

**TECHNICAL REPORT  
ON THE  
SIVIEZ URANIUM-COPPER-GOLD PROPERTY,  
CANTON VALAIS, SWITZERLAND  
FOR  
URANIA RESOURCES LTD.**

prepared by

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Toronto, Canada



*Watts, Griffis and McOuat*  
Since 1962  
CONSULTING GEOLOGISTS AND ENGINEERS

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## 1. SUMMARY

Watts, Griffis and McOuat Limited ("**WGM**") was retained by Urania Resources Ltd. ("**Urania**") to conduct a technical review and prepare a National Instrument 43-101 ("NI-43-101") compliant report on the Siviez Property (the "Property"), located in the Canton of Valais in south-western Switzerland. The Siviez Property is 100% held by Urania, through a wholly-owned subsidiary, AuroVallis Sarl. Prior to the issuance of the property permit, WGM carried out a site visit to the Property, which included verification sampling, on October 23 and 24, 2008.

The Property consists of a single 31.6 km<sup>2</sup> *Permis de Fouille* (Exploration Permit) that allows for exploration for uranium, copper, gold, silver, lead and zinc. It is located about 20 km southwest of Sion, which is about 160 km east of Geneva along the Rhône River valley.

The topography at Siviez varies from gentle to steep, with vertical relief of approximately 1,485 m. About three-quarters of the Property area is above tree line and most of the outcropping mineralization is at 2,200 to 2,600 m above sea level ("asl"). Road access and infrastructure in the surrounding areas is excellent, with the Rhône River valley corridor within 10 km of the Property. The Property is mostly uninhabited, although there are a few towns nearby. Pasturelands cover a significant part of the Property, but grazing is restricted to the lower elevations, with little to none in the areas of the known mineralization. Although there is skiing infrastructure at several locations on the Property, surface geological work is not feasible in the winter season, so no difficulties have been encountered. Loose surface roads provide access into many parts of the Permit area.

Uranium was first discovered at Siviez in 1957, when radioactive anomalies and pitchblende mineralization were encountered 800 m below surface (1,400 m asl) during construction of a water conduit tunnel that extends under the Property. Bulk samples weighing 6-t and 3.6 t, containing 0.177% and 0.083% U<sub>3</sub>O<sub>8</sub>, respectively, were extracted from two higher-grading areas. This mineralization was traced up-dip to surface at 2,200-2,400 m asl where anomalous uranium mineralization was identified and traced along a 5 km strike length. During 1959, Grande Dixence S.A., a Swiss utility company, obtained a *Permis de Fouille* and renewed it annually until 1993.

During 1958-59, the mineralized areas at Grand Alou, Le Fou, Les Plans and Col des Mines were discovered. At Grand Alou, a number of trenches were excavated in mineralized locations containing an abundance of malachite. At Le Fou, numerous small trenches were dug and sampled. In 1968, a 160 m long adit at Col des Mines was excavated to follow a

series of subparallel zones of uranium-copper mineralization. From 1982 to 1984, a Swiss government agency continued exploration, consisting of trenching of the various occurrences at Le Fou, Grand Alou and Les Plans. Some high-grade uranium results were obtained, including up to 504,000 ppm U (59.43% U<sub>3</sub>O<sub>8</sub>) and 285,000 ppm U (33.6% U<sub>3</sub>O<sub>8</sub>), as well as local gold enrichment (up to 11.9 g Au/t near Grand Alou). During 1984, a single diamond drillhole was attempted at Les Plans, but was abandoned short of the target because of technical difficulties.

In 1993, strong radiometric anomalies were detected at 2,157 m asl, or about 240 m below surface, in a new water conduit tunnel beneath Grand Alou.

The Property is situated in the Pennine Alps and is mainly underlain by northeast-trending units of the Siviez Mischabel nappe which consists of metasedimentary and metavolcanic rocks of the Mont Gond, Nendaz and Siviez Series.

The Nendaz Series, is a Permo-Carboniferous unit of greenschist metamorphosed continental fluvial to fluvial-deltaic detrital sediments consisting of meta-conglomerate, meta-arkosic sandstone, quartz-albite-chlorite schist, and minor albite-chlorite-epidote greenschist. Individual units, at the scale of the Siviez Mischabel nappe, vary considerably in thickness, and can be discontinuous, which may be due to individual basins resting on basement, lateral facies changes or tectonic effects, or a combination of these settings.

The Siviez Series, which outcrops along the west side of the Nendaz Series, is a complex of banded metamorphosed mafic rocks of volcanic and lesser sedimentary origin. The series is polycyclic and underwent Hercynian amphibolite grade metamorphism. It was subsequently affected by retrograde (greenschist) metamorphism during the Alpine orogeny.

The contact between the Siviez metavolcanic rocks and the Nendaz metasedimentary rocks is of particular importance as the uranium-copper-gold mineralization straddles this contact along a 6 km strike length. The top of the Siviez Series corresponds to a banded section of chloritic schists and amphibolites. Lead, silver, copper and barite mineralization also occurs in this banded interval. The contact area is well defined in some areas, but in some sections is an interval of several tens of metres between the two units where they appear mixed, possibly due to tectonic interleaving or the deposition of eroded material from the Siviez Series along with basal units of the Nendaz Series.

Occurrences of uranium ± copper ± silver ± gold mineralization, accompanied by highly anomalous radioactivity, are widespread on the Property. The occurrences roughly straddle

the contact between the Siviez metavolcanic rocks and the Nandez metasedimentary units, and extend over an interrupted distance of approximately 6 km – almost the full length of the Permit area. Some areas along the contact zone, covered with talus and scree, interrupt the otherwise more-or-less continuous zone of anomalies and occurrences.

Uranium mineralization at Siviez consists of disseminations, pods, and swarms of small veins of pitchblende and coffinite, together with pyrite and ubiquitous copper sulphides (chalcopyrite, tetrahedrite, chalcocite, covellite), as well as secondary copper carbonates (azurite and malachite). Native gold has been identified, but its distribution at Siviez is as yet unclear.

The uranium-copper-gold-silver occurrences have been explored in five main areas which are, from north to south: Grand Alou, the adjacent Plan de Fou, Le Fou, Les Plans and Col des Mines.

At Grand Alou, uranium ± copper ± silver ± gold mineralization outcrops within an area of about 200 x 200 m in metamorphosed channel-fill conglomerates and sandstones of the Nendaz Series. Stratiform occurrences are about 10-90 cm thick and extend laterally from a few to about ten metres, as exposed, within a sequence about 30 m wide. There are also albite-bearing quartz and carbonate veins, with disseminated or remobilized mineralization, and mineralization consisting of uranium impregnations and quartz-carbonate veins in the plane of schistosity S2 or S3. During Urania's exploration program in 2009, 199 samples were collected from the Grand Alou area, including 72 channel samples, 2 chip samples, 94 grab samples and 31 samples from boulders. Of these, 45 samples contained >0.1% U<sub>3</sub>O<sub>8</sub>, of which 21 contained >0.5% U<sub>3</sub>O<sub>8</sub>. Of the same 45 samples, 22 contained >0.5% Cu. Boulder (float) samples contained up to 12.38% U<sub>3</sub>O<sub>8</sub> and 0.76% Cu. The best channel sample contained 0.64% U<sub>3</sub>O<sub>8</sub> and 0.69% Cu across 0.42 m. In 2010, prospecting of the airborne anomalies 700-1,000 m east-northeast of Grand Alou, along the volcanic-sediment contact zone, identified additional uranium mineralization with three of ten grab samples containing >0.1% U<sub>3</sub>O<sub>8</sub> and up to 2.99% Cu.

At Plan du Fou, Urania collected a total of 39 samples in 2009, including 9 channel samples, 7 grab samples and 6 samples from float. Of these, 12 contained >0.1% U<sub>3</sub>O<sub>8</sub>. The best channel contained 0.16% U<sub>3</sub>O<sub>8</sub> and 0.49% Cu across 0.40 m. The best grab samples contained 1.30% U<sub>3</sub>O<sub>8</sub> and 0.61% Cu, and 3.63% U<sub>3</sub>O<sub>8</sub> and 0.25% Cu.

Mineralization on the steep north-western face of Le Fou comprises the largest concentration of anomalies on the Property, but they have not been well described. Anomalous

radioactivity occurs over an area of approximately 700 m x 350 m. Mineralization generally parallels schistosity, and there are up to ten layers in some areas within a 12-15 m thick zone. There are also near-vertical mineralized faults. Significantly, there is about 1,000 m of elevation separating the mineralization at the summit of Le Fou from the mineralization identified in the Fionnay-Nendaz water tunnel directly below Le Fou, where, in 1957, three large-volume samples of broken rock yielded 0.03% U (0.035%  $U_3O_8$ ) to 0.15% U (0.177%  $U_3O_8$ ). Urania sampled in the easily accessible lower areas of Le Fou. Six of 52 grab and channel samples returned analyses of >0.1%  $U_3O_8$ , including a grab samples with 0.87%  $U_3O_8$  and 0.01% Cu, and a channel sample containing 2.48%  $U_3O_8$  and 0.72% Cu across 0.72 m.

At Les Plans, outcrop exposure is limited and the observable uranium mineralization occurs in both metasedimentary and metavolcanic rocks. A mineralized bed was reported historically to be about 4-6 m thick and laterally constant. The highest concentrations most often correspond to fissures cross-cutting the foliation. Occurrences in the metasedimentary rocks are associated with conglomerate layers. Historical sampling on a 250 m<sup>2</sup> outcrop returned an average of 127 ppm U and 717 ppm Cu, and an average width of 1.09 m, with the highest individual values of slightly more than 1,000 ppm U, 4,300 ppm Cu and 6,300 ppm Zn. Some samples contained from 500 to 1,655 ppb Au. The only drill hole attempted on the Property to date intersected a significant radioactive interval, but it did not reach its target depth. During the 2009 program, Urania took two grab samples and two channel samples; three contained >0.1%  $U_3O_8$  including 0.32%  $U_3O_8$ , 0.68% Cu and 16.1 ppm Ag. The best channel sample contained 0.15 %  $U_3O_8$  and 0.03% Cu across 0.53 m.

At Col des Mines, pitchblende-pyrite-chalcopyrite mineralization occurs within the Nendaz metasedimentary rocks. Three horizons of mineralization vary in thickness from several millimetres to several tens of centimetres. Nearby, mineralization was followed for 163 m in the 1968 adit, and on surface for close to 600 m. Urania did only preliminary work in 2007 and 2009. Of the 21 samples collected in total, 10 contained >0.1%  $U_3O_8$  (up to 3.1%  $U_3O_8$ ) and up to 2.50% Cu. The best channel sample contained 0.11%  $U_3O_8$  and 0.86% Cu across 0.64 m.

The proximity of lead-silver occurrences to the uranium-copper-silver-gold occurrences on the Property, their similar spatial distribution and near-concordance to stratigraphy suggest a possible genetic relationship. Several were exploited in the mid-1800s, but production was limited to one hundred to several hundred tonnes. One historic mine is located near Col des Mines, with others in the general vicinity of Grand Alou and the village of Siviez.

The uranium-copper-gold mineralization at Siviez is somewhat enigmatic. Any selection of a deposit model must take into account the considerable strike length of the zone (~6 km), the reported depth extent (~800 m), the elevated contents of uranium and copper, as well as locally silver, gold and lead, nearby subconcordant lead-silver mineralization, the coincident low airborne magnetic signature and the apparent lithostratigraphic control on mineralization.

The Siviez uranium-copper-gold mineralization is thought to be of Permo-Carboniferous age, one of many uranium occurrences of Hercynian age scattered across Europe. The majority of the European uranium deposits are spatially and genetically related to granite, and granite is absent along the Siviez trend. At Siviez, the fact that mineralization is focussed at or near the contact between the metasedimentary and mafic metavolcanic rocks suggests that this physico-chemical discontinuity was important for the deposition of uranium. Although there is alteration and structural deformation consistent with a hydrothermal epigenetic origin, veining is absent along the contact.

Urania's working hypothesis is that the Siviez volcanic rocks and overlying Nendaz sedimentary rocks were once conformable and that variable structural competency during the Alpine orogeny led to structural failure along the contact during folding. Urania hypothesizes that basinal brines in Nendaz Series sediments dissolved and transported uranium both laterally and vertically in the sedimentary pile and when they encountered a mafic volcanic unit, uranium-, copper-, and sulphur-bearing fluids precipitated. This would explain the apparent lithostratigraphic control to mineralization, although considerable mineralization is also present within the volcanic unit. The airborne magnetic low over the mafic metavolcanic unit and flanking or coincident with the mineralization suggests the destruction of magnetite in the mafic volcanic rocks by the mineralizing fluids.

In late 2007, following the application for the Exploration Permit, but in advance of its issuance, Urania commissioned a helicopter-borne radiometric and magnetic survey to cover a 7 km strike length over the known showings and the favourable stratigraphic horizon defined by the metasediment - metavolcanic contact. The survey identified a trend of radiometric anomalies extending virtually the full length of the survey and closely correlating with the contact zone.

During 2007, Urania also completed an initial grab sampling program which verified the results of the historical work. A number of high-grade uranium specimens were found. This was confirmed by WGM's limited verification sampling in 2008.

Immediately upon issuance of the Siviez Exploration Permit in 2009, Urania launched a geological program including surface sampling over the main mineralized areas of Grand Alou – Plan du Fou, Le Fou and Col des Mines. Airborne radiometric anomalies were followed up, and a number of new uranium occurrences were located.

The present knowledge base of uranium ± copper ± silver ± gold mineralization on the Siviez Property relies for the most part on surface exposures located primarily along ridge crests or in very steep terrain, as well as in local scree. Subsurface information is limited to minor underground exploration on a single "vein" at Col des Mines, a solitary shallow historical drillhole, mineralization reported in a hydro-electric conduit at least 800 m below surface, and anomalous radioactivity reported 240 m below surface in a second hydro-electric tunnel.

The numerous uranium occurrences on the Property comprise a zone of mineralization straddling the contact between the Nendaz metasedimentary rocks and the Siviez metavolcanic rocks along a distance of about 6 km. The mineralized zones are of sufficient length, width and distribution to warrant further exploration. The uranium mineralization in the zones is not pervasive, but is in the form of discrete highly mineralized layers or veins within rocks which are mostly unmineralized. Copper mineralization is more widespread along the contact zone but appears to roughly correlate with the uranium mineralization. Additional surface prospecting is warranted and the areas of the uranium and copper occurrences need to be tested by diamond drilling across the Nendaz – Siviez contact.

Urania has proposed a Phase 1 exploration program for 2010-2011 which includes: 1) preparation of a 3-D model of all data to assist in the layout of diamond drilling; 2) additional prospecting, mapping and sampling, as warranted; 3) a pilot radon-in-soil survey to test its effectiveness over areas where the metasediment metavolcanic contact is obscured and, if effective, an expanded survey; and, 4) a diamond drilling program to test, for the first time since its discovery in the late 1950s, the uranium mineralization along the contact zone. The drilling is planned to include two initial holes at Grand Alou, three holes at Plan du Fou, five holes at Col des Mines, and either a single drill hole from the top of Le Fou or two short holes at lower elevations. It is estimated that the initial drilling will require about 2,500 m. A Phase 1 budget of \$2,200,000, including a ~10% contingency allowance, is proposed by Urania.

Urania has proposed a Phase 2 program of 3,000 m of diamond drilling which will test the wide area of anomalies at Le Fou with additional drilling at Grand Alou, Plan du Fou and Col des Mines, being to some degree contingent on the success of Phase 1. The proposed Phase 2 budget of \$2,400,000 includes a ~10% contingency allowance.

In WGM's opinion, Urania's proposed Phase 1 and 2 programs and budgets are appropriate and reasonable.

## 2. INTRODUCTION

### 2.1 TERMS OF REFERENCE

Watts, Griffis and McOuat Limited ("**WGM**") was retained by Urania Resources Ltd. ("**Urania**") under the terms of an engagement dated October 20, 2008, to prepare a National Instrument 43-101 ("NI 43-101") compliant report ("Report") on the Siviez uranium-copper-gold property (the "Property"), located in the Canton of Valais in south-western Switzerland. WGM did not independently review legal, environmental, political or surface rights, water rights or other non-technical issues that might indirectly relate to this Report.

The registered owner of the Property is AuroVallis Sàrl ("**AuroVallis**"), a wholly-owned subsidiary of Urania.

It is Urania's intent to use this Report for filing on the System for Electronic Document Analysis and Retrieval ("**SEDAR**") in support of a financing and listing on the TSX Venture Exchange (TSX-V).

### 2.2 UNITS OF MEASURE

All of the data in the Report were recorded in metric units: millilitres ("ml"), centimetres ("cm"), metres ("m"), kilometres ("km"), grams ("g") and metric tonnes ("t"); one million metric tonnes is designated as "1 Mt". Areas are reported in square kilometres ("km<sup>2</sup>") or hectares ("ha"); 1 km<sup>2</sup> is equivalent to 100 ha. Metal contents are reported using percent ("%") or parts per million ("ppm"); gold contents are reported as grams per metric tonne ("g Au/t") - 1 g/t is equivalent to 1 ppm. Uranium is reported in either ppm or, in the case of high-grade analyses, as % U<sub>3</sub>O<sub>8</sub> (1.179% U<sub>3</sub>O<sub>8</sub> = 10,000 ppm U or 1% U<sub>3</sub>O<sub>8</sub> = 0.848% U).

Switzerland uses the Swiss Grid / CH-1903 Datum for UTM topographic control. GPS readings for WGM sample locations were taken in both CH-1903 and latitude/longitude, but only the Swiss grid references are reported herein.

All currency amounts are in Canadian dollars, unless otherwise noted. The unit of Swiss currency is the Swiss Franc ("CHF"). As of January 14, 2011, the Canadian dollar was valued at approximately 0.98 CHF.

## **2.3 SOURCES OF INFORMATION**

For the purposes of this Report, Mr. Kuehnbaum, representing WGM, visited the Property on October 23-24, 2008. Mineral occurrences and prospects were examined on the Property, and characterization samples were taken by WGM for analysis. Discussions were held with Dr. Keith Barron, Chairman of Urania; Ms. Ulla M. Knowles, P.Geo., and Qualified Person ("QP"), and M. Stefan Ansermet, a director of AuroVallis. Subsequent to WGM's inspection, Urania completed additional geological mapping, sampling and ground scintillometer surveying. In preparation of this Report, the author visited the offices of Urania and interviewed Urania's QP, reviewed all reports, maps, and results of all work, and disclosures including those completed subsequent to the WGM site visit, and is satisfied that there was no material change to the scientific and technical information regarding the Property. The additional work provided further verification of known mineralization, with results consistent with historic sampling and WGM's sampling. Mineralization continued to be found within the previously identified horizon. WGM is satisfied that an additional site visit to the Property would not reveal anything significantly different. The Property remains an early stage exploration property. Subsequent updates were through discussions and correspondence with Elaine Ellingham, President and P.Geo. (QP), and Dr. Keith Barron, Chairman of Urania, respectively.

Urania provided WGM with electronic copies of signed analytical certificates of all sampling done by Urania and AuroVallis on the Property from 2006 through 2010.

Technical information for this Report is derived from a variety of sources, including:

- 1) Historical information assembled by Urania, mostly sourced from archives at the University of Lausanne, the University of Geneva, or the Centre de Recherches sur l'Environnement Alpin ("**CREALP**") in Sion.
- 2) Articles in scientific publications and university theses.
- 3) Unpublished reports on 2007, 2009 and some of the 2010 exploration on the Property by Urania geological staff, including U.M. Knowles, P.Geo. and E. Ellingham, P.Geo. It should be noted that the full report of analytical work and compilation of the 2010 program is not yet complete; Urania has confirmed that no further reports are prepared and that all further work related to analyses or compilation of 2010 results is on hold pending the financing of Urania.
- 4) Additional general information obtained from published scientific articles and various internet sources.

Documents used in the preparation of this Report are listed herein under "References".

WGM has based this Report on information received from Urania and available to WGM up to approximately December 31, 2010, and it believes the information to be correct as of that date. WGM reserves the right, but shall be under no obligation, to revise its findings expressed in this Report in light of any other information that becomes available to it after this date.

This Report is the responsibility of WGM, which alone has been in charge of its overall presentation. Urania has reviewed previous draft copies for factual errors, but any resulting changes did not affect the conclusions in this Report.

## **2.4 RISK FACTORS**

Switzerland does not have a history of metals mining and there may be little understanding of the process of mineral exploration and the mining industry in general. There is however a significant labour force in the local Canton employed in tunnel construction, for roads and hydroelectric facilities.

There are a few small communities within and along the south-eastern side of the Property, and the populated Rhône Valley corridor is within 7 km. Tourism is one of the main industries in the local area, and on the Property there are important recreational ski areas at Nendaz Station and Siviez. As surface geological work is not feasible in the winter season, no difficulties have been encountered with the ski company. Urania informed WGM that Urania has an agreement with the ski company to remediate any trenches and remove any erected structures on designated ski runs prior to the next ski season. Advanced stage exploration and development are expected to be underground so no difficulties are anticipated as a result of the ski hills. Also, ski runs do not cover all of the Property.

Tourism offers mostly seasonal employment and Canton Valais is one of the less wealthy of the Swiss cantons, with little industrial base of revenues. While carrying out the site visits, WGM neither encountered nor observed any evidence of public resistance to mining. Urania has received all three *Permis de Fouille* (Exploration Permits) applied for, each of which was published for community comment in advance. At Urania's nearby Marécottes and Mont Chemin Exploration Permits, permits for trenching were approved quickly. Agriculture is important in the area, particularly dairy grazing on the slopes and in the upland areas, and there could be resistance from farmers and consortia of farmers, known as *alpages*, although

they have already provided approvals for the Exploration Permit and drilling, and, in a mining scenario, would participate in the royalty payable to surface-rights owners.

Switzerland presently derives about 40% of its energy needs from five nuclear power plants, with two of them producing district heating in addition to electrical power. Despite a ten-year moratorium on new plant construction beginning in 1990, anti-nuclear development proposals originally put forward in 1998 were rejected in a 2003 referendum. The Swiss Government announced early in 2007 that the existing five nuclear power reactors should be replaced in due course with new units. Two applications for the construction of new reactors were accepted in 2008, although these would not be on-line for a number of years (Swiss government website [www.swissworld.org](http://www.swissworld.org); and World Nuclear Association website [www.world-nuclear.org](http://www.world-nuclear.org), June 2008). An increase in nuclear generating capacity could promote a desire for a reliable domestic source of uranium.

A new Swiss energy policy promotes the use of renewable resources, such as hydroelectric generation and deep geothermal development, and encourages energy efficiency and gas-fired plants, but it relies on nuclear energy as the main contributor to expansion. Hydroelectric continues to be the largest contributor to electricity production. Switzerland has optimized its hydroelectric power generation over many decades and further expansion potential is very limited. Without new investment, a 25% shortfall is predicted by 2020 due to phasing out of electricity imports from France, as well as closure of two small reactors and a 355 MWe hydroelectric plant. In 2005, for the first time, Switzerland imported more electrical energy than it exported. Concerns on foreign natural gas supply developed quickly in January, 2006 when the Russian-Ukrainian gas dispute resulted in the interruption of gas from Russia destined for EU countries, including Switzerland. Continued disputes led to further gas reductions and interruptions through the pipeline in March 2008 and early 2009. Switzerland is highly motivated towards energy self sufficiency.

### 3. RELIANCE ON OTHER EXPERTS

WGM has not independently verified the validity or status of the Siviez Exploration Permit, and is relying on public documents and information provided by Urania and its legal counsel in Switzerland. WGM has examined an electronic copy of the *Permis de Fouille* ("Exploration Permit") in French, which is very similar to the Exploration Permits for Urania's other properties, for which a legal translation was provided. WGM also received a document in French amending the Exploration Permits (dated January 10, 2011) and a letter from Urania's Swiss legal counsel clarifying the status and provisions of the Exploration Permits. Urania has retained Python and Peter as legal counsel in Switzerland, who have reviewed the Mining Law and all Exploration Permit documents as well as environmental matters. Urania assumes full responsibility for the disclosure on the status of the Property and the applicable Mining Laws, as contained in this Report.

WGM has relied heavily on the historic work of the Commission Pour la Recherche en Suisse de Minéraux et de Roches à Elements Radioactifs et Rares, and the Office Fédéral de L'Energie, as well as work done by other agencies on their behalf. This material was in the form of various reports, plans, sections, or drill records, stored at CREALP in Sion, which had been digitally scanned by Urania. A number of the documents were translated into English for or by Urania. Most of the reports do not contain assay certificates, and very little analytical data was reported; consequently, WGM has been able to confirm very little of the historical work. However, it is WGM's opinion that this work, as described, was mostly done in a thorough and professional manner although the QA/QC procedures were likely not in line with current standards. The historical exploration was done prior to the introduction of the concept of the "Qualified Person", but WGM has no information to suggest that the past operators and authors were not qualified by virtue of applicable training and experience, and we are reasonably comfortable that the historical work was carried out to an acceptable standard.

## **4. PROPERTY LOCATION AND DESCRIPTION**

### **4.1 LOCATION**

The Property is located in the Canton of Valais in south-western Switzerland (Figure 1), about 20 km from Sion (population approximately 32,000). Sion is 160 km east of Geneva by road, and easily accessible by rail. The Property is centred at about 588 500E / 109 000N (Swiss Grid, CH-1903 Datum).

### **4.2 PROPERTY DESCRIPTION**

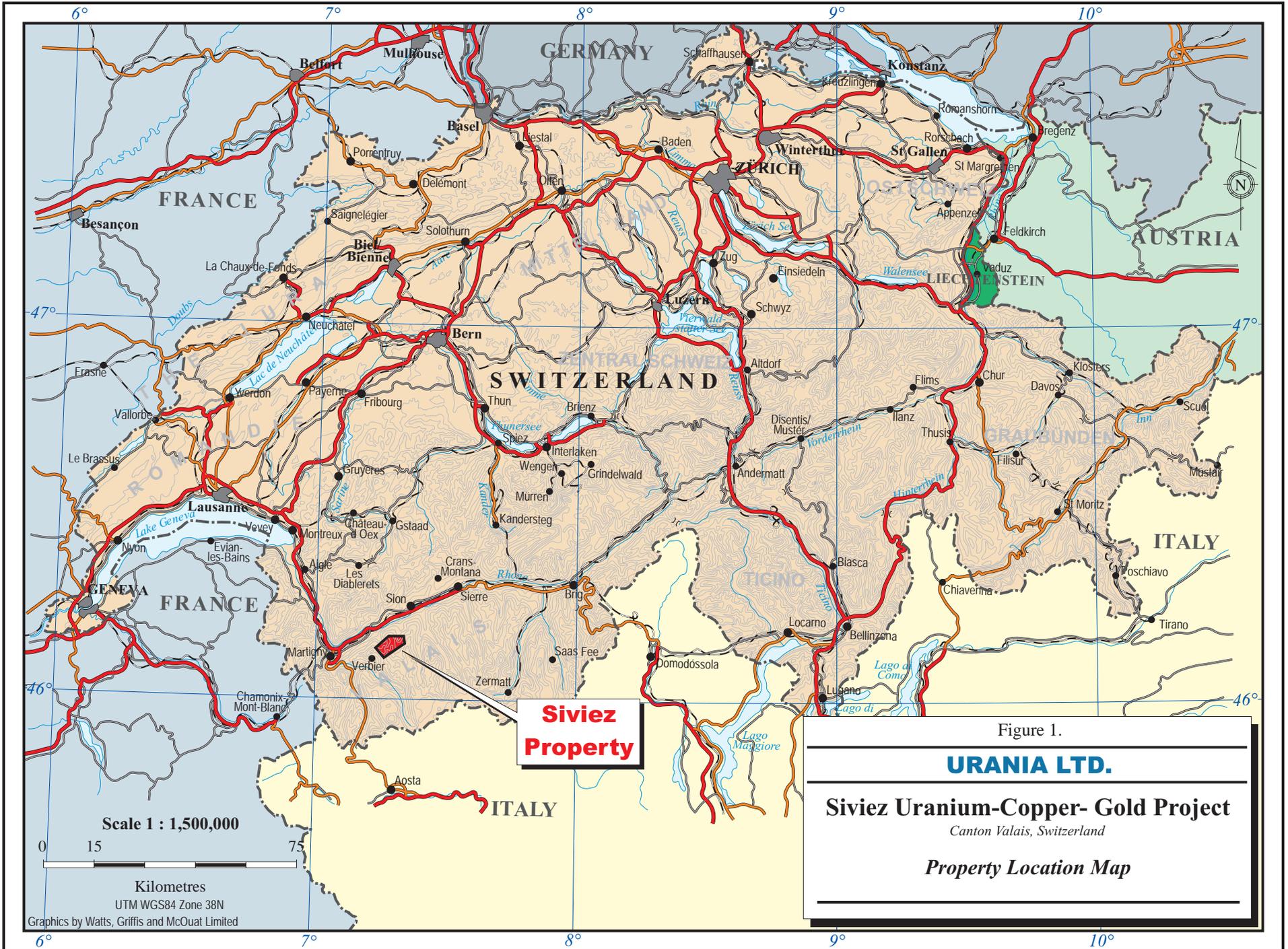
The Property consists of a single *Permis de Fouille* (Exploration Permit) covering 31.6 km<sup>2</sup> (3,160 hectares) that was granted to AuroVallis in Sion on June 24, 2009, by the Canton of Valais' Département des transports, de l'équipement et de l'environnement (Department of Transport, Equipment and the Environment). The Property boundary is not surveyed, but is defined by the Swiss Grid coordinates (CH 1903 Datum) of identifiable points on the digitized topographical map base (Table 1, Figure 2). The Exploration Permit allows for the exploration for uranium, copper, gold, silver, lead and zinc. The next renewal date is March 31, 2011.

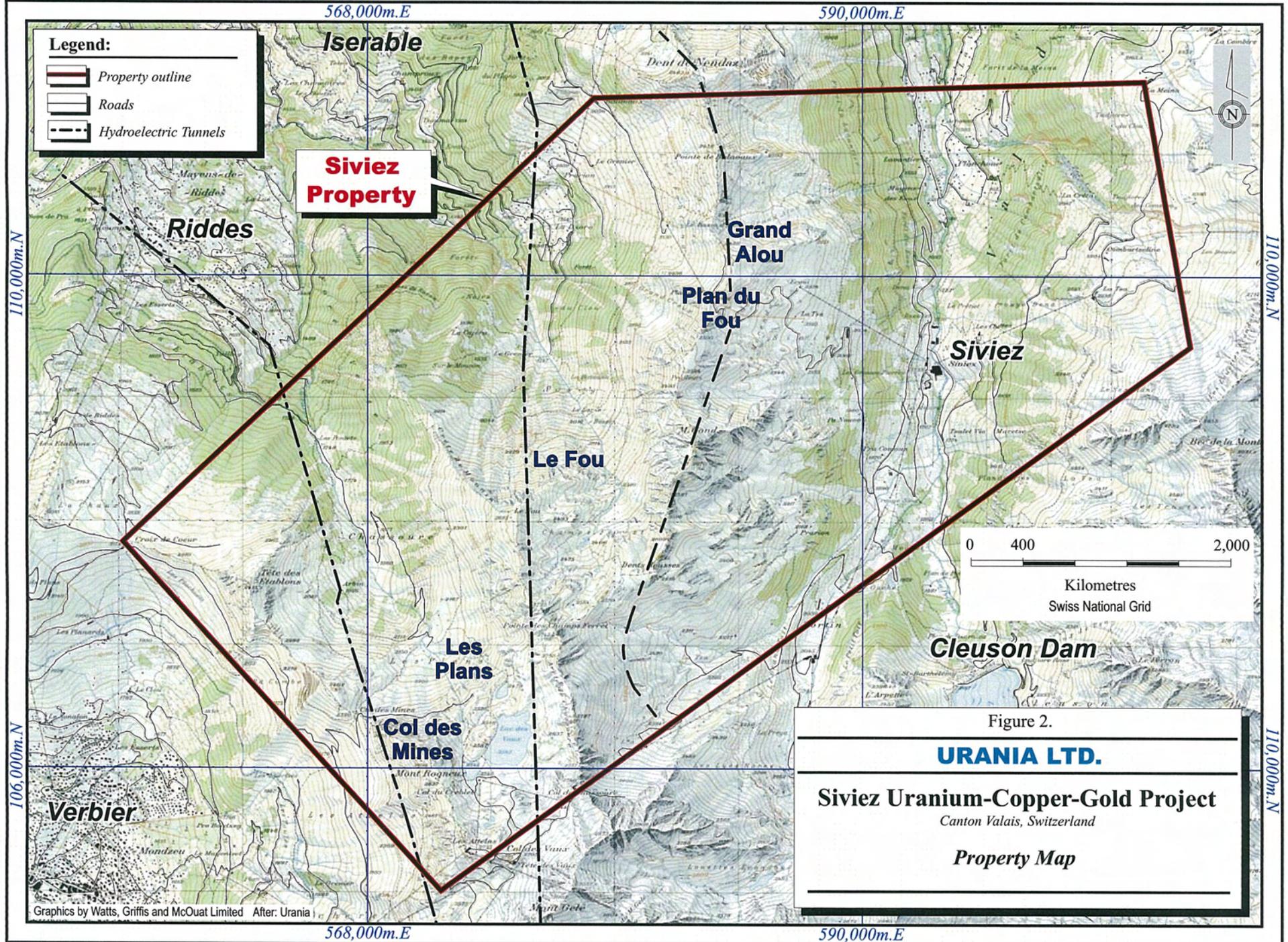
**TABLE 1.  
GEOGRAPHIC COORDINATES (SWISS GRID), SIVIEZ PERMIT**

Description	Easting	Northing	Elevation (m asl)
Croix-de-Cœur	584 030	107 830	2,173
Balavaux	587 830	111 440	2,050
La Meina	592 260	111 580	2,228
Le Sex Blanc	592 635	109 425	2,505
Les Attelas	586 600	105 000	2,626

### **4.3 NATURE OF URANIA'S INTEREST**

AuroVallis SARL ("AuroVallis"), a wholly owned subsidiary of Urania Resources Ltd. ("Urania"), is the sole registered title holder of the Siviez Exploration Permit. In addition to the Siviez Exploration Permit, AuroVallis is the sole owner of two other permits covering the





regions of: (i) La Creusaz-Balayé-Marécottes (36 km<sup>2</sup>) (the "Marécottes Permit"), and (ii) Tête-des-Econduits-Mont Chemin (31 km<sup>2</sup>) (the "Mont Chemin Permit"). The three permits are collectively referred to herein as, the "Permits".

On July 10, 2008 and June 24, 2009, the Department of Transports, Equipment and Environment of the Canton of Valais (the "DTEE") granted the Permits. On April 26, 2010, the DTEE confirmed renewal of the Permits until January 1, 2011. On January 10, 2011, the DTEE issued an amendment to the Permits ("Amendment") which provides that all of the Permits remain in full force and effect on the condition that the shares of Urania are listed on the TSX Venture Exchange on or before June 30, 2011, subject to the following terms and conditions:

- (1) The Permits are valid until March 31, 2013 (for the Marécottes Permit and Mt. Chemin Permit) and until March 31, 2014 (for the Siviez Permit) provided that:
  - (a) AuroVallis has issued a bank guarantee of CHF 500,000, and has obtained third party insurance covering a minimal amount of CHF10,000,000;
  - (b) annual filings are made with the DTEE to renew the Permits on an annual basis, the first renewal being on March 31, 2011;
  - (c) AuroVallis spends a minimum of CHF 7,500 per km<sup>2</sup> per year which costs may include the costs of the drilling prescribed below. AuroVallis has, however, the right to distribute those expenditures at its own discretion on each of the Permits over the remaining period of validity of the Permits (i.e. until March 31, 2013 and March 31, 2014); and
  - (d) Auro Vallis completes a minimum of 4,500 m of drilling with:
    - (i) At least 1,500 m of drilling completed by March 31, 2012;
    - (ii) A further minimum 2,000 m completed by March 31, 2013; and
    - (iii) A further minimum of 1,000 m completed by March 31, 2014;
- (2) After filing customary documentation before each of March 31, 2011 and March 31, 2012 for annual renewal as prescribed above, the DTEE will automatically renew the Permits on each of such annual renewal periods without further conditions. For subsequent periods, the DTEE reserves the right to impose additional conditions depending on the nature and scope of exploration completed.
- (3) If the drilling prescribed above for the years ended March 31, 2012 and March 31, 2013 is not performed in whole or in part, the DTEE has the right to proportionally reduce the size of the Permits, with the reduced areas to be selected by the Company. If the non-performance of the requested drilling is due to private or governmental factors beyond the

control of AuroVallis, the DTEE is obliged to consider such factors in making its reduction decision.

- (4) Provided AuroVallis complies with the obligations set forth in the Permits, it has a preferential right to renew the Permits for a second period of 5 years.

The Permits do not include surface rights. Mining properties in Valais are subject to a 3% gross value royalty on mineral production payable to the Canton, and a 0.75% gross value royalty payable to the surface rights holders.

The foregoing summary has been confirmed by Swiss legal counsel for Urania.

#### **4.4 ENVIRONMENTAL CONSIDERATIONS**

WGM did not observe any evidence of hazardous materials or any equipment left behind from previous exploration activities at Grand Alou and Col des Mines. The portal of the historic adit at Col des Mines is typically covered in snow because of its position on the north side of a ridge. The portal is covered with rock rubble and access may be hazardous, but in reality it is only exposed for a short time during the year.

Urania has informed WGM that Urania has no liability for former operations through the *Permis de Fouille*.

The requirements for safe handling of radioactive samples are outlined in Section 4.6.

On the Property, there are a few water protection zones designated as potentially impacting drinking water. The local consulting group Bureau d'Études Géologiques S.A. ("**BEG**") has advised Urania on the locations and restrictions across the Property. Based on the location of the mineralization, these areas are not expected to prohibit drilling in the target areas. An application for drilling has been submitted and as of August 31, 2010, it has been approved by most of the various government agencies, communes and *alpages*.

Urania has completed fieldwork on a baseline survey of water sources before any intrusive exploration work is undertaken by Urania. In the next program, results will be analysed and interpreted and disclosed to the authorities.

#### **4.5 MINING LAW, PERMIT APPLICATION AND MAINTENANCE**

Switzerland is divided into 26 separate territorial districts called "cantons", each with its own constitution, legislature, government and courts, and responsibility for the administration of healthcare, welfare, law enforcement, public education, taxation and the Mining Law.

Each canton's constitution determines the degree of autonomy accorded to the municipalities (communes), which varies but all provide for direct democracy and almost all include the power to levy taxes and pass municipal laws, which is the case for the Canton of Valais. All land in Switzerland is owned by individuals, corporations or the local communities or communes.

Mining is under cantonal jurisdiction. Urania's Siviez Permit was granted under the "*Loi sur les mines et carrières*" (law concerning mines and quarries) that was enacted in 1856 by the Grand Council of Valais, with few subsequent amendments. It is noteworthy that, before the recent granting of Urania's Permits, the last *Permis de Fouille* in Valais was approved in the early 1980s and the last one lapsed in the early 1990s. As a result, there is little familiarity amongst the cantonal government with existing exploration and mining laws, regulations and process, nor an abundance of administrative resources assigned to the task.

In Valais, application for an Exploration Permit is made to the cantonal geologist in Sion. There is no standard form, and the application is a letter outlining the names of identifiable geographic locations (with elevations) denoting the corners of the boundaries, and the metals of interest. A location map and a proposed work plan need to be included.

The cantonal geologist is responsible for the terms of the Exploration Permit, and the local commune council vets the application. Applications for Exploration Permits are gazetted, after which there is a 10-day period during which written responses, questions or objections may be submitted. The Siviez Exploration Permit received a few responses and enquiries and after meetings with the various groups, those who had filed the questions were satisfied and the permit was granted.

The Siviez Exploration Permit was issued June 24, 2009. Requirements to maintain the Exploration Permit in good standing are outlined in Section 4.3. An annual report on work performed and a report on expenditures, including proof of qualifying expenditures, must be filed; The Amendment noted in Section 4.3 requires Urania to incur a minimum of CHF 1,185,000 of qualifying exploration expenditures on the Siviez Exploration Permit (and a total minimum of CHF 3,697,500 on the three Permits held), over the five-year term.

Upon outlining a potentially economic mineral deposit, a permit-holder must report it within 30 days to the cantonal government, which shall then determine if a finder's certificate should be issued. Within six months of the declaration of discovery, the permit-holder may apply for a mining lease. Development and production may not commence until a mining lease is granted.

All mining properties are subject to a 3% gross value royalty on mineral production, payable to the Canton, and to a 0.75% gross value royalty payable to the surface rights holders, all described in Articles 39 and 40 of the Mining Law. The 1856 Mining Law is available at [http://www.vs.ch/public/public\\_lois/fr/Pdf/931.1.pdf](http://www.vs.ch/public/public_lois/fr/Pdf/931.1.pdf)

#### **4.6 OTHER PERMITS AND REQUIREMENTS**

Access to the Property must be acquired from individuals or communes owning the land or in the case of pastureland permission must come from the *alpages*. *Alpages* are groups of individuals that hold surface rights to alpine pasturelands. An *alpage* may have a large number of owners, up to several hundred, and the pastureland held can cover from a few km<sup>2</sup> to several tens of km<sup>2</sup>. An individual can own an interest in more than one *alpage*, and ownership can be inherited, bought or sold. Ownership may or may not include voting rights, and each *alpage* has an annual general meeting.

In the case of a restricted access road, permission may be required for access to the Property. In 2009 and 2010, a large field crew was active in many areas of the Siviez Permit and it experienced no issues with using existing access roads and trails.

Drilling or trenching requires a construction permit from the local *Commission Cantonale des Constructions* ("CCC"), if the work is near a town. Trenching or drilling in forested areas also requires authorization from the local commune. The Property has little to no tree cover and most areas of interest identified to date are well above the tree line.

There are three hydroelectric tunnels passing under the Property. In June 2010, AuroVallis entered into an agreement with Alpiq, the owner of the two more northerly hydroelectric tunnels. One of Alpiq's tunnels is within 240 m of surface and within the Grand Alou area of interest. To provide comfort to Alpiq and to the local communities, Urania signed an agreement to inform Alpiq of any drilling that is within 100 m of their tunnels, and Alpiq has agreed to respond within 10 days of any request to drill. Subsequent to the signing of the

agreement, AuroVallis submitted a 3D model illustrating the locations of the proposed 2011 drilling relative to the tunnel and Alpiq approved the drilling as proposed in the Grand Alou area.

Highly radioactive, naturally occurring uranium-bearing rocks from the Property shipped to laboratory facilities outside of Switzerland must comply with all federal radiation protection regulations. One member of the Urania exploration team must be trained to oversee that appropriate measures are taken to ensure worker safety, and ensure safe shipping and handling methods are used for radioactive materials. A course offered by the Swiss Federal Office for the Protection of Workers ("**SUVA**") has been attended by one of Urania's representatives to ensure the company is fully informed regarding compliance. Radioactivity badges, supplied and monitored by SUVA, must be worn by all personnel for the duration of the work on the Property.

## **5. ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 CLIMATE AND ACCESS**

The climate of Switzerland is moderate with very few extremes of hot and cold, although the mountainous character causes the weather to vary substantially from place to place. Summer is warm to hot, lasting from about June to September. There is sufficient cold weather and snow at higher elevations for skiing from late November until April. In the winter, temperatures rarely drop below  $-5^{\circ}\text{C}$ , except on the higher elevations. The average amount of sunshine per year is approximately 1,700 hours.

In Sion, the capital of Canton Valais and the centre closest to the Property, precipitation is fairly constant throughout the year, varying from 36 mm in April to 62 mm in December (annual total 572 mm). The average temperature in Sion (~480 m asl) varies from  $-1^{\circ}\text{C}$  to  $-2^{\circ}\text{C}$  from December through February, and  $17^{\circ}\text{C}$  to  $19^{\circ}\text{C}$  from June through August. Temperatures on the Property are cooler due to higher elevations (1,400 m to 2,885 m asl). Field work is limited to the snow-free season between roughly mid may and early November.

Sion is a two-hour highway drive east from Geneva and is also accessible via Switzerland's renowned train service. The local airport has limited charter aircraft service and Air Glacier operates a helicopter service that has been used by Urania. There is a grass airstrip in use near Col des Mines.

The Property is largely uninhabited, but is surrounded by developed areas and can be accessed by road from several directions. From Sion, it is a 30 minute drive to the edge of the Permit area, mostly along paved roads servicing the local communities and ski areas. Grand Alou and Plan du Fou (2,436 m asl) are accessible via a 7 km four-wheel-drive road during the summer, although the distance in a straight line is about 2.2 km. A gondola station and restaurant are located at Plan du Fou, but are only used during the winter.

The north-western part of the Property (near Grand Alou and Plan du Fou) can be accessed by well-travelled, paved, switch-back roads from Sion that service many small communities such as Nendaz and Iserables. The Col des Mines area in the southern part of the Property can be accessed from Verbier, about 11 km away. Access is mostly by paved road with the last part requiring a 4-wheel drive vehicle. Several areas with known mineralization are accessible from the end of road points by often well established footpaths.

## **5.2 INFRASTRUCTURE AND LOCAL RESOURCES**

The cantonal capital of Sion, the closest population centre to the Property with a population of roughly 32,000, offers a full range of services. There are small villages in the north-eastern and north-western corners of the Property, but due to the rugged terrain and elevation the area is otherwise uninhabited. Located in many places along the base of the mountain flank, agricultural villages produce fruits, forest products and dairy products. Since the 1960s, winter skiing has become popular in the area, and several parts of the Property are crossed by gondola lifts or chair lifts. Nendaz Station has a peak population of 35,000 in winter which declines to only 7,000 in summer.

Sion and a number of small communities provide an adequate supply of labour and equipment for exploration. Power lines reach all of the surrounding areas and the communities. The 87 m high Cleuson dam is within 2 km of the eastern Property boundary and is part of the major Cleuson-Dixence complex of pumping stations, power stations and dams. The 285 m high Grand Dixence dam, located 7 km southwest of the Cleuson dam, is the tallest gravity dam in the world. The complex sends water to four power stations generating about 2,000 GWh annually.

There are a few permanent but small water sources in the south-western portion of the Permit area. In the north-eastern part, at Plan du Fou, the local ski company has a 30,000 litre water tank and pumping system used only in the winter months for snow making, that is likely available for any drilling or trenching programs.

The project is at an early stage of exploration and until such time as a mineral resource is defined, Urania is not presently conducting an evaluation of the mining aspects of the project. It is important to note that there have been numerous past and present hydro-electric and road tunnel projects in this region of Switzerland that have satisfactorily dealt with extraction and waste rock storage issues. There are large uninhabited areas within the Property, at least some of which could accommodate typical mining infrastructure.

Notwithstanding Switzerland's very limited mining experience, the Swiss in the last 50 years have developed underground expertise from construction of the large tunnels for roads and rails in Alpine terrains, as well as dams for the hydroelectric installations of Emosson, Grand Dixence and the current Nant de Drance project near Finhaut. Recent tunnelling projects include the 36 km long Lötschberg Railway Tunnel, completed in 2007, and the Gotthard

Railway Tunnel that is currently under construction and, at 57 km, will be the world's longest tunnel. According to Urania, there are diamond drill and heavy equipment contractors in the region experienced in operating on alpine slopes.

### **5.3                    PHYSIOGRAPHY**

The topography on the Property varies from steep rocky cliffs to gently sloping pasturelands. Westerly and north-westerly facing slopes are the steepest and are often talus-covered. Elevations vary between about 1,400 m and 2,885 m asl, for a total relief of approximately 1,485 m. High points on the north-south ridge system through the centre of the Property have elevations of between about 2,400 and 2,700 m. Most of the outcropping mineralization is at 2,200 to 2,600 m asl.

Forest cover, consisting predominantly of fir and tamarack, occurs only at lower elevations in the north-eastern and north-western areas of the Property. About three-quarters of the Property is above tree line, including the areas of known mineralization. The alpine vegetation consists of grasses, low willows and other low-lying plants such as blueberries. *Alpages* cover much of the Property, although the areas of mineralization are too steep and rocky for cattle.

## 6. HISTORY

### **6.1 MINERAL INDUSTRY OF SWITZERLAND**

Mining in Switzerland dates back possibly as far as the Iron or Bronze Age. The Romans mined lead and placer gold. In the Mont Chemin area, about 15 km west-southwest of the Property, mining dates back to the 5<sup>th</sup>-7<sup>th</sup> century AD with iron reduction workings. In the 18<sup>th</sup> and 19<sup>th</sup> centuries, Switzerland had many small metal mining operations, especially in Canton Valais. Around Mont Chemin, magnetite skarns and lead-silver-fluorite veins were mined intermittently until World War II. Minor gold production has come from the Calanda and Costa mines in eastern and southern Switzerland, respectively, as well as the Salanfe area and Gondo mine in Valais. Between the 1800s and the beginning of World War II, operations closed as mineral deposits were exhausted. The largest private employer in Valais remains Alcan Aluminium Valais S.A., which maintains a large aluminium extrusion, casting, and rolling mill in Sierre. In April, 2006, the aluminum smelter at Steg was decommissioned after more than 100 years of operations due to the expiry of cheap electricity contracts.

WGM is not aware of any metals currently being mined in Switzerland. Metal processing, as of 2006, was confined mainly to the production of primary and secondary aluminum, copper, secondary lead, pig iron, and steel. Industrial minerals mined and processed include cement, clays, gravel, gypsum, salt and lime (Newman, 2007).

Exploration for uranium in Switzerland began in the late 1950s when radioactivity was discovered in hydroelectric tunnels in the Siviez area under the current Property. Exploration continued intermittently over a period of more than 20 years. The area of Urania's Marécottes Permit, near Martigny, also became a focus for uranium exploration in the 1970s to early 1980s after radioactivity was encountered in a hydroelectric tunnel southwest of Finhaut in 1969, and pitchblende (uraninite - UO<sub>2</sub>) and gummite (U-hydroxides) were discovered nearby at Gisiger and Juillard a few years later. Another uranium occurrence, located east of Disentis, in Trun region within the Tavetscher-Zwischen Massif, is not as significant and did not see much exploration. In the early to mid 1980s, exploration efforts were abandoned due to a declining global uranium price and opposition to the use of nuclear fuels. Exploration in both the Siviez and Marécottes areas were curtailed in 1986 after the Chernobyl accident in Ukraine and the decline in uranium price.

As far as WGM is aware, there is no history of the exploitation of uranium in Switzerland except for a small amount of material processed subsequent to the underground exploration at La Creusaz on Urania's Marécottes Exploration Permit.

## **6.2 HISTORY OF EXPLORATION ON SIVIEZ**

The Romans are known to have mined around Martigny and are thought to have exploited some of the lead-zinc-silver mineralization around Siviez. The Col des Mines, Siviez and Grand Alou areas have a large number of shallow shafts, pits and exploration adits on lead-silver mineralization dating from the 1700s and 1800s, and some remains of a mining-era building exist at Col des Mines. All of the previous workings are of very limited size.

Exploration for uranium in Switzerland began in 1946 with the establishment of the Arbeitsausschuss für Atombrennstoffe (Institute for the Study of Atomic Materials) with the mandate to test all underground installations and excavations for mineralization. In a program that took over 20 years to complete, all road, rail and hydroelectric tunnels in Switzerland were methodically checked for radioactivity.

The earliest exploration at Siviez is summarized by Hügi and others (1967). The first discovery of uranium mineralization in Canton Valais was under the present Property in 1957, during routine testing for radioactivity in a water conduit tunnel being constructed from the Fionnay Power Station (1,490 m asl) high in the Alps to the Nendaz Power Station (478 m ASL) on the Rhône River. The mineralization is at a depth of approximately 800 m below surface or at an elevation of 1,400 m asl, near the town of Isérables.

From the water conduit tunnel, a 19 m long exploratory drift was excavated and some underground drilling done. The analysis of 35.9 t of unsorted muck yielded an average grade of 0.03% U (0.035%  $U_3O_8$ ). Two samples were extracted from two higher-grade areas, the first weighing six tonnes and the second 3.6 tonnes, which contained 0.15% U (0.177%  $U_3O_8$ ) and 0.07% U (0.083%  $U_3O_8$ ), respectively. Significantly, thorium contents were <10 ppm, suggesting a sedimentary rather than a granitic association. Eight-hour sulphuric acid-leaching experiments at 80°C showed solubilities of uranium from 71 to 93 wt %. In addition to comprehensive chemical analysis, a large amount of petrographic and mineral characterization work was done. It was hypothesized that the uranium was syngenetic in origin and related to Permian clastic sediments with solution migration along structural pathways during metamorphism.

In 1958-1959, mineralization was located at surface by radiometric prospecting, more than 800 m up-dip from the tunnel occurrence, at about 2,200 to 2,400 m asl. The mineralized areas of Grand Alou, Les Plans and Col des Mines were discovered, covering a strike length of approximately 5 km straddling the contact between mafic metavolcanic rocks of the Siviez

Series and the clastic metasedimentary rocks of the Nendaz Series. Intervening areas are covered by scree. A comprehensive programme of geophysical ground prospecting, sampling, blast trenching, geological mapping and exploratory drifting was carried out. The work was done by Grande Dixence which had obtained and annually renewed an Exploration Permit over the Siviez project area from 1959 through 1993 (Ruchat, 1999).

Maps showing the extent of mineralization were prepared through the late 1960s by Dr. T. Labhart of the Fachkommission für Schweizerische Uranvorkommen (Commission for Research into Swiss Uranium Occurrences) (Labhart, 1967). In addition, at Le Fou, numerous trenches were dug and sampled, but the uranium analyses from that work are unavailable (Labhart, 1969). During 1968, a 160 m long adit at Col des Mines (2,374 m asl) was excavated and mapped radiometrically. Various plans and sections are available from 1968-1969, but no analytical data are available. The adit followed a series of subparallel, roughly north-south striking, copper-bearing zones of uranium mineralization offset by minor faults. Urania has identified and sampled the surface expression of this zone, but the adit is not safely accessible.

Exploration continued from 1982 to 1984 by L'Office Fédéral pour l'Énergie Nucléaire (Federal Office for Nuclear Energy), through the consulting group Bureau d'Études Géologiques S.A. ("**BEG**"). This work consisted of verification of the previous work as well as systematic non mechanical trenching of the various occurrences at Le Fou, Grand Alou and Les Plans. At Le Fou, a large outcrop of Siviez Series metasedimentary rocks was stripped and sampled (BEG, 1982a, 1982b; Moix and Cavalli, 1984). The best assay was from a grab sample south of anomaly U4 which returned 504,000 ppm U (59.43%  $U_3O_8$ ); another sample from the same locality returned 285,000 ppm U (Moix and Cavalli, 1984).

A single diamond drill hole was attempted at Les Plans in 1984. The hole was started in mid-October and abandoned a month later after the rods froze in the hole at a depth of 138.5 m, short of the projected target. Recovery was often poor. Radiometric logging detected two anomalies just below the collar of the drillhole (Moix and Cavalli, 1984). As far as WGM is aware, none of the drill core remains intact.

All historical published estimates of resources are speculative as they are based on data collected from limited surface exposures and a very simplified model. For the area between Col des Mines and Le Fou, Gilliéron (1988) estimated "possible geological resources" of 250 t of uranium metal above 2,200 m elevation, and additional "speculative geological resources" of 450 t of uranium metals below 2,200 m based on the following assumptions: a tabular mineralized zone averaging 150 cm wide, an average U content of 150 ppm and a

specific gravity of 2.5. At an elevation of 2,200 m, Gilliéron estimated the length of the zone to be approximately 2,000 m. The estimated length at 2,000 m asl was approximately 3,500-4,000 m. At Grand Alou, Gilliéron estimated "possible geological resources" of 20 to 30 t of uranium above 2,350 m elevation, and "possible speculative resources" of 100 to 200 t of uranium between 2,200 m and 2,350 m elevation, based on an average uranium content of 400 ppm U, an average width of 170 cm and a specific gravity of 2.5. The methodology of the resource estimates was simplistic and unclear, and the resource estimates would not meet the definition standards of NI 43-101 and the CIM.

The forgoing resource estimates have neither been reviewed nor verified by WGM. Based on the information available, it is unlikely that these estimates could be converted to a NI 43-101 compliant resource, and so the forgoing estimates should not be relied upon.

The canton-wide "Project Uromine" (1979-1984) identified elevated gold values of 28 ppb and 14 ppb in stream silt samples in the Siviez - Grand Alou area. As part of this project, a grab sample from Grand Alou (anomaly U14) was reported at 11.9 g Au/t (Della Valle, 1990).

Although no underground exploration and essentially no drilling has been done on the Property, additional evidence of the continuity of uranium mineralization at depth is provided from a second Grande Dixence S.A. water conduit tunnel dug in 1993 under the Grand Alou area. As part of an academic study, Ruchat (1999) conducted a cart mounted survey along the tunnel and recorded some strong radioactivity in less than ideal conditions after the walls of the tunnel had been shotcreted. The main anomaly was at about 2,157 m asl, or roughly 240 m below surface. Ruchat also re-examined both uranium and lead-zinc-silver occurrences across the property.

## 7. GEOLOGICAL SETTING

### **7.1 REGIONAL GEOLOGY**

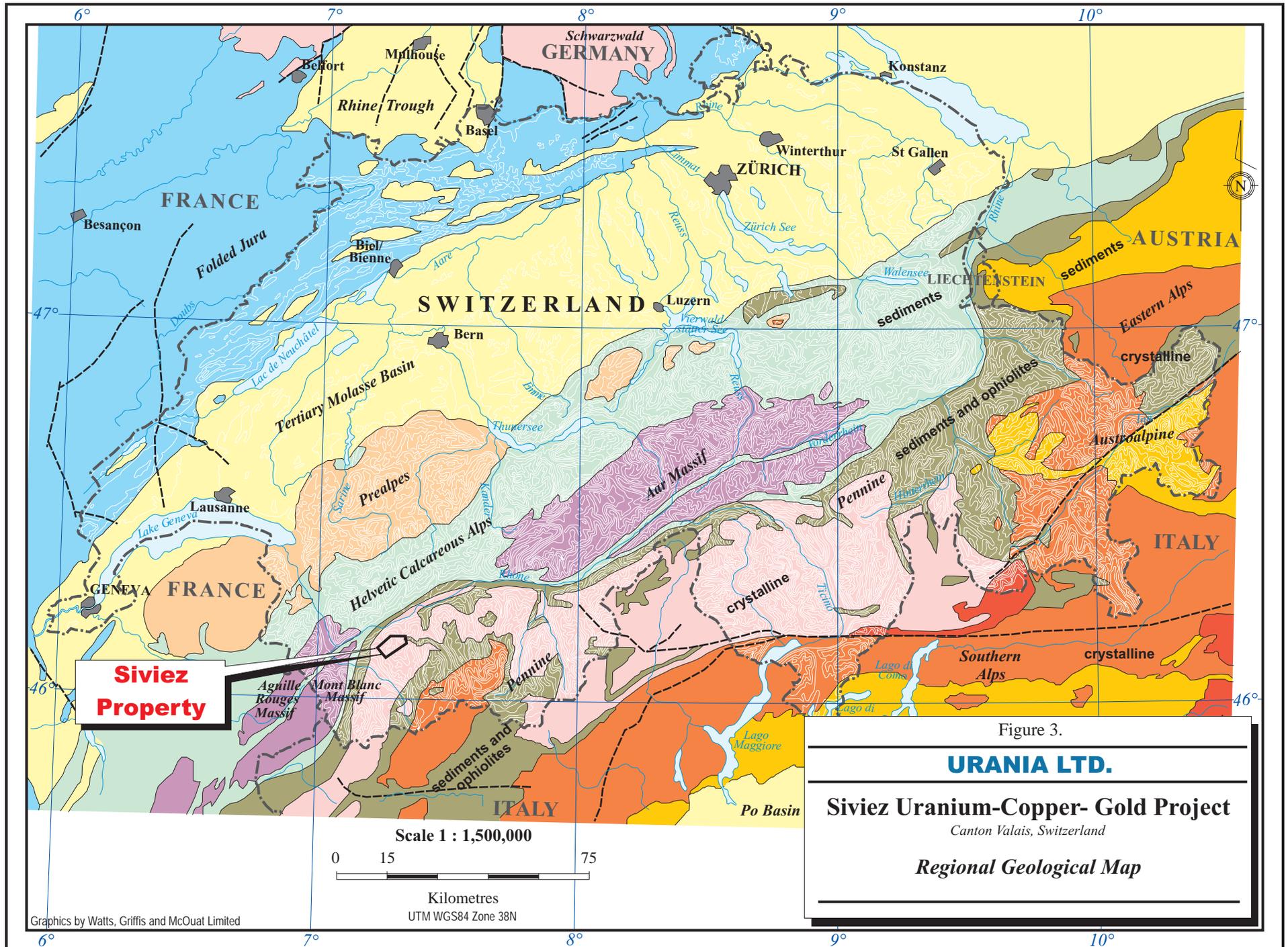
Switzerland has six main geological divisions (Figure 3) which, according to Jaffé (1989), from north to south, are:

- The Jura, a simply folded suite of Mesozoic sedimentary strata;
- The Tertiary-aged Molasse basin, which consists of a sequence of clastic sedimentary rocks derived from the erosion of Alpine rocks during and following their uplift;
- Mesozoic sedimentary rocks of the calcareous Alps, which were strongly dislocated and overthrust during the Alpine orogeny;
- The Hercynian massifs, consisting of a central granite core surrounded by metamorphic rocks formed during events related to the Hercynian and likely the Caledonian orogeny. These include the Mont Blanc - Aiguilles Rouges Massif in western Switzerland, and the Aar-Gotthard Massif in central Switzerland. These rocks underlie the Property as well as Urania's Mont Chemin Exploration Permit;
- The Pennine and Austroalpine Alps, a complex sequence of metamorphic, sedimentary and volcanic rocks which cover a broad time span from, possibly, the Precambrian to the Mesozoic. These rocks are characterized by intense Alpine orogeny deformation, including large overthrust such as the St. Bernard nappe. Urania's Siviez Property is underlain by this zone. The main Rhône valley around Sion separates the calcareous (Bernese) Alps in the north from the Pennine Alps in the south; and,
- The southern Alps, mainly metamorphic rocks overlain by sedimentary rocks, occur only in the southernmost part of central Switzerland.

### **7.2 PROPERTY GEOLOGY**

The local geology of the Property is shown on Figure 4. A series of cross-sections in the main areas of uranium occurrences is given on Figure 5.

The region constitutes part of the Pennine Alps characterized by overthrust nappes. The core of the Property is underlain by northeast-southwest trending units of the Siviez Mischabel nappe, which consists of metasedimentary and metavolcanic rocks of the Mont Gond Series (conglomerate, sandstone and quartzite), the Siviez Series (metavolcanic rocks) and the



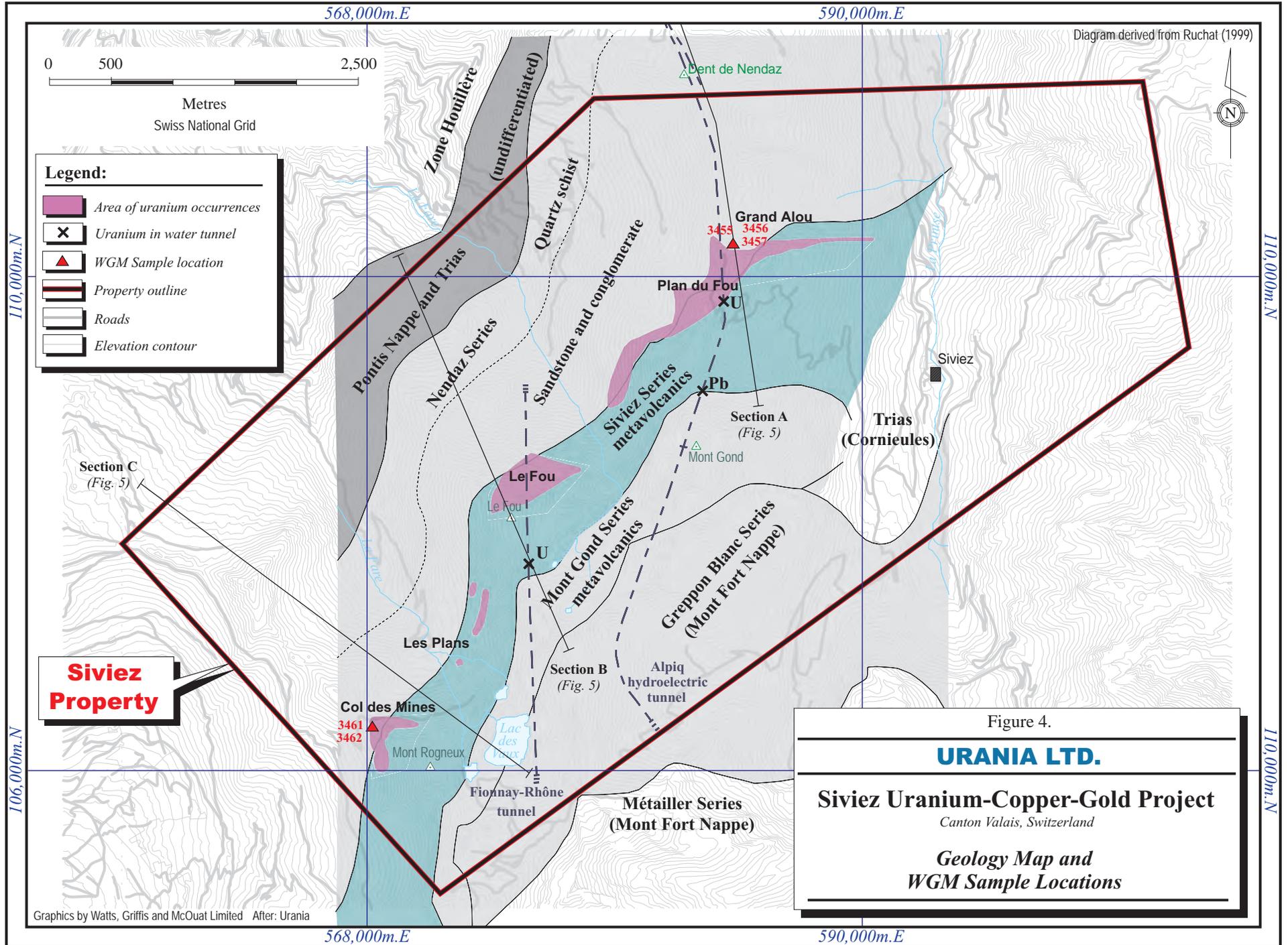
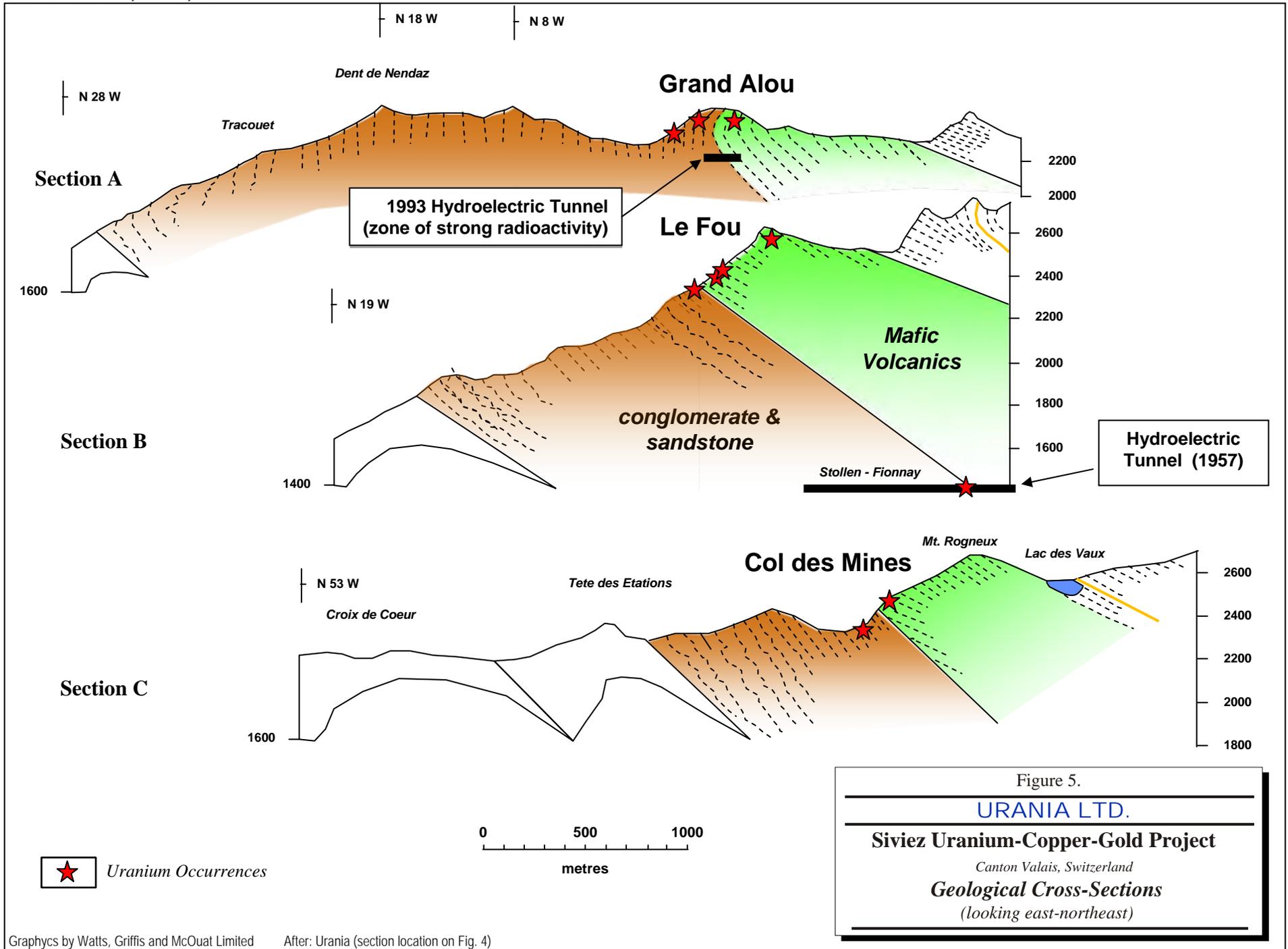


Figure 4.



Nendaz Series (conglomerate and sandstones) that are exposed along the western side of the Siviez Series. Structural and other geological evidence suggest that the sequence is overturned, and that the Siviez Series is older than the Nendaz Series (e.g. Barclay, 2009).

The Nendaz Series is a Permo-Carboniferous unit of metaconglomerate, meta-arkosic sandstone, quartz-albite-chlorite schist and minor albite-chlorite-epidote greenschist. The coarser metaconglomerates and arkoses are more prevalent in the northern part of the Permit, in the Grand Alou – Dent de Nendaz region. These detrital sediments represent continental fluvial to fluvial-deltaic sequences. A minor volcanic component, representing late orogenic alkaline magmas of the last Hercynian episode, is represented by conglomerates with rhyolitic elements and beds of quartzo-feldspathic gneiss.

Individual units of the Nendaz Series, at the scale of Siviez Mischabel nappe, vary considerably in thickness and can be discontinuous; this may be due to either individual basins resting on the basement, lateral facies changes or tectonic effects, or a combination of these settings. The sequence has been metamorphosed to the greenschist facies (Della Valle, 1990).

The Siviez Series is a complex of predominantly mafic metavolcanic rocks consisting of banded mafic schist, amphibolite, schist and albitic gneiss of volcanic and lesser sedimentary origin. The series is polycyclic and underwent Hercynian amphibolite grade metamorphism and subsequent retrograde (greenschist) metamorphism during the Alpine orogeny (Della Valle, 1990; Ruchat, 1999).

The contact between the Siviez metavolcanic rocks and the Nendaz metasedimentary strata is of particular importance because the uranium-copper-gold mineralization straddles this contact along a 6 km strike length. The top of the Siviez Series corresponds to a banded section of chloritic schists and amphibolites. In addition to uranium, the banded interval also contains lead, silver, copper and barite mineralization.

According to Della Valle (1990), the contact between the Siviez and Nendaz Series is well defined at Grand Alou and Plan du Fou, but it is not easily found in the field farther to the south where it is marked by a passage from metabasalts to a locally conglomeratic, detrital sequence. Moix and Cavalli (1984) noted that the exact location of the contact between the Nendaz and Siviez Series is unclear at Les Plans. Away from the contact, the Siviez rocks are massive, banded and schistose metabasalts – in general, greenish rocks. Away from the contact, the Nendaz Series sedimentary rocks include phyllite, metasandstone and metaconglomerate. However, in some places along the contact there is often an interval of

several tens of metres where they appear mixed. This could be due to either tectonic interleaving or the deposition of eroded material from the Siviez Series along with basal units of the Nendaz Series, or facies changes. It is not known whether the contact is conformable, semi-conformable or unconformable.

Some distance to the northeast of the Permit, metamorphosed granitic rocks, now orthogneiss, have been described in the crystalline basement of the Siviez Mischabel nappe (Markley and others, 1999), but they have not been seen in the Permit.

The south-eastern portion of the Property is underlain by the Mont Fort nappe, consisting of the Métallier Series (basement) and Permo-Triassic rocks (quartzite, conglomerate and sandstone) of the Greppon Blanc Series. Underlying the north-western margin of the Property, the Pontis nappe consists of basement and Permo-Triassic and Mesozoic cover rocks (quartzite, limestone, dolomite and pink banded quartzite with green pelite).

## 8. DEPOSIT TYPE

Any selection of a deposit model for the uranium-copper-gold mineralization at the Property must take into account the considerable strike length of the zone (~6 km), the reported depth extent (~800 m), the elevated contents of uranium and copper, as well as locally interesting silver, gold and lead contents, the coincident low airborne magnetic signature and the apparent lithostratigraphic control on mineralization.

Elements of stratiform and stratabound uranium deposit models have been tentatively applied at Siviez, and the mineralization may be syngenetic-diagenetic in origin.

There appear to be no direct analogues with the Siviez-style of uranium mineralization elsewhere in Europe. The Siviez uranium-copper-gold mineralization is suspected to be of Permo-Carboniferous age, and only one of many types of uranium occurrences of Hercynian-age stretching across Europe from Portugal and Spain to the Czech Republic. These deposits are all ultimately thought to be related to a protracted period of rifting and granite emplacement. The majority of the European uranium deposits are clearly spatially and genetically related to granite, although a number of tabular sandstone-hosted deposits have been mined in the Czech Republic, France and Germany. Granite is absent along the Siviez trend, although vein-type and episyenite-hosted, granite-related uranium mineralization is the subject of exploration at Urania's Marécottes Exploration Permit, located approximately 25 km to the west.

Interestingly, it has been suggested by Hügi and others (1967) that Siviez is one of a large number of potentially stratiform and stratabound uranium occurrences extending more than 70 km in an arc from Val d'Entremont (near Bourg St. Pierre) to the Mattertal (south of Visp). The majority of these occurrences are unstudied, but similarly lie within Carboniferous epicontinental basins in-filled with clastic sediments derived from granitic sources.

At Siviez, the fact that mineralization is focussed at or near the contact between the metasedimentary and mafic metavolcanic rocks suggests that this physico-chemical discontinuity was important for the deposition of uranium. There is an absence of extensive veining along the contact, though there is patchy silicification, ankerite, white mica, disseminated sulphide, chlorite, and intense structural deformation. These are consistent with a late diagenetic to hydrothermal origin. The absence of veining may be attributable to a lack of open spaces in the host formation and a low concentration of silica in the mineralizing fluids.

Other European Hercynian deposits at structural discontinuities are clearly vein hosted, but have much less areal extent than Siviez. There is little doubt that the Siviez-Nendaz contact, visible in a number of locations on the Property, is now a fault nappe. Urania's working hypothesis is that the Siviez volcanic rocks and overlying Nendaz sedimentary rocks were once conformable and that contrasting structural competency during the Alpine orogeny led to structural failure (detachment) along the contact during folding.

In a scenario where a mafic volcanic unit, such as the Siviez unit, lay in contact with a coarse clastic unit derived from the uraniferous granite, such as the Nandez sediments, it is plausible that basinal brines dissolved and then transported uranium both laterally and vertically in the sedimentary pile. A mafic volcanic unit would act as an aquitard, based on its lack of porosity, and an oxidation-reduction front based on its iron-rich nature. Uranium, copper, and sulphur-bearing fluids could be destabilized by coming in contact with magnetite-bearing iron-rich units in a redox-type reaction and would precipitate metals in an electro-chemical manner similar to that which controls the localization of sandstone-hosted, "roll-front" deposits. This would explain the apparent lithostratigraphic control to mineralization, although considerable mineralization is also present within the volcanic unit, increasingly so at Le Fou.

A magnetic low from the airborne geophysics correlates to the mafic metavolcanic unit and extends along the length of the property flanking or coincident with the mineralization. This extensive destruction of magnetite in the mafic volcanic rocks may be attributable to reduction and sulphidation from the mineralizing fluids. Similarly, carbonaceous material in the Siviez sediments may have acted as a reductant to uranium-bearing fluids, as evidenced in the nearby Salvan-Dorénaz basin where the coal accumulations are locally uranium-bearing (Meisser, 2003).

The closest proposed analogue is the Westmoreland deposit in Queensland, Australia, which consists of a number of uranium  $\pm$  gold zones along the contacts between mafic intrusive and extrusive bodies, and adjacent quartz pebble conglomerates. It is thought that chlorite associated with the volcanic rocks provided a chemical trap that reduced and deposited uranium (and hematite) from basinal fluids migrating through the conglomerate (Polito et al, 2005), although more recent thinking includes structural controls.

At the Matoush deposit in the Proterozoic Otish Basin, Quebec, the main mineralized zones occur from 150 to 600 m above the Archean basement without significant uranium mineralization at the unconformity. There, the mineralization is hosted in a basement-penetrating fault, occupied by a mafic dyke, at the intersections with apparent paleoaquifers (Ross and Cook, 2008). Siviez is unusually copper-rich which may make it more akin to some of the deposits along the Zambian Copper Belt, which can contain copper associated with uranium and gold in coarse sediments, and are thought to be syngenetic to early diagenetic.

## 9. MINERALIZATION

### **9.1 GENERAL**

Occurrences of uranium ± copper ± silver ± gold mineralization, accompanied by highly anomalous radioactivity, are widespread on the Property, roughly straddling the contact between metavolcanic rocks of the Siviez Series and metasedimentary rocks of the Nandez Series. They extend over an interrupted distance of approximately 6 km, almost the full length of the Property. Some areas along the contact zone, covered with talus and scree, interrupt the otherwise more-or-less continuous zone of anomalies and occurrences.

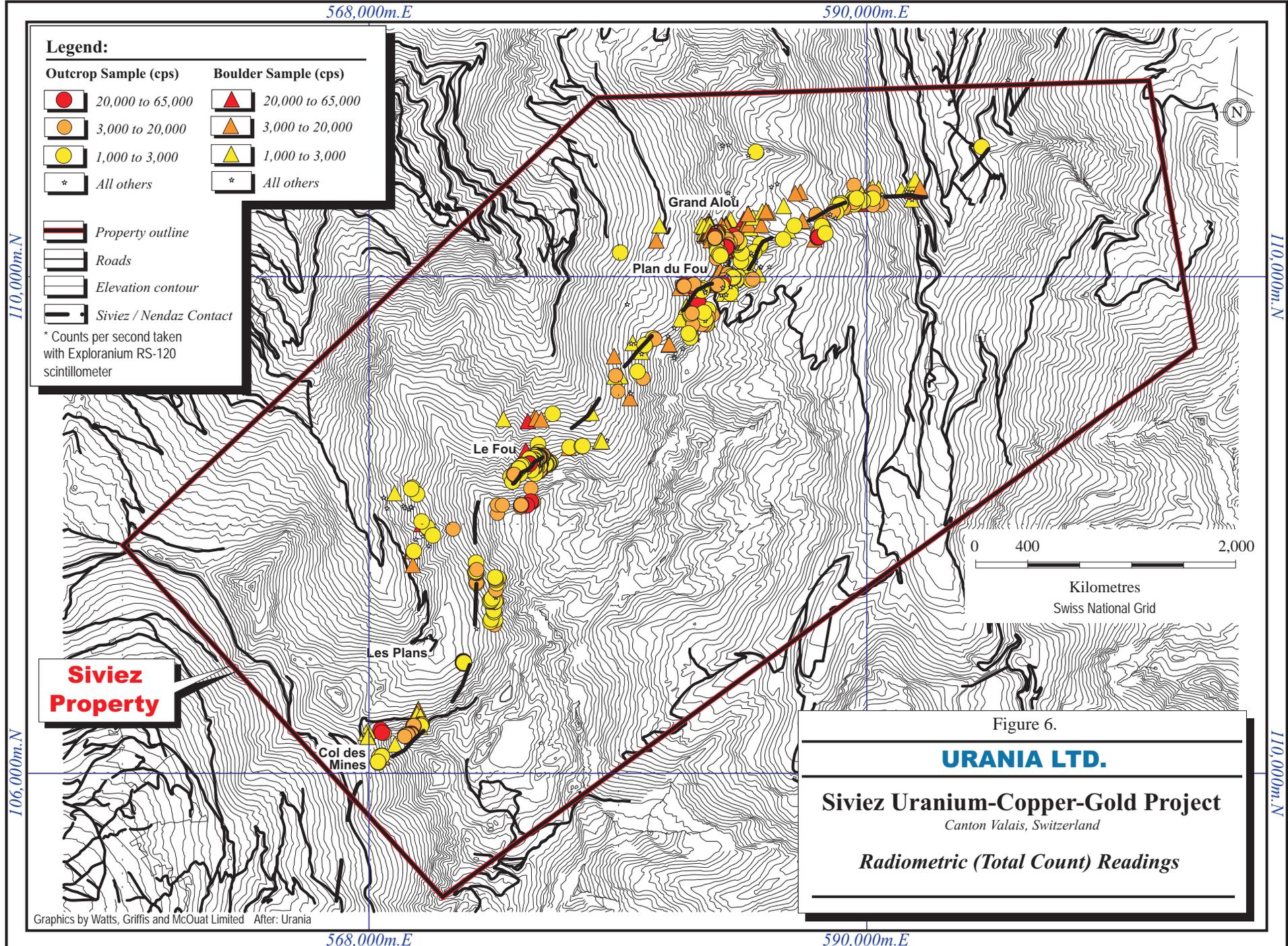
During the 2009 field season, Urania identified numerous individual occurrences of uranium mineralization in the field, many of which, but not all, were coincident with historically reported zones. Forty-two (42) samples of bedrock and sub-crop contained over 0.2% U<sub>3</sub>O<sub>8</sub>, and 136 locations across the Property gave total count radiometric readings of over 10,000 cps (representing at least 30 to 100 times background). Radiometric results are shown on Figure 6. Additional occurrences were located in 2010, but are not reviewed herein.

Uranium mineralization at Siviez consists of disseminations, pods, and swarms of small veins of pitchblende and coffinite, together with pyrite and ubiquitous copper sulphides (chalcopyrite, tetrahedrite, chalcocite, covellite), as well as secondary copper carbonates (azurite and malachite). Native gold has been identified in petrographic examination of polished samples and in residues from hydrofluoric acid digestion, but its distribution at Siviez is as yet unclear.

The uranium-copper-gold-silver occurrences occur have been explored in five main areas: (from north to south) Grand Alou (and adjacent Plan de Fou), Le Fou, Les Plans and Col des Mines.

### **9.2 GRAND ALOU AND PLAN DU FOU**

At Grand Alou, uranium ± copper ± silver ± gold mineralization outcrops within an area of about 200 x 200 m. Individual zones of anomalous radioactivity are up to 30 to 40 m in length. The mineralization occurs within metamorphosed channel-fill conglomerates and sandstones of the Nendaz Series above the contact with the metavolcanic rocks. Barclay (2009) interpreted the mafic metavolcanic rocks to be older than the metasedimentary strata,



**Legend:**

Outcrop Sample (cps)	Boulder Sample (cps)
20,000 to 65,000	20,000 to 65,000
3,000 to 20,000	3,000 to 20,000
1,000 to 3,000	1,000 to 3,000
All others	All others

	Property outline
	Roads
	Elevation contour
	Siviez / Nendaz Contact

\* Counts per second taken with Exploranium RS-120 scintillometer

Figure 6.

**URANIA LTD.**

**Siviez Uranium-Copper-Gold Project**  
 Canton Valais, Switzerland

*Radiometric (Total Count) Readings*

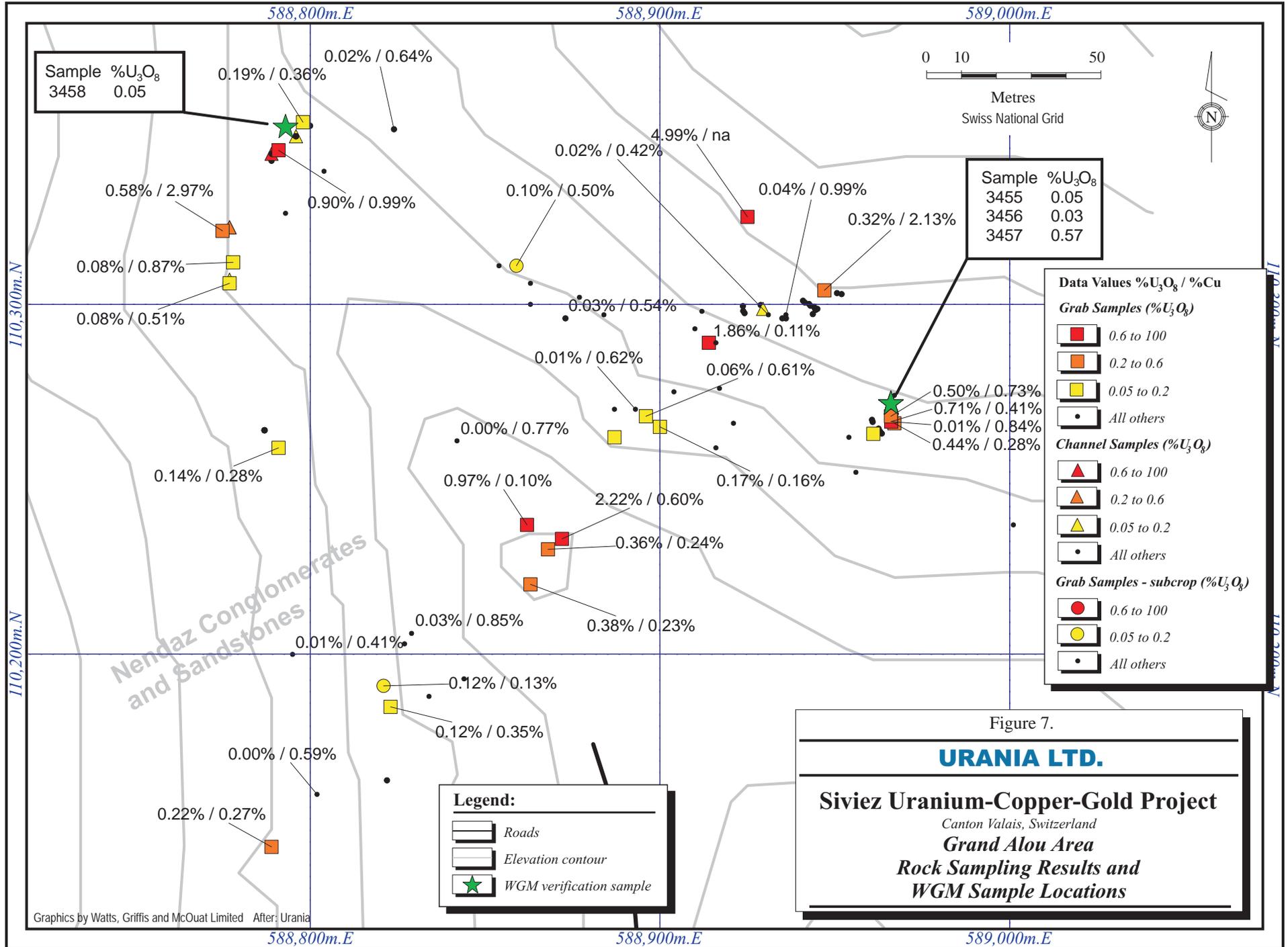
and to occupy the nose of a recumbent fold, likely of a regional scale. The concentration of mineralized zones at Grand Alou suggests that structure may have played a significant role in the deposition of mineralization.

The dominant lithology is quartzo-feldspathic schist containing bands of chloritic schist and lenses of meta-conglomerate. The units have been affected by at least three phases of Alpine deformation. Stratiform occurrences are about 10-90 cm thick and extend laterally from a few metres to about ten metres, as exposed, within a schistose-sandstone sequence about 30 m wide. Albite-bearing quartz and carbonate veins, with disseminated or remobilized mineralization, are generally associated with the stratiform type, and appear to have been emplaced along schistosity planes at an early stage of the Alpine event. A third type of mineralization consists of mineralized impregnations and quartz-carbonate veins in the plane of schistosity S2 or S3, possibly related to zones of shearing.

Historic work based on surface exposures suggests an estimated average width of mineralized intervals in the Nendaz Series in the vicinity of Grand Alou of 1.72 m, with an average grade of 462 ppm U and 3,442 ppm Cu. Sixteen of 147 historical samples contained >1 g Au/t, with a maximum of 11.5 g Au/t. Mineralization consists of pitchblende, uraninite, coffinite, secondary uranium minerals, pyrite, chalcopyrite and copper sulphosalt minerals, galena, native gold, native silver; cobalt (-nickel) minerals, sphalerite and iron oxides (Moix and Cavalli, 1984; Della Valle, 1990; Ruchat, 1999).

During Urania's exploration program in 2009, 199 samples were collected from the Grand Alou – Plan du Fou area, including 72 channel samples, 2 chip samples, 94 grab samples and 31 samples from float. Of these, 45 samples contained >0.1% U<sub>3</sub>O<sub>8</sub>, of which 21 contained >0.5% U<sub>3</sub>O<sub>8</sub>. Of the same 45 samples, 22 contained >0.5% Cu. Boulder (float) samples contained up to 12.38% U<sub>3</sub>O<sub>8</sub> and 0.76% Cu. The best channel sample contained 0.64% U<sub>3</sub>O<sub>8</sub> and 0.69% Cu across 0.42 m. Sampling results are shown on Figure 7. In 2010, prospecting and ground scintillometer surveying over the airborne anomalies 700-1,000 m east-northeast of Grand Alou (see Figure 6), along the volcanic-sediment contact zone, identified additional uranium mineralization with three of ten grab samples containing >0.1% U<sub>3</sub>O<sub>8</sub> and up to 2.99% Cu. Additional detailed work will be required in 2011 to determine if the target warrants drill testing.

At Plan du Fou, Urania collected a total of 39 samples in 2009, including 9 channel samples, 7 grab samples and 6 samples from float. Of these, 12 contained >0.1% U<sub>3</sub>O<sub>8</sub>, 4 of which contained >0.5% U<sub>3</sub>O<sub>8</sub>; 12 samples contained >0.5% Cu. The best channel sample contained



0.16%  $U_3O_8$  and 0.49% Cu across 0.40 m. The two best grab samples carried 1.30%  $U_3O_8$  and 0.61% Cu, and 3.63%  $U_3O_8$  and 0.25% Cu. Sampling results are shown on Figure 8. Of five additional samples from the metavolcanics at the Plan du Fou area in 2010, two contained significant uranium, one being 0.34%  $U_3O_8$  (0.15% Cu) and a second 1.85%  $U_3O_8$  and 0.21% Cu.

### **9.3 LE FOU**

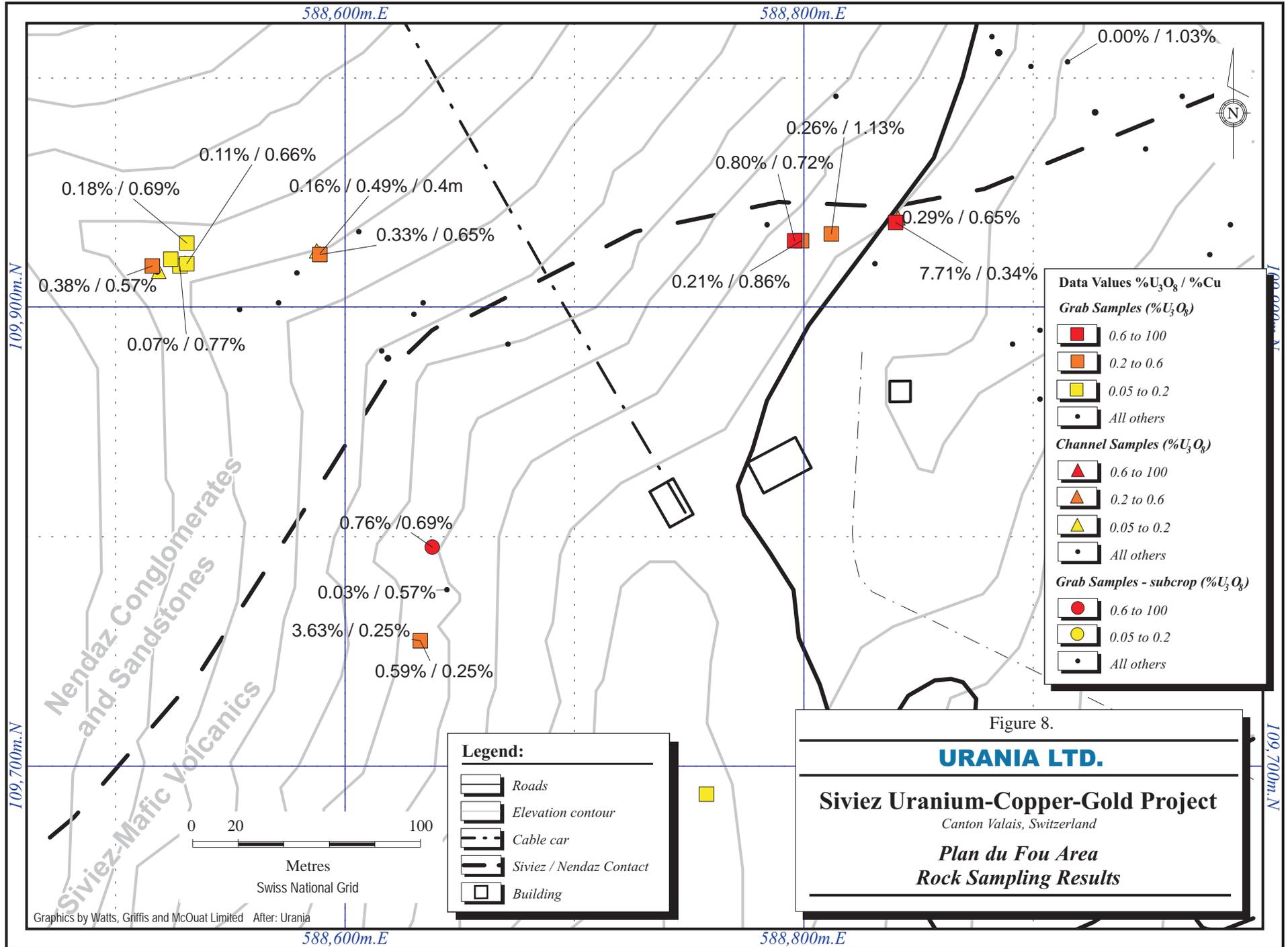
Mineralization on the steep northwest face of Le Fou comprises the largest concentration of anomalies on the Property, but they have not been well described. The last previous work, reported in Labhart (1969) and summarized by Gilliéron (1988), uncovered 346 m of veining in trenches, and there were other unexamined areas and spot radiometric anomalies. Anomalous radioactivity occurs over an area of approximately 700 x 350 m (Cavalli and others, 2002) that has been confirmed by both the airborne radiometric survey and Urania's field work. This distribution has been confirmed by both the airborne radiometric survey and by Urania's field work. Mineralization generally parallels schistosity, and there are up to ten layers, in some areas within a 12-15 m thick zone. There are also near-vertical mineralized faults.

Mineralization occurs as local bands and knots of pitchblende with carbonate and copper minerals. Uranium-bearing zones occur in rock of both the Nendaz and Siviez Series, but in greater abundance in schistose metavolcanic rocks that extend up to the top of Le Fou at 2,610 m asl.

Unfortunately, no geochemical data of the historic work are available. Historic radiometric results from individual samples returned 100 to 40,000 ppm  $U_{eq}$ , or 0.01 to 4%  $U_{eq}$ , and although not accurate, these results suggest the presence, at least locally, of well mineralized material.

Significantly, there is about 1,000 m of elevation separating the mineralization at the summit of Le Fou from the mineralization identified in the Fionnay-Nendaz water tunnel directly below Le Fou, where, in 1957, three large-volume samples of broken rock yielded 0.03% U to 0.15% U (0.035% to 0.177%  $U_3O_8$ ), as described in Section 6.

Access to Le Fou is challenging and Urania's 2009 sampling was restricted to the easily accessible lower areas. A total of seven grab and 45 channel samples were taken. Six



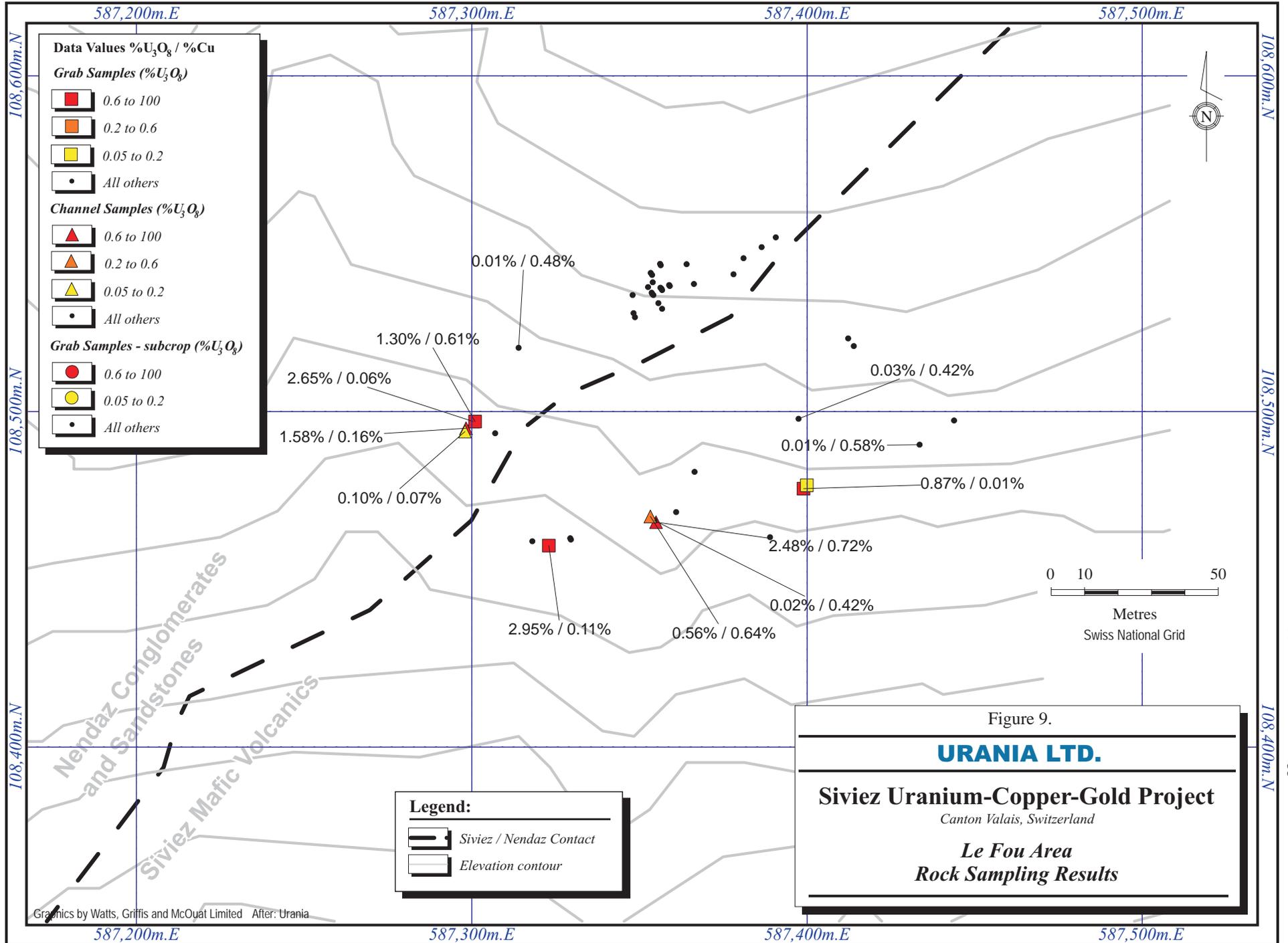
samples returned analyses of  $>0.1\%$   $U_3O_8$ , including: two grab samples with  $0.87\%$   $U_3O_8$  and  $0.01\%$  Cu, and  $0.21\%$   $U_3O_8$  and  $0.13\%$  Cu; and four channel samples containing from  $0.10\%$   $U_3O_8$  and  $0.07\%$  Cu across  $0.85$  m to  $2.48\%$   $U_3O_8$  and  $0.72\%$  Cu across  $0.72$  m. Sampling results are presented on Figure 9. During 2010, a professional climber was used to access some of the steep areas of Le Fou and, according to Urania, a number of highly radioactive zones were identified, some of which were not previously reported. Further analytical work awaits further financing of Urania.

As a result of the more difficult access at Le Fou, a significant amount of geological field work remains to be done. Work to date suggests that most of the uranium mineralization in the Le Fou area is within the metavolcanic unit, although some was identified within the metasedimentary rocks. The initial channel sampling in a small area of Le Fou may not be providing representative samples, as small uranium-rich pods and veins occur within largely unmineralized schist. Copper mineralization is more widespread than the uranium mineralization, although there appears to be good correlation in areas with uranium.

#### **9.4 LES PLANS**

At Les Plans, outcrop is fairly limited and uranium mineralization occurs in both metasedimentary and metavolcanic rocks. According to Moix and Cavalli (1984), mineralization in the volcanic rocks occurs in foliation-parallel bands in albitic and phyllitic gneiss; the main mineralized bed was reported to be about  $4$ - $6$  m thick and laterally constant. The highest concentrations most often correspond to fissures cross-cutting the foliation. Occurrences in the metasedimentary rocks are associated with conglomerate layers. Moix and Cavalli noted that it was difficult, if not impossible to assign certain beds to either the Nendaz Series or the Siviez Series.

Historical sampling on a  $250$  m<sup>2</sup> outcrop returned an average of  $127$  ppm U and  $717$  ppm Cu, and an average width of  $1.09$  m. The highest individual values were slightly  $>1,000$  ppm U,  $4,300$  ppm Cu and  $6,300$  ppm Zn. Moix and Cavalli reported some samples containing gold values in the range of  $500$  to  $1,655$  ppb, with an apparent correlation between copper and gold, but not uranium and gold. In the only drillhole attempted on the Property, a significant radiometric anomaly ( $0.2\%$   $U_{eq}$  across a  $0.7$  m) was detected, but the main target was not tested due to freezing conditions that stopped the drilling.



During the 2009 program Urania took two grab and two channel samples, three of which contained >0.1% U<sub>3</sub>O<sub>8</sub> including 0.32% U<sub>3</sub>O<sub>8</sub>, 0.68% Cu and 16.1 ppm Ag. The best channel sample contained 0.15 %U<sub>3</sub>O<sub>8</sub> and 0.03% Cu across 0.53 m.

## **9.5 COL DES MINES**

At Col des Mines, pitchblende mineralization, often associated with pyrite and chalcopyrite, occurs within the Nendaz Series. There are three relatively continuous horizons of mineralization varying in thickness from several millimetres to several tens of centimetres. Also within the metasediments, mineralization was followed for 163 m in the 1968 adit, and on surface for close to 600 m. The historical reports estimated that an average grade of about 1,500 ppm U across an average width of about 8 cm (Hügi and others, 1967; Cavalli and others, 2002). The most significant anomalies were 12-16 m from the end of the drift, close to a northeast-trending, southeast-dipping shear zone, where pitchblende occurs with chalcopyrite and pyrite at the edge of, or within, sheared carbonate-quartz aggregates, or in chlorite mica schist (Gilliéron, 1988).

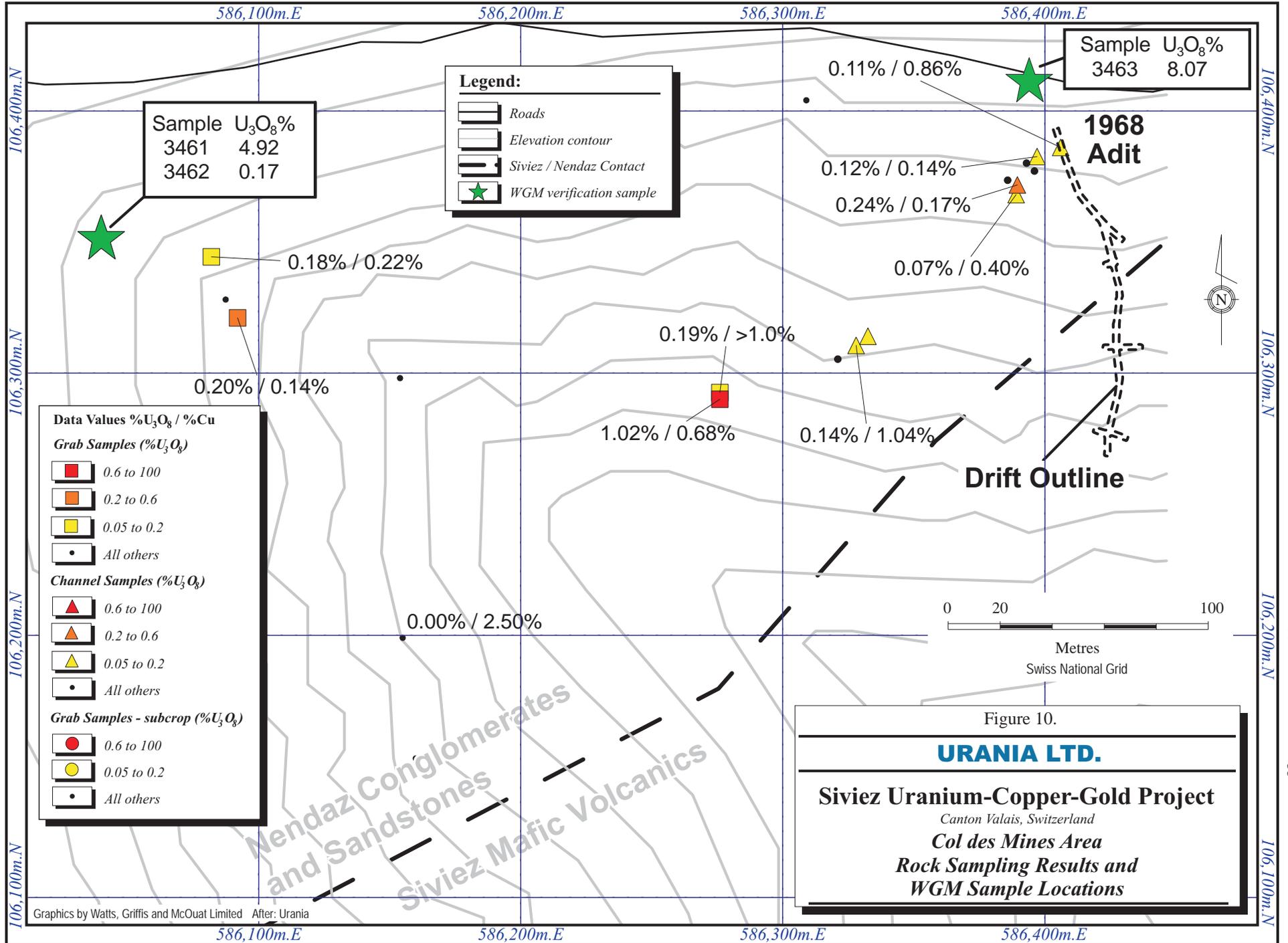
Urania did only preliminary work in 2007 and 2009. Of 21 samples, ten contained >0.1% U<sub>3</sub>O<sub>8</sub> (up to 3.1% U<sub>3</sub>O<sub>8</sub>) and up to 2.50% Cu. The best channel sample contained 0.11% U<sub>3</sub>O<sub>8</sub> and 0.86% Cu across 0.64 m. Sampling results are presented on Figure 10.

## **9.6 LEAD-SILVER AND COPPER MINERALIZATION**

On the Property, a series of lead-silver occurrences are found in proximity to the uranium occurrences, which together with their common sub-concordance to stratigraphy, suggests a possible genetic relationship. The historical extraction of galena for its lead and contained silver dates back to Roman times and several mines were exploited in the mid-1800s, however production was limited to 100 t to several hundred tonnes. One such mine is located near Col des Mines, while others are located in the general area of Grand Alou. The lead-silver occurrences on the Property have not been examined by Urania in detail.

The following description of mineralization in the Grand Alou area is summarized from Cavalli and others (1998):

**Vacheret** (Vatzeret) is located approximately 100 m south of Col des Mines, at an altitude of 2,430 m asl. It consists of a narrow (1-4 cm, occasionally 40-60 cm) boudinaged vein dipping 20° to 30° south-easterly, enclosed more or less



concordantly in sericite-chlorite schists and metabasalts at the base of the Siviez-Mischabel Nappe. Mineralization consists mainly of galena, chalcopyrite, sphalerite, pyrite and silver-bearing tetrahedrite in a gangue of quartz  $\pm$  ankerite. Between 1851 and 1860, the mine produced 160 kg of silver from 100 t of ore grading 64% Pb and 2,500-2,600 g Ag/t.

**Siviez I** and **Siviez III** are on opposite sides of the ridge separating the valley of Nendaz from the valley of Iséables. The mineralization is contained in chloritic schists, quartzose schists and metabasalts in the frontal fold of the Siviez Mischabel Nappe.

**Siviez I** (Mine de Siviez) is located at 2,340-2,440 m asl on the slope of the valley of Nendaz. It is a sill-like layer with a discontinuous length of approximately 600 m, often concordant with bedding, and a maximum thickness of 50-60 cm. It trends north-easterly and dips subvertically. Mineralization consists of fine-grained galena with minor chalcopyrite, silver-bearing tetrahedrite and sphalerite, with barite  $\pm$  quartz  $\pm$  ankerite and calcite. Mining took place intermittently between 1846 and 1856 in three main areas east of Grand Alou and Plan du Fou. The production is unknown. Sampling from 345 t of stockpiled material extracted before 1851 returned 25% Pb and 450 g Ag/t.

**Siviez III** (Mine du Torrent à l'Eau) is located at the bottom of the cirque of Grand Alou at 2,040 m asl. Mineralization occurs in a fault-controlled seam, up to 6 cm wide, with galena, quartz and ankerite, chalcopyrite, chalcocite, pyrite, quartz and ankerite. In 1846-1854 and 1859-1860 two adits were driven at different elevations with total production of approximately 100 t of (ore grading) 25% Pb and 160 g/t Ag. Copper mineralization, exposed in pits and a short adit, was not exploited.

**Siviez II - Grande Creux** is located on the slope of the Iséables Valley, approximately 500 m southwest of Plan du Fou at 2,300-2,400 m asl. It consists of small lenticular seams with pyrite, chalcopyrite and quartz. Ruins of huts, pits, and a blocked excavation suggest exploitation in the second half of the 19<sup>th</sup> C. There is uranium-copper-gold mineralization in the vicinity.

## 10. EXPLORATION

### 10.1 AIRBORNE RADIOMETRIC MAGNETIC SURVEY

Following preliminary examinations of the Property by Urania personnel in 2007, but prior to the granting of the Exploration Permit, Urania commissioned Fugro Airborne Surveys ("**Fugro**") to fly a magnetic and radiometric survey. The survey, carried out in conjunction with two small survey areas at Les Marécottes between October 22 and 27, 2007, covered a about a 7 km length of the Nendaz – Siviez Series contact on the Property. Flight lines were oriented at 043°/223° in order to traverse regional stratigraphy and prominent geological structures. A line separation of 100 m was used. Tie lines were flown orthogonal to the traverse lines, with a line separation of 900 m (Brett, 2008). WGM estimates that the survey covered about 35% of the present Urania Property (Figure 11).

The Fugro survey employed a helicopter-borne Exploranium GR-820 gamma ray spectrometer and an external stinger mounted, cesium-vapour magnetometer. Ancillary equipment consisted of radar and laser altimeters to measure distance to ground. Spatial control was maintained using an electronic GPS navigation system. The ground speed averaged 97.2 km/hr with a mean terrain clearance of 60 m. A downward-facing crystal recorded the radiometric spectrum from 410 KeV to 3 MeV over 256 discrete energy windows, as well as a cosmic ray channel to detect photons with energy levels above 3.0 MeV. From these 256 channels, the standard total count, potassium, uranium and thorium channels were extracted. An upward-facing crystal was used to measure and correct for radon.

Magnetic readings (10/sec) were corrected for diurnal variation with data from a magnetometer base station. Corrected data were used to calculate vertical magnetic gradient.

The airborne radiometric survey was interpreted by Alan Spector and Associates Ltd ("**Spector**") in November, 2007. The Permo-Carboniferous meta-sedimentary rocks (sandstone, conglomerate and schist) were identified as exhibiting high K-channel radiation, from 60 to 120 counts per second ("cps"). Spector limited significant responses to anomalous radiation above 20 cps (4X signal-to-noise). Five zones of anomalous U-channel radioactivity were identified within a zone more than 7 km long. The highest anomalies are in a zone over the Grand Alou occurrences and in a zone averaging 40 to 50 cps corresponding to Le Fou. The three other zones are characterized mostly by U-channel activity of 25 to 35 cps.

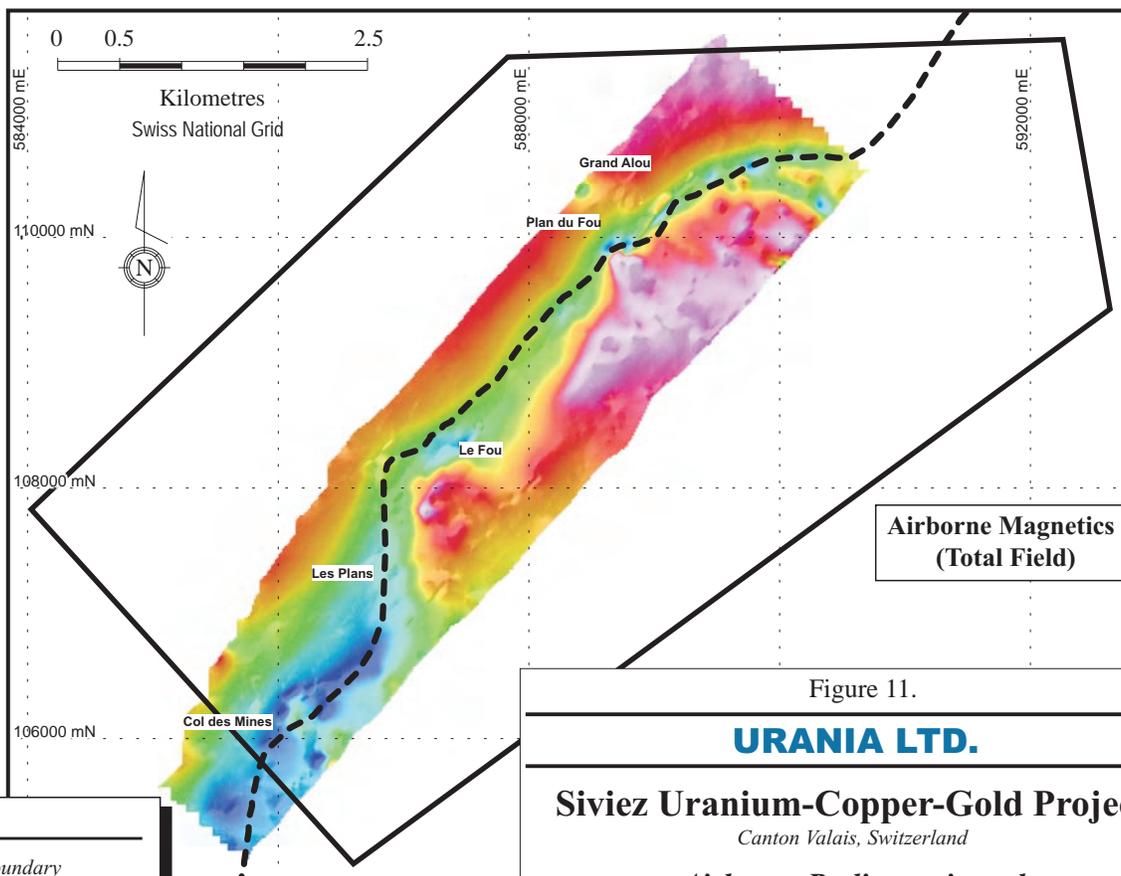
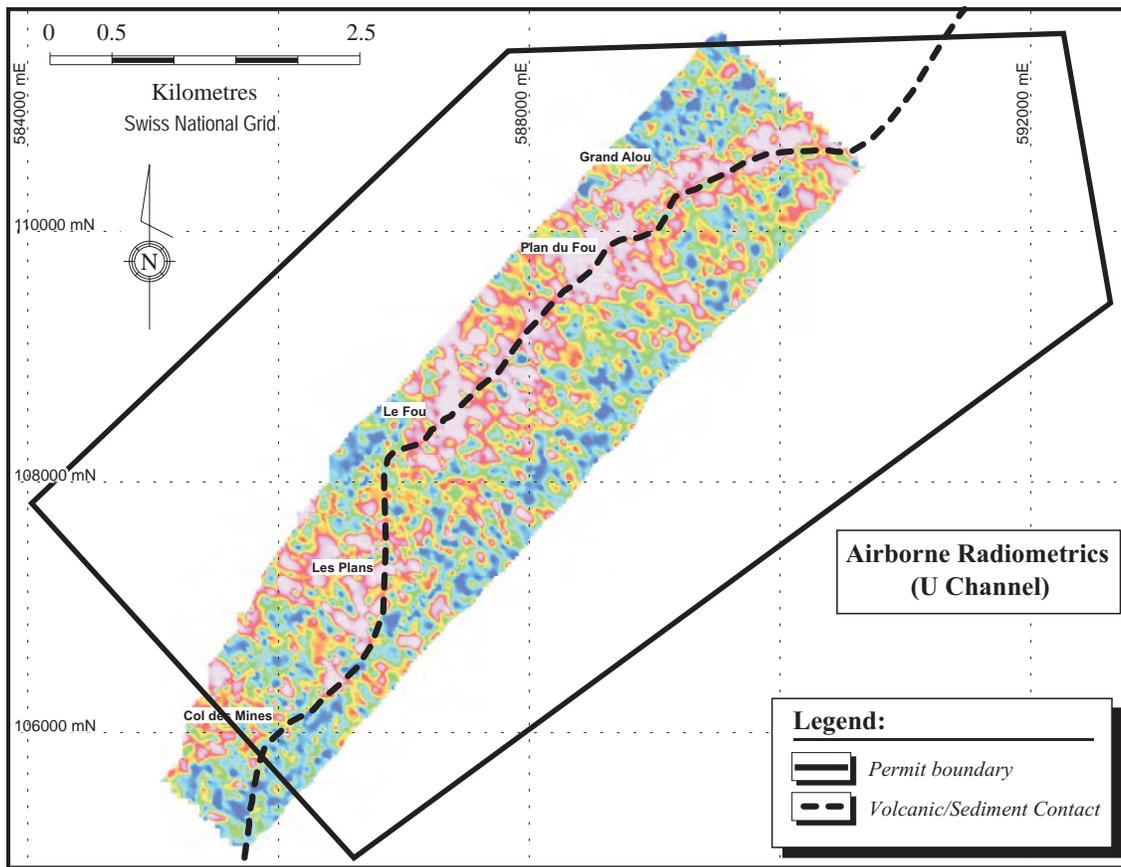


Figure 11.

**URANIA LTD.**

**Siviez Uranium-Copper-Gold Project**

*Canton Valais, Switzerland*

*Airborne Radiometric and  
Magnetic Surveys*

**Legend:**

- Permit boundary
- - - Volcanic/Sediment Contact

The anomalously radioactive zones are associated with a northeast-trending zone having a very low magnetic expression which roughly corresponds to the Siviez metavolcanic rocks. The zone is characterized by a magnetic intensity drop of about 30 nT. This magnetic low is bounded by two magnetic contacts. Most conspicuous is the association of high uranium counts in the two highest priority zones with one of the faults (Alan Spector and Associates Ltd, 2007).

## **10.2 2007 SURFACE EXPLORATION AND ROCK SAMPLING**

In 2007, prior to the granting of the Exploration Permit, Urania carried out a reconnaissance examination of the Grand Alou and Col des Mines areas. Eight grab samples were taken from trenches excavated by BEG in the early 1980s at Grand Alou and two samples were taken from a BEG trench at Col des Mines (Table 2). Elevated uranium, copper and gold were sufficiently encouraging to proceed with the airborne geophysics during October 2007. The sample locations are all above tree line and, because of exposure to severe alpine climate, there is a strong weathering and leaching of the surface, often to a depth of several centimetres. Efforts were made to obtain fresh samples with as little surface leaching effects as possible.

**TABLE 2.**  
**URANIA 2007 SAMPLING RESULTS**

Sample No.	Sample Type	U <sub>T</sub>	U <sub>AR</sub>	Ag	Cu	Pb	Au
		ppm					ppb
<b>Grand Alou</b>							
GA-139112	Grab, trench U-12	1,220	1,040	75.7	9,900	85	12
GA-139113	Grab, trench U-12	338	310	17.4	3,940	88	7
GA-139114	Grab, trench U-14	3,240	2,570	8.0	5,190	351	1,296
GA-139115	Grab, trench U-14	104	105	15.1	9,520	1,050	1,090
GA-139116	Grab, possibly trench U-13	102	130	8.1	4,600	320	10
GA-139117	Grab, 25m below trench U-2	4,780	4,090	8.1	9,640	1,090	220
GA-139118	Grab, trench U-2	494	472	4.5	4,200	200	177
GA-139119	Grab, trench U-3	8,560	7,410	6.6	5,970	1,860	148
<b>Col de Mines</b>							
CD-139120	high grade grab	26,500	22,400	6.1	12,700	1,450	-
CD-139121	Grab	7,310	6,360	14.8	4,000	352	182

U<sub>AR</sub> = aqua regia digestion; U<sub>T</sub> = "total" digestion

Except for the WGM verification sampling (Section 14.2), no sampling was done in 2008.

### **10.3 2009 SURFACE EXPLORATION AND ROCK SAMPLING**

In 2009, immediately after the granting of the Siviez Permit, Urania employed a team of four geologists and three helpers to conduct exploration on the Property. The work included integration of historic and Urania data into a GIS database, scintillometer (radiometric) prospecting, ground prospecting of airborne radiometric anomalies, geological and structural mapping, and sampling. More than 5 km of the contact between the Siviez and Nendaz Series were examined. A total of 313 rock samples, including 140 saw-cut channel samples were taken and sent for multi-element analysis (Aurovallis, 2009). Channel samples (including two chip-channels) varied in width from 22 to 122 cm, but were mostly between about 40 and 85 cm; they were taken primarily to sample as much material as possible below the effects of surface weathering and oxidation. According to Urania, the lengths of the channel samples closely approximate true width of the mineralized zones, as guided by scintillometer readings and the generally stratiform nature of the mineralization.

The results of this sampling are reviewed in Section 9 and highlights of sampling shown on Figures 7 to 10.

In order to determine possible structural controls of uranium mineralization and aid in identifying drill targets, Urania commissioned a study of the structural geology of the areas of Le Fou, Grand Alou, Plan du Fou and Col des Mines, reported by Barclay (2009).

### **10.4 2010 SURFACE EXPLORATION AND ROCK SAMPLING**

In 2010, a geological team continued prospecting, sampling, and surveying with scintillometers along the contact zone, and completing ground truthing of the remaining airborne radiometric anomalies that were not covered in 2009. Prospecting and ground scintillometer surveying over the airborne anomalies 700-1000 metres east-northeast of Grand Alou (see Figure 6), along the volcanic-sediment contact zone, identified additional uranium mineralization with three of ten grab samples containing >0.1%  $U_3O_8$  and up to 2.99% copper. A professional climber was engaged to accompany one of Urania's geologists to the prospective horizons near the top of Le Fou. This work resulted in the identification of new uranium-bearing zones and the accurate GPS locating of some historical zones of high radioactivity and uranium mineralization situated near the peak of Le Fou and also between Le Fou and Col des Mines.

Any further analytical work awaits the financing of Urania. As a result, no additional analyses or information is available for review.

## **11. DRILLING**

No drilling has been done by or on behalf of Urania.

## **12. SAMPLING METHOD AND APPROACH**

Urania's 2007 sampling visit to the Property was aimed at verifying the presence of historically-reported uranium mineralization. The secondary objective was to establish the characteristics of the mineralization to evaluate it in the context of a proposed model, and to obtain samples for mineralogical evaluation. The sampling was done by, or under the direct supervision of a QP. All samples were grabs of historical trenches and known showings. Samples weighed from 1.0 to 3.0 kg. The samples were placed in plastic bags and secured with single-use plastic ties.

No sampling was done by Urania in 2008, although WGM took seven verification grab samples (see Section 14).

In 2009, extensive sampling was carried out consisting of grab and a few chip samples, supplemented by the sampling of channels that were sawn into the bedrock. All channel samples taken by Urania approximated true width of the mineralized zones, as guided by scintillometer readings and the generally stratiform nature of the mineralization. The primary intent of the channel cuts was to sample bedrock as much as possible below the effects of surface weathering.

## **13. SAMPLE PREPARATION, ANALYSIS AND SECURITY**

### **13.1 2007 SAMPLING**

The 2007 Urania samples from the Property were boxed and hand-carried to Canada and then shipped by courier to SRC Geoanalytical Laboratories ("SRC"), Saskatchewan, directly by a QP. The facility is ISO/IEC 17025:2005 accredited by the Standards Council of Canada (scope of accreditation #537) and is also licensed by the Canadian Nuclear Safety Commission to safely receive, process and archive radioactive samples. Uranium analyses for weight percent U<sub>3</sub>O<sub>8</sub>, Inductively Coupled Plasma – Optical Emission Spectrometry ("ICP-OES") multi-element analysis, Inductively Coupled Plasma – Mass Spectrometry ("ICP MS") multi-element analysis and uranium by fluorimetry analysis (required for higher grade samples) are available.

The samples were dried, if necessary, crushed to 60% -2 mm and then riffle split to produce a 100 g sample which was then pulverized to 90% passing a 106 µm screen. A 125 mg subsample was digested in a mixture of hydrofluoric, perchloric and sulphuric acids. The resulting solution was dried, and then re-dissolved in a 5% nitric acid solution to result in a volume of 15 ml. This type of digestion is generally considered to be "total". The resulting solution was then tested with ICP-OES for 46 elements. To determine the gold content, a 30 g subsample was subjected to standard fire assay techniques to produce a prill which was then dissolved in aqua regia to produce 15 ml of solution. The gold content was then determined instrumentally by ICP-OES.

During 2007, in addition to the "total" digestion described above, SRC also completed an aqua regia digestion which, depending on the minerals present and the habit of occurrence, may be a partial digestion for uranium and other metals in the sample. WGM observed that the reported contents of uranium, copper, lead and silver for the "total" digestion were consistently higher than for the aqua regia digestion. In fact the average aqua regia digestion contents for uranium were 85% of those for "total" digestion (see Table 2); for silver, 87%; for copper, 95% and for lead, 93%. This suggests the presence of one or more uranium-bearing minerals that require a very robust acid attack to liberate the uranium (e.g. zircon).

### **13.2 2009 AND 2010 SAMPLING**

The 2009 Urania samples were collected, packed and shipped under the supervision of a QP. The samples were kept in the possession of Urania employees until shipment by Acciona

Forwarding to the ALS Chemex ("ALS") facility in Seville, Spain, for preparation. The resulting pulps were shipped by ALS to their lab in North Vancouver, Canada, for analysis. Because of high radioactivity, however, some samples were shipped in specialized containers directly by ALS Seville to ALS North Vancouver for preparation and analysis. Laboratory qualifications for ALS are given in Section 14.2.

The samples were submitted for 51-element (including uranium) ICP analysis. Samples with high-grade uranium (>10,000 ppm U) were reanalyzed for %U by X-Ray Fluorescence ("XRF"). The analytical methods used in the lab were the same as those used for WGM's 2008 samples; these techniques are fully described in Section 14.2. As outlined above, the aqua regia digestion seemingly does not liberate all of the uranium contained in resistate minerals. A number of samples containing above the upper detection limit for copper (>10,000 ppm), lead (>10,000 ppm) and silver (>100 ppm) were re-analyzed for %Cu, %Pb and g/t Ag, respectively, using a four-acid (total) digestion with an Inductively Coupled Plasma – Atomic Emission Spectrometry ("ICP-AES") or Atomic Absorption Spectrometry ("AAS") finish. Because of the small subsample size (0.5 g), the ICP gold results are considered semi-quantitative, and samples with elevated gold contents were reanalyzed using a 50 g charge subjected to standard fire assaying techniques to produce a prill which was then digested in 0.5 ml each of dilute nitric acid and concentrated hydrochloric acid, cooled, diluted to 10 ml with de mineralized water and analyzed by atomic absorption spectroscopy against matrix matched standards.

Five 2009 samples were submitted to Activation Laboratories Ltd. ("**Actlabs**") in Ancaster, Ontario, which is accredited to both ISO 17025 with CAN-P-1579 and NELAP for specific registered tests. Samples were analyzed for uranium, gold, ppm copper and % copper.

For gold analyses, a 30 g subsample was mixed with fluxes (borax, soda ash, silica, litharge) and with Ag added as a collector, and the mixture is fused in a crucible. The molten slag was poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button was cupelled, which absorbed the lead, leaving a doré prill (silver and gold). The prill was dissolved in aqua regia and the gold content was determined by atomic absorption.

For copper analyses, 0.5 g of sample was digested with aqua regia. The sample was cooled then diluted with deionized water and homogenized, and analyzed by ICP. In the Activation lab, a series of USGS-geochemical standards are used as controls. For high-grade copper, a 0.5 g sample was digested in *aqua regia* and diluted volumetrically to 250 ml with water.

CANMET reference materials, used for the appropriate elements, were digested the same way and used as standards. The samples were analyzed by ICP-OES.

For uranium analyses, an Actlabs RX1 preparation was done and uranium was analyzed by Delayed Neutron Counting ("DNC"), a rapid form of neutron activation analysis used for measuring fissile elements such as U235. Samples were placed in a neutron flux produced by a nuclear reactor. The U235 within the sample absorbs neutrons which fissions some of the U235 fission products including neutrons. After rapid removal from the reactor, the neutrons are thermalized and measured. This technique measures uranium from sub-ppm to percentage levels.

### **13.3 QUALITY ASSURANCE / QUALITY CONTROL**

Urania did not introduce standards, blanks or re-split (duplicate) samples into the sample stream in either the 2007 or 2009 programs, although the labs inserted their own internal standards, blanks and duplicate pulps. SRC reanalyzed about every 6<sup>th</sup> or 7<sup>th</sup> of the 2007 Urania samples, but no laboratory blank or standard results were reported.

For 2009 ICP analyses, ALS reported the results of four different laboratory standards, as well as blanks and duplicates. Standards contained between approximately 2 ppm and 220 ppm U; one standard used for XRF analyses contained about 1% U<sub>3</sub>O<sub>8</sub>. Standards for gold by fire assay – atomic absorption analysis contained between <1 and about 8 ppm Au. Similar standards were inserted by ALS into the 15 samples from 2010. WGM partially reviewed the ALS internal QA/QC results, and the data appear to be acceptable for the elements of interest for this project (uranium, copper, lead and silver). However, external QA/QC protocols should begin prior to drilling. Importantly, Urania designed an adequate QC program for 2010 sampling and beyond integrating blanks and duplicates into the sample stream. Results from the four duplicate samples so far indicate excellent sample homogeneity. Although transport issues have so far impeded the delivery of high-grade uranium standards, Urania will introduce them prior to the onset of any drilling program.

WGM recommends that duplicate analysis of up to 10% of a combination of pulps and rejects from drill core samples be undertaken at a second accredited laboratory as part of Urania's QA/QC protocols. If the analysis of duplicate rejects fails to produce results that are comparable within a reasonable range, then increased attention will be needed during the initial crushing stage to ensure better homogenization of the sample prior to pulverization. While the re-assaying of pulps alone is a good check of laboratory precision, WGM believes that only the reanalysis of rejects can detect homogenization issues.

## 14. DATA VERIFICATION

### **14.1 WGM SAMPLING AND ANALYTICAL PROCEDURES**

WGM's site visit was made prior to approval of the Permit for the Property.

WGM collected a total of seven samples from the Property. Sample locations were established using a hand-held GPS recording both Swiss coordinates CH-1903 and latitude/longitude. In the field, samples were placed in tagged and numbered plastic bags by WGM and the bags sealed with plastic locking ties; the samples were kept in WGM's possession until personally handed by WGM to an international courier (DHL) in Haute Nendaz for shipping to ALS in Spain.

ALS operates 49 accredited mineral laboratories, including preparation-only facilities, in 24 countries. All of the labs are certified to ISO 9001:2000 standards. The North Vancouver facility is accredited laboratory No. 579, conforming to the requirements of CAN-P-1579, CAN-P-4E (ISO/IEC 17025:2005).

Three of WGM's 2008 verification samples were prepared at ALS's facility in Sevilla, Spain, and the resulting pulps shipped to ALS in North Vancouver, Canada, for analysis. Five of the samples, however, were deemed to be excessively radioactive and were re-packaged and shipped directly to ALS's lab in North Vancouver, for preparation and analysis. Nevertheless, procedures at both labs were the same. ALS routinely uses barren wash material between sample preparation batches and, where necessary, between highly mineralized samples. This cleaning material is tested before use to ensure no contaminants are present. ALS introduces quality control samples (reference materials, duplicates and blanks) with all sample batches. In a rack of 40 samples for ICP analysis, two standards, one duplicate and one blank sample are included. For the routine assaying of a rack of 84 samples, two standards, one duplicate and one blank are inserted. Results from the control samples are evaluated to ensure they meet set standards determined by the precision and accuracy requirements of the method. Should any reference material or duplicate result fall outside the established control limits, an error report is automatically generated so that an investigation can be initiated.

After drying, if necessary, each sample was crushed to at least 70% passing a 2 mm mesh, and then riffle split to produce a reject portion and a smaller (250 g) portion which was pulverized to 85% passing a 75 micron mesh. A 0.5 g subsample was digested in aqua regia (1 part nitric

acid to 3 parts hydrochloric acid) in a graphite heating block; when cooled, the solution was diluted with de-ionized water, and the resulting solution subjected to both ICP-MS and ICP-AES, respectively) for a 50-element package including uranium and gold. Aqua regia digestion was done and it is considered an effective solvent for most base metal sulphates, sulphides, oxides and carbonates but only provides a partial digestion for most rock forming elements and minerals of a refractory nature. In the majority of instances, data reported from aqua regia digestion should be considered as representing only the easily leachable portion. The digestion of resistate minerals, such as rare earth- or uranium-bearing silicates, is variable and cannot be completely assured.

Higher-grade uranium samples were re-analyzed by XRF. A calcined or ignited sample (0.9 g) is added to 9.0 g of lithium borate flux (50%  $\text{Li}_2\text{B}_4\text{O}_7$  – 50%  $\text{LiBO}_2$ ), mixed well and fused in an auto fluxer between 1,050° and 1,100°C. A flat molten glass disc is prepared from the resulting melt. This disc is then analysed by XRF spectrometry. The upper and lower detection limits for uranium are 0.1 and 15%, respectively.

## **14.2 WGM SAMPLE RESULTS**

Of the seven verification samples taken by WGM, four were from the Grand Alou area, and two were from the Col des Mines area in the south.

**Grand Alou:** Sample 3455 is a 1.2 m composite grab/chip taken sub-parallel to schistosity and possibly across lithology. The rock is sericitic schist with malachite, azurite and Fe- and Mn-oxide staining. This location is the site of Urania’s 2007 samples 114 and 115 (Table 3).

**TABLE 3.**  
**WGM SAMPLING RESULTS – SIVIEZ PROPERTY**

Sample	Swiss Grid Coordinates		U (ppm)	$\text{U}_3\text{O}_8$ (%)	Cu	Pb	Zn	Ag	As	Au
	Easting	Northing								
<b>Grand Alou</b>										
3455	588966	110272	382	0.05*	5,630	655	498	6.67	797	0.359
3456	588966	110272	236	0.03*	6,390	1,230	1,270	11.35	1,865	0.373
3457	588966	110272	4,230	0.57	4,060	487	142	14.35	1,700	1.67
3458	588793	110351	394	0.05*	1,335	570	94	1.46	271	0.326
<b>Col des Mines</b>										
3461	586040	106352	>10,000	4.92	9,140	1,620	78	2.63	497	<0.2
3462	586040	106352	1,380	0.17	5,550	18.6	92	0.33	42.5	<0.2
3463	586394	106412	>10,000	8.07	9,300	2,180	75	38	195.5	<0.2

\* values calculated -  $\% \text{U}_3\text{O}_8 = \text{U ppm} \times 1.179/10,000$ ; other values are XRF analyses

Sample 3456 is a composite grab of quartz-iron carbonate vein material with malachite as well as Mn-oxide staining, minor chalcopyrite and tetrahedrite. Sample 3457 is a grab of a highly radioactive specimen of schist (27 times background). Both are from the same location as sample 3455.

Sample 3458, from a historical prospect where Urania collected sample 118 in 2007, is a chip sample across 1.8 m and across schistosity in a pod of mineralization of unknown extent. It is similar to sample 3455: sericitic schist with quartz stringers and minor malachite staining.

**Col des Mines:** Sample 3461 is a composite grab from a 15-cm wide, uranophane- and malachite-stained, micaceous zone with quartz - Fe-carbonate - pinkish albite seams with 1% pyrite. There are narrow pitchblende-rich zones in the quartz. Urania's 2007 samples 139120 and 139121 (see Table 2) are from this locality. Sample 3462 is a grab of the same zone about 5 m southeast of 3461. The zone is about 20 cm wide, finely laminated (mm scale) and schistose, with sericite and chlorite laminae. It contains about 2% fine-grained, disseminated pyrite and malachite staining.

Sample 3463 is a grab sample of rubble frozen in other muck or debris at the adit portal, and situated about 10 m south of the GPS reading. It is most likely that the sample fell from a nearby location above, rather than originating from the adit. The sample is of laminated, siliceous, highly sericitic schist with abundant semi-continuous seams of pitchblende (several %), about 2% medium-grained pyrite, possible minor chalcopyrite and slight malachite staining.

The WGM sampling has confirmed not only the presence of highly significant concentrations of uranium on the Property, but also consistent copper (about 0.1 to 0.9%) and locally significant amounts of silver and gold where there is sulphide mineralization.

## **15. ADJACENT PROPERTIES**

WGM is unaware of any Exploration Permits adjacent to or neighbouring the Property.

## **16. MINERAL PROCESSING AND METALLURGICAL TESTING**

No mineral processing or metallurgical studies have been carried out on the Property, by or on behalf of, Urania. Except for the acid-dissolution tests done historically, and outlined in Section 6, WGM is unaware of any metallurgical studies.

## **17. MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

There are no current NI 43-101 compliant mineral resource estimates pertaining to the Property.

## **18. OTHER RELEVANT DATA**

WGM is unaware of any data in the possession of Urania other than that referenced in this report. Several historic reports mention analyses that were unavailable at the time of their preparation, and it is possible that the information could be archived at CREALP in Sion, or elsewhere. However, WGM was not able to acquire this information, assuming that it exists.

## 19. INTERPRETATION AND CONCLUSIONS

The present knowledge base of uranium ± copper ± silver ± gold mineralization on the Property relies on surface exposures located primarily along ridge crests or in very steep terrain. Subsurface information is limited to the historical underground exploration on a single "vein" at Col des Mines, a solitary historic drillhole which failed for technical reasons, mineralization reported in a hydro-electric conduit at least 800 m below surface in 1957, and a zone of radioactivity reported from a depth of 240 m in a second hydro-electric tunnel in 1993.

The numerous uranium occurrences on the Property comprise a zone of mineralization straddling the contact between mafic metavolcanic rocks of the Siviez Series and the overlying metasedimentary rocks of the Nendaz Series over a total distance of about 6 km. Uranium-copper-gold mineralization outcrops at Grand Alou, Le Fou, Plan du Fou, Les Plans, and Col de Mines as well as points in between. Mineralized and/or radioactive boulders also occur down-slope of the Nendaz-Siviez contact. Areas of talus between the main occurrences may be obscuring potentially mineralized bedrock, but this is uncertain. The uranium mineralization is generally enriched in copper and, locally, gold, silver and lead. Copper mineralization is the most widespread metal of potential economic interest. The distribution of gold across the property is not fully understood as yet.

The mineralized zones are of sufficient length, width and distribution to warrant further exploration. The mineralization within zones is not pervasive, but is in the form of discrete highly mineralized layers or veins within rocks which are mostly unmineralized. Additional surface prospecting and radon-in-soils may be useful to further prioritize areas for drilling, but the areas of occurrences all need to be tested by diamond drilling. Terrain will present challenges for drilling and helicopter-support will be required. Barclay (2009) noted that, if mineralization was remobilized from a primary source during F2 folding, the mineralization could be concentrated within or subjacent to F2 fold hinges, and the long axes of such zones would be parallel to F2 fold axes and L2 lineations which plunge gently to the northeast.

## 20. RECOMMENDATIONS

### **20.1 PHASE 1 EXPLORATION**

Urania has proposed the following 2010 – 2011 Phase 1 exploration program:

A 3-D model will be prepared, integrating geological mapping, mineral occurrences, topography and structural data in order to select and/or refine the locations of sites for diamond core drilling. Layout of drillhole locations and lengths will rely heavily on this 3-D model.

The results of the baseline water study completed in September, 2009, once received, will be analysed and interpreted and results communicated to the appropriate authorities.

Additional prospecting, mapping and sampling will be done, as warranted, northeast of Grand Alou, into the volcanic rocks above Plan du Fou, at Le Fou, and in the area between Le Fou and Col des Mines where new zones of radioactivity and mineralization were identified. Other ground work would include a limited pilot survey of radon in soil (Alpha Track or activated charcoal system) to test its effectiveness over scree slopes where the Nandez – Siviez contact area is obscured and where radioactive boulders are found down-slope. If the pilot study proves effective, grid survey areas will be established and the survey expanded over scree-covered areas.

A Phase 1 diamond drill program proposed by Urania will be the first drill testing of the uranium-copper-gold mineralization along the contact zone of the metavolcanic and metasedimentary rocks at any significant depth. Phase 1 diamond drilling will not test all of the targets along the 6 km-long favourable contact zone and, as such, Phase 2 is not contingent on Phase 1. However, these initial holes and additional surface exploration work in 2011 will provide valuable geological information on the structure, stratigraphy and mineralization to make decisions on the exact locations of the additional drilling in Phase 2. The subsurface test will also provide information on the degree of surface leaching.

For Phase 1, the proposed drilling is outlined below, subject to change as the drill program progresses.

At Grand Alou, two diamond drill set-ups are planned with three holes totalling 450 m. At Plan du Fou, one 350 m hole will test the metavolcanics (grab samples with up to 3.63%  $U_3O_8$

and 0.25% Cu), the contact between the metavolcanics and conglomerates (grab samples with up to 0.38%  $U_3O_8$  and 0.57% Cu and channel samples with up to 0.16%  $U_3O_8$  and 0.49% Cu over 0.4 m). Two additional holes at Plan du Fou totalling 200 m, located roughly 250 m along the contact from the first Plan du Fou drillhole, will test the contact zone and overlying conglomerates where up to 7.71%  $U_3O_8$  with 0.34% Cu were encountered in sampling. All of the above drill set-ups are accessible by a four-wheel drive road, but helicopter assistance will be required.

Drilling at Col des Mines is planned to consist of an initial three holes from two set-ups, totalling 725 m. Some targets at Col des Mines are best drilled from steep terrain and logistics can be better assessed once the first three drillholes are underway. It is expected that an additional two drillholes from one set-up will be done during Phase 1, for an additional 300 m. Although the area is accessible by four-wheel drive vehicle, helicopter assistance will be required.

Phase 1 may also include an initial test of the large anomalous area at Le Fou, depending on logistics and weather. This would consist of either one approximately 350 m drill hole from the top of Le Fou, designed to test through the thick sequence of volcanics that host numerous uranium- and copper-mineralized horizons, or two holes totalling approximately 350 m to test some of the lower mineralization at Le Fou, closer to the volcanic-sediment contact. There is no road access to Le Fou and the drilling will require helicopter support.

A proposed **Phase 1** budget of **\$2,200,000** is presented in Table 4.

**TABLE 4.**  
**SIVIEZ PERMIT – PROPOSED PHASE 1 EXPLORATION BUDGET**

Description	Cost (C\$)
Water survey analysis	C\$5,000
3-D Modelling/ drafting	25,000
Radon-in-soil Pilot Study	4,500
Radon-in-soil Survey	10,900
Diamond Drilling 2,500 m	825,000
Drill moves (helicopter support) and platforms	570,000
Drilling Logistics (Mob, water, casing, cement, etc)	133,000
Down-hole surveying and radiometric logging	61,500
Helicopter support and core	85,000
Analyses, shipping and storage	48,000
Project Logistics (transportation, accommodation, meals, etc.)	80,000
Geologists, consultants and drill supervision	130,000
Data Analysis and plotting	22,000
<b>Subtotal</b>	<b>C\$1,999,900</b>
Contingency (approximately 10%)	200,100
<b>Total</b>	<b>C\$2,200,000</b>

## **20.2 PHASE 2 EXPLORATION**

Urania has proposed a Phase 2 program of 3,000 m of diamond drilling that will continue to test the priority targets along the 6 km strike length of the prospective zone. Additional geological work in Phase 1 will further define specific drillhole locations at Le Fou, to test the 700 x 350 m area of anomalous radioactivity. At Le Fou, the field season is shorter and the terrain more challenging and Urania will benefit from the experience from the Phase 1 drilling.

The proposed **Phase 2** budget, as outlined in Table 5, is **\$2,400,000**.

**TABLE 5.**  
**SIVIEZ PERMIT – PHASE 2 EXPLORATION PROGRAM**

Description	Cost (C\$)
Diamond Drilling - 3,000 m	C\$990,000
Drilling Logistics (mobilization, water, casing, cement, etc)	217,000
Drill moves (helicopter support) and platforms	617,200
Down-hole surveying and radiometric logging	89,600
Analyses, shipping and storage	45,000
Project Logistics (transportation, accommodation, meals, etc)	48,000
Geologists, consultants and drill supervision	135,000
Data Analysis and Plotting	40,000
<b>Subtotal</b>	<b>C\$2,181,800</b>
Contingency (approximately 10%)	218,200
<b>Total</b>	<b>C\$2,400,000</b>

In WGM’s opinion, the proposed work plans and budgets for the field and drilling programs are reasonable and appropriate. The estimated drilling costs of \$330/m are based on a quote and discussions with Swiss and French contractors, and are quite high compared with many other parts of the world. Terrain and logistics require most drill stations to be mobilized and serviced by helicopter.

## 21. SIGNATURE PAGE

This report titled "*Technical Report on the Siviez Uranium-Copper-Gold Property, Canton Valais, Switzerland for Urania Resources Ltd.*" dated January 24, 2011 was prepared and signed by the following author:

Dated effective as of January 24, 2011.



---

Robert M. Kuehnbaum, P.Geol.  
Senior Associate Geologist

## CERTIFICATE

- (a) I, Robert M. Kuehnbaum, P.Geo., residing at 3101 O'Hagan Drive, Mississauga, Ontario, L5C 2C4, Canada, am a Consulting Geologist and a Senior Associate Geologist of Watts, Griffis and McOuat Limited, a firm of consulting geologists and engineers, which has been authorized to practice professional engineering by Professional Engineers Ontario since 1969, and professional geoscience by the Association of Professional Geoscientists of Ontario.
- (b) I am the author of the report entitled "Technical Report on the Siviez Uranium-Copper-Gold Property, Canton Valais, Switzerland" prepared for Urania Resources Ltd. ("Urania"), dated January 24, 2011.
- (c) I graduated from the University of Toronto with a B.Sc. degree in Geology (1971), and a M.Sc. degree in Geology (1973). Since 1974, I have practiced my profession as a geologist in the field of mineral exploration for a total of more than 34 years, in Canada and internationally.

I have been involved in the search for a wide variety of commodities, including base metals (tungsten, copper, nickel) and precious metals, uranium, diamonds and industrial minerals. I carried out semi-regional and property-based exploration for uranium, amongst other commodities, for Union Carbide Exploration Corporation between 1976 and 1979, and for Canadian Occidental Petroleum Ltd. in 1980-1981. I am the co-author of a NI 43-101 report entitled "Technical Report on the Agnew Lake Uranium Property, Hyman and Porter Townships, Ontario" for Nyah Resources Inc., dated October 26, 2007.

I am: a registered practicing member of the Association of Professional Geoscientists of Ontario (registration no. 0217); a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (licence no. 31101); and, a registered member of the Association of Professional Engineers and Geoscientists of Saskatchewan (registration no. 10474), Canada. I am also a member of the Society of Economic Geologists and the Prospectors and Developers Association of Canada.

I have read the definition of "Qualified Person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.

- (d) I visited the Siviez Property on October 24 and 25, 2008. The information and data used in this report are largely from previous investigators, and were obtained from the references cited, or were found in scientific publications; other data were collected during the property visits.

- (e) I am responsible for authorship of all sections of this Technical Report.
- (f) I am independent of Urania, as described in Section 1.4 of National Instrument 43-101.
- (g) I have no prior involvement with the Property that is the subject of this Technical Report;
- (h) I have read National Instrument 43-101 and Form 43-101F1 and have prepared this Technical Report in compliance with National Instrument 43-101 and Form 43-101F1;
- (i) As of the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.



Robert M. Kuehnbaum, M.Sc., P.Ge.  
January 24, 2011

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**APPENDICES**

**APPENDIX 1:  
ANALYTICAL CERTIFICATES  
WGM SAMPLES**

*SV08154665*

*SV08157215*

*SV09000954*

*SV09000955*



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Page: 1  
 Finalized Date: 14-JAN-2009  
 Account: WGMURA

**CERTIFICATE SV09000954**

Project: URANIA

P.O. No.:

This report is for 8 Ore samples submitted to our lab in Seville, Spain on 8-JAN-2009.

The following have access to data associated with this certificate:

PEDRO BARQUERO

ROBERT KUEHNBAUM

ALEJANDRO MUNILLA

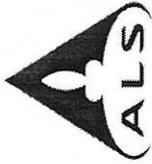
SAMPLE PREPARATION		
ALS CODE	DESCRIPTION	
WEI-21	Received Sample Weight	
FND-02	Find Sample for Addn Analysis	
ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
U-XRF10	Fusion XRF - U Ore Grade	XRF
OA-GRA06	LOI for ME-XRF06	WST-SIM

To: WATTS GRIFFIS & MCOUT LIMITED URANIA (WGM-URANIA)  
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**Signature:**

Colin Ramshaw, Vancouver Laboratory Manager



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**CERTIFICATE OF ANALYSIS    SV09000954**

Sample Description	Method Analyte Units LOR	WEI-21		U-XRF10		U-XRF10	
		Recvd Wt. kg	U %	U %	U308 %		
3457		0.56	0.48	0.57			
3460		1.12	0.78	0.92			
3461		1.19	4.17	4.92			
3463		0.73	6.84	8.07			
3464		0.64	1.77	2.09			
3466		0.76	0.66	0.78			
3467		0.61	0.61	0.72			
3469		0.83	2.43	2.87			



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Page: 1  
 Finalized Date: 14-JAN-2009  
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**CERTIFICATE SV09000955**

Project: URANIA

P.O. No.:

This report is for 1 Ore sample submitted to our lab in Seville, Spain on 8-JAN-2009.

The following have access to data associated with this certificate:

PEDRO BARQUERO

ROBERT KUEHNBAUM

ALEJANDRO MUNILLA

SAMPLE PREPARATION		
ALS CODE	DESCRIPTION	
WEI-21	Received Sample Weight	
FND-02	Find Sample for Addn Analysis	
ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
U-XRF10	Fusion XRF - U Ore Grade	XRF
OA-GRA06	LOI for ME-XRF06	WST-SIM

To: WATTS GRIFFIS & MCOUT LIMITED URANIA (WGM-URANIA)  
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**Signature:**

Colin Ramshaw, Vancouver Laboratory Manager



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 Project: URANIA

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**CERTIFICATE OF ANALYSIS SV09000955**

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	U-XRF10 U %	U-XRF10 U308 %
3462		0.02	0.01	0.01
		0.91	0.14	0.17



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**CERTIFICATE SV08157215**

Project: URANIA  
 P.O. No.: SV08-0082  
 This report is for 8 Ore samples submitted to our lab in Seville, Spain on 28-OCT-2008.  
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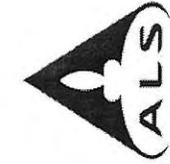
SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
WSH-21	"Wash" crushers
WSH-22	"Wash" pulverizers
PUL-31	Pulverize split to 85% <75 um
SPL-21	Split sample - riffle splitter
CRU-31	Fine crushing - 70% <2mm
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION
ME-MS41U	50 element aqua regia ICP-MS (U Pkg)

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**Signature:**   
 Colin Ramshaw, Vancouver Laboratory Manager



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 Plus Appendix Pages  
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**CERTIFICATE OF ANALYSIS SV08157215**

Sample Description	Method Analyte Units LOR	ME-MS41U														
		WEI-21 Recvd Wt. kg	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
3457		0.56	14.35	0.29	1700	1.67	<10	50	0.61	36.2	0.12	2.38	17.3	76.6	15	1.94
3460		1.12	2.17	0.48	23.5	<0.2	<10	10	1.5	51.1	0.92	1.25	130.5	3.3	21	2.28
3461		1.19	2.63	1.2	497	<0.2	<10	30	0.45	10.55	0.1	0.22	12.5	16.3	25	1.76
3463		0.73	38	0.61	195.5	<0.2	<10	20	0.77	10.95	0.18	0.37	95.3	35.9	18	0.27
3464		0.64	3.67	2.12	252	<0.2	<10	80	3.73	418	0.48	1.81	71.5	23.4	37	6.05
3466		0.76	3.95	0.97	632	0.248	<10	90	2.92	161.5	0.19	1.31	49.7	10	40	2.91
3467		0.61	3.52	0.23	138	<0.2	<10	10	0.82	339	0.15	0.58	39.6	4.8	27	3.1
3469		0.83	>100	1.17	438	<0.2	<10	10	1.57	4900	4.16	2.11	209	19.4	31	4.28



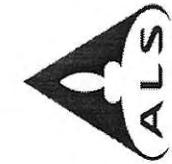
**CERTIFICATE OF ANALYSIS SV08157215**

Sample Description	Method Analyte Units LOR	ME-MS41U Cu ppm	ME-MS41U Fe %	ME-MS41U Ga ppm	ME-MS41U Ge ppm	ME-MS41U Hf ppm	ME-MS41U Hg ppm	ME-MS41U In ppm	ME-MS41U K %	ME-MS41U La ppm	ME-MS41U Li ppm	ME-MS41U Mg %	ME-MS41U Mn ppm	ME-MS41U Mo ppm	ME-MS41U Na %	ME-MS41U Nb ppm
3457		4060	1.41	0.77	0.07	0.41	1.16	0.095	0.12	9.6	10.8	0.03	51	21.9	0.01	0.7
3460		46.5	0.8	3.32	0.33	0.47	0.03	0.203	0.15	34.4	21.6	0.2	476	3.61	0.02	2.12
3461		9140	3.35	4.09	0.15	1.09	1.74	0.099	0.06	3.7	79.5	0.62	624	56.8	0.01	0.93
3463		9300	2.94	3.12	0.27	0.53	4.09	0.118	0.07	31.2	11.2	0.21	195	17.5	0.01	2.31
3464		304	4.75	12.4	0.35	0.13	0.06	0.262	0.06	34.4	83.6	1.67	1065	1.32	0.01	0.31
3466		275	3.87	6.62	0.34	0.12	0.02	0.071	0.07	12.8	43.7	0.53	212	7.25	0.01	0.92
3467		675	0.97	1.43	0.27	0.1	0.04	0.07	0.07	6.1	7.3	0.07	80	2.68	0.01	0.88
3469		164.5	1.81	6.74	0.44	0.39	0.06	0.145	0.07	59.8	56.3	0.69	731	4.85	<0.01	1.47



**CERTIFICATE OF ANALYSIS SV08157215**

Sample Description	Method Analyte Units LOR	ME-MS41U																
		Ni ppm	P ppm	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl %	Tm %
3457		8.7	430	481	6.9	0.019	0.12	330	0.9	2.8	0.2	0.01	0.16	25.2	0.005			
3460		1.6	1320	365	18.5	0.001	0.03	2.24	1.3	8.3	3.4	0.03	0.28	14.7	0.093			
3461		15.1	110	1620	4.1	0.015	0.39	67.4	6	4.7	0.2	0.05	0.48	4.5	0.013			
3463		23.6	360	2180	3.6	0.005	0.68	229	4.9	3.3	1	0.04	0.17	6.6	0.016			
3464		16.9	1280	560	11.4	0.001	0.02	3.35	8.8	17.2	14.5	0.01	5.06	2.9	0.091			
3466		16.7	610	541	9.1	0.002	0.39	2.64	4	35.4	4.3	0.02	2.16	3.7	0.078			
3467		8.1	540	166.5	12.6	0.003	0.41	5.6	0.9	48.6	3.3	0.02	1.53	3.2	0.019			
3469		34.7	480	5400	14.6	<0.001	0.04	24.9	6.1	44	4.2	0.09	22.8	14.9	0.074			



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**CERTIFICATE OF ANALYSIS SV08157215**

Sample Description	Method Analyte Units LOR	ME-MS41U							
		Ti ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm	
3457		0.06	4230	5	5.05	13.7	142	50.1	
3460		0.22	7050	7	11.25	72.1	778	18.9	
3461		0.03	>10000	18	7.34	138.5	78	65.5	
3463		0.07	>10000	12	26.6	92.9	75	87.3	
3464		0.48	>10000	117	27.4	76.8	627	2.2	
3466		0.49	6270	58	9.84	68.2	214	0.9	
3467		0.39	5680	6	17.5	91.1	128	0.5	
3469		0.75	>10000	49	91	272	152	6.4	



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**CERTIFICATE OF ANALYSIS SV08157215**

	CERTIFICATE COMMENTS
<p><b>Method</b></p> <p>ME-MS41U</p>	<p>Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).</p>



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Project: URANIA  
 P.O. No.: SV08-0081  
 This report is for 12 Ore samples submitted to our lab in Seville, Spain on 28-OCT-2008.  
 The following have access to data associated with this certificate:  
 PEDRO BARQUERO | ROBERT KUEHNBAUM | ALEJANDRO MUNILLA

SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
WSH-21	"Wash" crushers
WSH-22	"Wash" pulverizers
PUL-31	Pulverize split to 85% <75 um
SPL-21	Split sample - riffle splitter
CRU-31	Fine crushing - 70% <2mm
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES	
ALS CODE	DESCRIPTION
ME-MS41	51 anal. aqua regia ICPMS
ME-MS41U	50 element aqua regia ICP-MS (U Pkg)

To: WATTS GRIFFIS & MCOUT LIMITED URANIA (WGM-URANIA)  
 ATTN: ROBERT KUEHNBAUM  
 400-8 KING ST. EAST ON M5C1B5  
 TORONTO  
 CANADA

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

**Signature:**

Colin Ramshaw, Vancouver Laboratory Manager



**CERTIFICATE OF ANALYSIS SV08154665**

Sample Description	Method Analyte Units LOR	ME-MS41U													
		WEI21 Recvd Wt. kg	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
3455		0.97	6.67	0.28	797	0.359	<10	10	0.24	8.8	0.29	18.3	28.5	4	0.66
3456		0.56	11.35	0.08	1865	0.373	<10	10	0.12	6.56	1.64	29.1	20.4	7	0.23
3458		0.92	1.46	0.84	271	0.326	<10	70	0.43	1.84	1.49	42.1	10.9	9	1.13
3459		1.19	0.17	0.91	14.1	<0.2	<10	10	1.29	1.62	0.33	21.8	2.7	5	1.99
3462		0.91	0.33	1.68	42.5	<0.2	<10	40	0.28	1.31	0.03	12.25	17.1	9	1.54
3465		0.95	0.62	1.63	241	<0.2	<10	40	0.89	15.7	0.25	26.2	14.2	33	2.41
3468		0.80	0.27	2.7	23.3	<0.2	<10	20	1.19	3.34	0.49	17.4	11.3	42	2.78
3470		0.33													
3471		1.18													
3472		0.28													
3473		1.84													
3474		0.94													



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 Project: URANIA

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**CERTIFICATE OF ANALYSIS SV08154665**

Sample Description	Method Analyte Units LOR	ME-MS41U Cu ppm	ME-MS41U Fe %	ME-MS41U Ga ppm	ME-MS41U Ge ppm	ME-MS41U Hf ppm	ME-MS41U Hg ppm	ME-MS41U In ppm	ME-MS41U K %	ME-MS41U La ppm	ME-MS41U Li ppm	ME-MS41U Mg %	ME-MS41U Mn ppm	ME-MS41U Mo ppm	ME-MS41U Na %	ME-MS41U Nb ppm
3455		5630	0.76	0.77	<0.05	0.08	0.83	0.073	0.13	10.9	3.9	0.11	638	8.85	0.02	0.08
3456		6390	1.34	0.44	<0.05	0.02	1.63	0.104	0.04	16.5	0.8	0.38	1700	3.09	<0.01	0.07
3458		1335	1.58	3.18	<0.05	0.06	0.9	0.042	0.26	20.3	21.8	0.83	1015	0.84	0.07	0.09
3459		45.4	1.41	5.3	<0.05	0.03	0.03	0.014	0.23	9.7	45.5	0.29	271	0.54	0.04	0.52
3462		5550	3.41	4.91	<0.05	0.07	0.1	0.045	0.2	6.2	90.1	0.78	145	1.92	0.03	0.06
3465		68.2	3.38	7.19	<0.05	0.07	0.01	0.044	0.15	10.3	75.2	0.84	376	1.66	0.01	1.38
3468		58.5	5.04	14.3	0.09	0.06	0.01	0.022	0.17	6.8	125	1.65	738	0.33	0.01	0.49
3470																
3471																
3472																
3473																
3474																

**CERTIFICATE OF ANALYSIS    SV08154665**

Sample Description	Method Analyte Units LOR	ME-MS41U																		
		Ni ppm	P ppm	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl %	U ppm	V ppm	W ppm
3455		7	230	655	6.4	0.016	160	0.8	0.7	0.2	7	<0.01	0.12	6.1	<0.005					
3456		3.8	70	1230	1.9	0.016	498	1.7	1.3	0.2	20	<0.01	0.3	1.8	<0.005					
3458		14.5	400	570	14.5	<0.001	11	2.9	0.7	0.4	29.4	<0.01	0.03	11.7	<0.005					
3459		2.6	1330	24.3	27.3	<0.001	2.13	1	1	1.5	5.1	0.01	0.01	11.3	0.031					
3462		19.4	220	18.6	9.8	0.164	0.99	1.9	0.6	0.2	7	<0.01	0.04	9.8	0.005					
3465		41.2	820	88.9	16.7	<0.001	2.27	4.3	1.2	1.7	6	0.02	0.43	10.1	0.144					
3468		20.5	1260	85.6	23.6	<0.001	0.75	4.5	0.5	5.7	4.4	0.01	0.05	11.2	0.191					
3470																				
3471																				
3472																				
3473																				
3474																				



**CERTIFICATE OF ANALYSIS SV08154665**

Sample Description	Method Analyte Units LOR	ME-MS41 Ca %	ME-MS41 Cd ppm	ME-MS41 Ce ppm	ME-MS41 Co ppm	ME-MS41 Cr ppm	ME-MS41 Cs ppm	ME-MS41 Cu ppm	ME-MS41 Fe %	ME-MS41 Ga ppm	ME-MS41 Ge ppm	ME-MS41 Hf ppm	ME-MS41 Hg ppm	ME-MS41 In ppm	ME-MS41 K %	ME-MS41 La ppm
3455																
3456																
3458																
3459																
3462																
3465																
3468																
3470		<0.01	0.22	1.26	7.6	8	0.17	343	3.2	0.35	<0.05	<0.02	0.4	0.035	0.06	0.6
3471		0.01	0.08	22.4	1.2	6	0.26	42	1.11	1.05	<0.05	<0.02	0.58	0.013	0.16	9.1
3472		7.3	0.37	46.1	1.8	14	3.22	188	0.28	8.79	0.47	0.03	0.06	0.261	0.45	27.5
3473		0.34	1.58	27.1	1.1	5	0.84	279	0.7	2.72	0.06	<0.02	1.62	0.028	0.34	13.5
3474		<0.01	0.53	1.93	1.7	4	0.27	369	5	1.37	0.07	<0.02	0.9	0.189	0.52	1.1



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**CERTIFICATE OF ANALYSIS SV08154665**

Method Analyte Units LOR	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2
3455															
3456															
3458															
3459															
3462															
3465															
3468															
3470															
3471	1.4	0.01	53	3.98	0.01	0.14	8.2	50	122	8.7	<0.001	1.33	32.2	0.3	0.3
3471	3.1	0.01	91	13.95	0.01	0.65	1.2	60	155.5	20.9	0.005	0.19	9	0.7	0.5
3472	13.2	0.05	26	1.51	0.02	1.33	3.9	90	9750	51.7	0.001	0.15	13.9	4.2	1
3473	6.7	0.03	42	4.32	0.01	0.36	0.9	110	498	45	0.003	0.02	66.5	1	0.2
3474	2.1	0.01	16	106	0.01	0.12	2.2	130	6450	23.7	0.007	1.06	239	0.5	0.2



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Sample Description	Method Analyte Units LOR	ME-MS41												
		Sh ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Ti ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
3455		0.3	1.6	<0.01	0.02	1.8	<0.0005	0.06	3.09	1	8.86	0.84	15	<0.5
3456		0.5	2	<0.01	0.14	11.3	<0.0005	0.2	5.55	1	480	4.71	11	<0.5
3458		8.5	8.9	0.11	0.02	0.4	0.038	0.3	0.71	11	4.61	42.3	82	<0.5
3459		0.9	2.8	<0.01	0.01	6.3	<0.0005	0.38	2.36	3	218	4.4	24	<0.5
3462		0.5	0.9	<0.01	0.05	2.5	<0.0005	0.3	0.9	1	600	0.68	110	<0.5



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**CERTIFICATE OF ANALYSIS SV08154665**

**CERTIFICATE COMMENTS**

**Method**

ME-MS41

ME-MS41U

Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).  
 Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).