material. The interval is chosen such that, if the same procedure as used here to estimate the declared value were used again and again, then 95% of the trials would give intervals that contained the true value. It is a reflection of how precise the trial has been in estimating the declared value. It **does not** reflect the variability any particular laboratory will experience in its own repetitive testing.

Some users in the past have misinterpreted this confidence interval as a guide as to how different an individual test result should be from the declared value. Some mistakenly use this interval, or the standard deviation from the consensus test, to set limits for control charts on their own routine test results using the reference material. Such use inevitably leads to many apparent out-of-control points, leading to doubts about the laboratory's testing, or of the reference material itself.

A much better way of determining the laboratory performance when analysing the reference material is to accumulate a history of the test results obtained, and plot them on a control chart. The appropriate centre line and control limits for this chart should be based on the average level and variability exhibited in the laboratory's **own** data. This chart will provide a clear picture of the long-term stability or otherwise of the laboratory testing process, providing good clues as to the causes of any problems. To help our customers do this more simply for themselves, we can provide a free Excel template that will produce sensible graphs, with intelligently chosen limits, from the customer's own data.

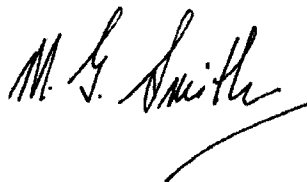
### **Legal Notice:**

This certificate and the reference material described in it have been prepared with due care and attention. However ROCKLABS Ltd, Malcolm Smith Reference Materials Ltd and Tim Ball Ltd accept no liability for any decisions or actions taken following the use of the reference material.

### **References:**

For further information on the preparation and validation of this reference material please contact Malcolm Smith.

#### **Certifying Officer**



M G Smith BSc, FNZIC

#### **Independent Statistician**



Tim Ball BSc (Hons)

P.O Box 18-142, Glen Innes 1743  
Auckland, New Zealand.  
P 64 9 634 7696  
F 64 9 634 6896  
E sales@rocklabs.com  
www.rocklabs.com



# Certificate of Analysis

## Reference Material SK62

**Recommended Gold Concentration: 4.075 µg/g**  
**95% Confidence Interval: +/- 0.045 µg/g**

The above values apply only to product in jars or sachets which have an identification number within the following range: **250 945 – 253 617**.

**Prepared and Certified By:**

Malcolm Smith BSc, FNZIC  
Rocklabs Reference Materials  
40 Oakford Park Crescent, Greenhithe  
Auckland 0632  
**NEW ZEALAND**  
Email: Malcolm@MSRML.co.nz  
Telephone: +64 9 444 3534

**Date of Certification:**

19 August 2011

**Certificate Status:**

Original

**Available Packaging:**

This reference material has been packed in wide-mouthed jars that contain 2.5 kg of product. The contents of some jars may be subsequently repacked into sealed polyethylene sachets.

**Origin of Reference Material:**

Feldspar minerals, basalt and iron pyrites with minor quantities of finely divided gold-containing minerals that have been screened to ensure there is no gold nugget effect.

**Supplier of Reference Material:**

ROCKLABS Ltd  
P O Box 18 142  
Glen Innes  
Auckland 1743  
**NEW ZEALAND**  
Email: sales@rocklabs.com  
Website: www.rocklabs.com

**Description:**

The reference material is a light grey powder that has been well mixed and a homogeneity test carried out after the entire batch was packaged into wide-mouthed jars. There is no soil component. The product contains crystalline quartz and therefore dust from it should not be inhaled.

The approximate chemical composition is:  
(Uncertified Values)

	%
SiO <sub>2</sub>	54.34
Al <sub>2</sub> O <sub>3</sub>	16.11
Na <sub>2</sub> O	4.45
K <sub>2</sub> O	4.80
CaO	3.83
MgO	3.43
TiO <sub>2</sub>	1.00
MnO	0.07
P <sub>2</sub> O <sub>5</sub>	0.26
Fe <sub>2</sub> O <sub>3</sub>	5.18
Fe	2.8
S	3.0

**Intended Use:**

This reference material is designed to be included with every batch of samples analysed and the results plotted for quality monitoring and assessment purposes.

**Stability:**

The container (jar or sachet) and its contents should not be heated to temperatures higher than 50 °C. Iron pyrites are likely to oxidize in the air but tests have shown that the increase in weight of an exposed reference material of similar matrix, in the Auckland climate, is less than 0.1% per year.

**Method of Preparation:**

Pulverized feldspar minerals, basalt rock and barren iron pyrites were blended with finely pulverized and screened gold-containing minerals. Once the powders were uniformly mixed the composite was placed into 2673 wide-mouthed jars, each bearing a unique number. 54 jars were randomly selected from the packaging run and material from these jars was used for both homogeneity and consensus testing.

**Homogeneity Assessment:**

An independent laboratory carried out gold analysis by fire assay of 30 g portions, using a gravimetric finish. Steps were taken to minimize laboratory method variation in order to better detect any variation in the candidate reference material.

The contents of six randomly selected jars were compacted by vibration (to simulate the effect of freighting) and five samples removed successively from top to bottom from each jar. In addition, five samples were removed from the last jar in the series. A sample was also removed from the top of each of the 54 jars randomly selected from the 2673 jars in the batch. The results of analysis of the 89 samples (randomly ordered and then consecutively numbered before being sent to the laboratory) produced a relative standard deviation of 0.7 %.

**Analytical Methodology:**

Once homogeneity had been established, two sub-samples were submitted to a number of well-recognized laboratories in order to assign a gold value by consensus testing. The sub-samples were drawn from the 54 randomly selected jars and each laboratory received samples from two different jars. Indicative concentration ranges were given. All laboratories used fire assay for the gold analysis, with most using an instrument finish and 13 using a gravimetric finish.

**Calculation of Certified Value:**

Results for gold were returned from 44 laboratories. Statistical analysis to identify outliers was carried out using the principles detailed in sections 7.3.2 – 7.3.4, ISO 5725-2: 1994. Assessment of each laboratory's performance was carried out on the basis of z-scores, partly based on the concept described in ISO/IEC Guide 43-1. Details of the criteria used in these examinations are available on request. As a result of these statistical analyses, five sets of results were excluded for the purpose of assigning a gold concentration value to this reference material. A recommended value was thus calculated from the average of the remaining n = 39 sets of replicate results. The 95 % confidence interval was estimated using the formula:-

$$X \pm ts/\sqrt{n}$$

(where X is the estimated average, s is the estimated standard deviation of the laboratory averages, and t is the 0.025 tail-value from Student's t-distribution with n-1 degrees of freedom). The recommended value is provided at the beginning of the certificate in µg/g (ppm) units. A summary of the results used to calculate the recommended value is listed on page 4 and the names of the laboratories that submitted results are listed on page 5. The results are listed in increasing order of the individual laboratory averages.

Statistical analysis of the consensus test results has been carried out by independent statistician, Tim Ball.



**Summary of Results Used to Calculate Gold Value**  
 (Listed in increasing order of individual laboratory averages)

<b>Gold (ppm)</b>		
<b>Sample 1</b>	<b>Sample 2</b>	<b>Average</b>
3.64	3.79	3.715
3.85	3.67	3.760
3.93	3.74	3.835
3.84	3.87	3.855
3.94	3.94	3.940
3.97	3.91	3.940
3.94	3.96	3.950
3.999	3.950	3.975
4.006	3.944	3.975
3.941	4.017	3.979
4.017	4.000	4.009
3.98	4.05	4.015
4.09	3.94	4.015
3.96	4.11	4.035
4.040	4.030	4.035
4.080	4.029	4.055
4.00	4.12	4.060
4.07	4.09	4.080
4.08	4.11	4.095
4.120	4.080	4.100
4.12	4.08	4.100
4.158	4.069	4.114
4.07	4.16	4.115
4.10	4.15	4.125
4.150	4.115	4.133
4.18	4.10	4.140
4.18	4.10	4.140
4.16	4.13	4.145
4.040	4.268	4.154
4.20	4.11	4.155
4.12	4.27	4.195
4.21	4.19	4.200
4.28	4.13	4.205
4.235	4.225	4.230
4.225	4.245	4.235
4.240	4.230	4.235
4.26	4.25	4.255
4.34	4.27	4.305
4.325	4.337	4.331

Average of 39 sets = 4.075 ppm  
 Standard deviation of 39 sets = 0.140 ppm

**Note: this standard deviation should not be used as a basis to set control limits when plotting results from an individual laboratory.**

Relative standard deviation = 3.4 %  
 95% Confidence interval for average = 0.045 ppm

## Participating Laboratories

<b>Australia</b>	ALS Minerals, Kalgoorlie ALS Minerals, Orange ALS Minerals, Perth ALS Minerals, Townsville Amdel – Bureau Veritas, Adelaide Amdel – Bureau Veritas, Kalgoorlie Genalysis Laboratory Services, Perth Independent Assay Laboratories, Perth SGS Minerals Services, Perth Standard and Reference, Perth Ultra Trace – Bureau Veritas, Perth
<b>Burkina Faso</b>	ALS Minerals, Burkina Faso Semafo Burkina Faso S.A.
<b>Canada</b>	Acme Analytical Laboratories, Vancouver ALS Minerals, Val d'Or ALS Minerals, Vancouver Bourlamaque Assay Laboratories, Quebec Loring Laboratories (Alberta) Ltd, Calgary SGS Minerals Services, Vancouver SGS Minerals Services, Lakefield Techni-Lab S.G.B., Québec TSL Laboratories Inc, Saskatoon
<b>Chile</b>	Acme Analytical Laboratories, Santiago ALS Minerals, La Serena
<b>Côte d'Ivoire</b>	Bureau Veritas Mineral Laboratories, Abidjan
<b>Ireland</b>	OMAC Laboratories
<b>Kyrgyz Republic</b>	Stewart Assay and Environmental Laboratories LLC, Kara-Balta
<b>Mali</b>	ALS Minerals, Bamako
<b>New Zealand</b>	SGS Minerals Services, Otago SGS Minerals Services, Waihi
<b>Peru</b>	ALS Minerals, Lima Inspectorate Services Perú S.A.C., Callao Minera Yanacocha SRL – Newmont, Lima
<b>Russia</b>	Irgiredmet Analytical Centre, Irkutsk
<b>South Africa</b>	ALS Minerals, Johannesburg AngloGold Ashanti, Vaal River Chemical Laboratory Goldfields West Wits Analytical Laboratory Performance Laboratories, Randfontein SGS South Africa (Pty) Ltd, Johannesburg
<b>United Kingdom</b>	Inspectorate International, Essex
<b>USA</b>	ALS Minerals, Reno Barrick Goldstrike – Met Services Newmont Mining Corporation, Carlin Laboratory
<b>Zimbabwe</b>	Performance Laboratories, Harare

**Instructions and Recommendations for Use:**

Weigh out quantity usually used for analysis and analyze for total gold by normal procedure. Homogeneity testing has shown that consistent results are obtainable for gold when 30g portions are taken for analysis.

We quote a 95% confidence interval for our estimate of the declared value. This confidence interval reflects our uncertainty in estimating the true value for the gold content of the reference material. The interval is chosen such that, if the same procedure as used here to estimate the declared value were used again and again, then 95% of the trials would give intervals that contained the true value. It is a reflection of how precise the trial has been in estimating the declared value. It **does not** reflect the variability any particular laboratory will experience in its own repetitive testing.

Some users in the past have misinterpreted this confidence interval as a guide as to how different an individual test result should be from the declared value. Some mistakenly use this interval, or the standard deviation from the consensus test, to set limits for control charts on their own routine test results using the reference material. Such use inevitably leads to many apparent out-of-control points, leading to doubts about the laboratory's testing, or of the reference material itself.

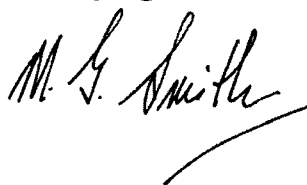
A much better way of determining the laboratory performance when analysing the reference material is to accumulate a history of the test results obtained, and plot them on a control chart. The appropriate centre line and control limits for this chart should be based on the average level and variability exhibited in the laboratory's **own** data. This chart will provide a clear picture of the long-term stability or otherwise of the laboratory testing process, providing good clues as to the causes of any problems. To help our customers do this more simply for themselves, we can provide a free Excel template that will produce sensible graphs, with intelligently chosen limits, from the customer's own data.

**Legal Notice:**

This certificate and the reference material described in it have been prepared with due care and attention. However ROCKLABS Ltd, Scott Technology Ltd and Tim Ball Ltd accept no liability for any decisions or actions taken following the use of the reference material.

**References:**

For further information on the preparation and validation of this reference material please contact Malcolm Smith.

**Certifying Officer**

M G Smith BSc, FNZIC

**Independent Statistician**

Tim Ball BSc (Hons)

APPENDIX 7. ASSAYS CERTIFICATES

**INFORMATION AVAILABLE UPON REQUEST  
SUBMITTED TO VIRGINIA MINES INC.**

**[info@minesvirginia.com](mailto:info@minesvirginia.com)**

**Toll free number: 800 476-1853**