

Excursion sites in Northern Västerbotten

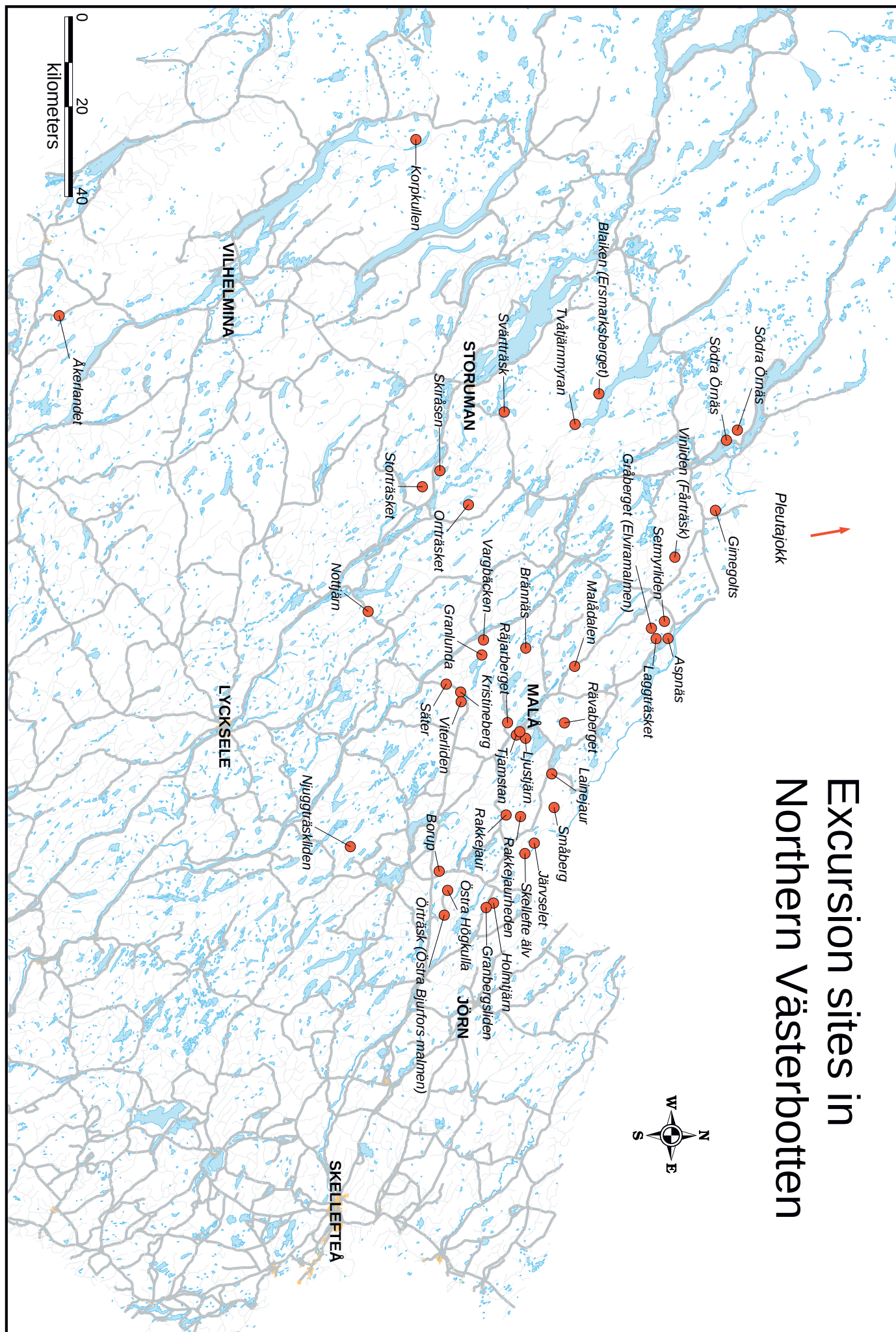


EUROPEAN UNION

by Mattias Johansson
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Blaiken



Ersmarksberget

Zn-Pb-Ag-Au prospect
24H 0c

Northing: 7252000
Easting: 1563370

Distance: ca 100 km from Malå.
Drive towards Sorsele and turn right at Juktan
River towards Blaiken.

The area contains several stripped and cleaned
outcrops as well as large test pits and dumps.
Scan Mining should be contacted before a
visit.

The Ersmarksberget prospect can be divided into two separate
mineralisations, a Zn-Pb-Ag mineralisation and an Au mineral-
isation. Both the orebodies will be mined.

The Zn-Pb-Ag mineralisation is associated with a tectonic brec-
cia in metasediments, mainly clay- and siltstones, located near a
tonalite dome. The veins in the breccia are 2-10 mm wide and
consist of sphalerite, galena and calcite. Systematic drillings
show that the mineralised zone is at least 2 km long, 5-60 m
wide and continues down to a depth of 150 m.

The gold mineralisation is located to the southern parts of
the area where it occurs close to the zinc mineralisation. The
gold occurs as disseminated native gold in a complex system
of quartz veins following the edge of the tonalite dome. The
quartz is dark grey and often banded. Sulphides are common in
the quartz veins. The company Scan Mining have made detailed
investigations and drilled over 38 000 m in the area. Scan Mining is planning to start an open pit
mine in the summer 2006.

For further information please visit the Scan Mining home page at www.scanmining.se
Please contact Scan Mining before your visit!

References

www.scanmining.se



Test pits at Ersmarksberget.
(www.scanmining.se)

Blaiken



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Test pits at Ersmarksberget.
(www.scanmining.se)

Granlunda



Nagruvan

Closed open pit Cu-Zn-Ag mine
23I 5e

Northing: 7225330
Easting: 1621730

Distance: ca 55 km from Malå.
Drive to Kristineberg, then continue to Björksele. Turn right towards Sorsele and right again after ca 8 km.



Ca 3 hectares with lots of very rich ore boulders surrounding the closed Granlunda open pit mine and a test pit. The pits are fenced in and located about 150 m from each other.

The Granlunda (Nagruvan) ore was found in 1927 and four short DDH were drilled in 1937. Several test pits were made. In 1944 no more than 2300 tons at a grade of 2.32 % Cu was mined, to a depth of 15 m. The Granlunda mine is situated in a 300 m long and 1-8 m wide, northeast trending, mineralised zone. The southwestern part of the zone consists mainly of pyrite while the northeastern part consists of pyrite, pyrrhotite, sphalerite, chalcopyrite and galena. High grades of silver are associated with zinc and copper. The zone is open to the northeast where it deepens.



Granlunda open pit mine. (Prap 86089)

The mineralisation at the Granlunda mine consists of a chalcopyrite- pyrrhotite breccia in a black schist and a richer chalcopyrite mineralisation in a sericite quartzite. There is also a zinc-lead-silver rich mineralisation occurring in an amphibolite skarn. The ore is zoned with copper dominating the hanging wall while zinc dominates the footwall.

There is a similar mineralisation also called Granlunda located 500 m from the closed mine which have been the subject to several exploration programs.

References

Prap 86089; *Utvärdering av statlig gruvegendom Granlunda*
Prap 85536; *Utvärdering av statlig gruvegendom Del II textdel*
SIND 1979:9 p.22; *Berg och malm i Västerbottens län*
MiS 2 p.211; *Malm i Sverige 2*
SGU C389 p. 78; *Skelleftefältet*
Brp 79036; *Koppar-zink-mineraliseringen Granlunda*
Prap 87050; *Granlunda - Diamantborrning*

Gråberget



Elviramalmen

Cu prospect
24I 2d

Northing: 7263000
Easting: 1615780

Distance: ca 46 km from Malå.
Drive towards Adak and Slagnäs and turn left at Aspnäs. An "off road" vehicle is advised for the last road.



More than 5 small test pits/trenches containing thin veins and disseminated chalcopyrite.

A short exploration program was conducted in the 1940s and after the discovery of a mineralised boulder in 1974 a more thorough program was conducted by SGU. The program involved geophysics, geochemistry, mapping, drilling (47 DDH, 7440 m) etc. Gråberget is located in the Ledfat area and the mineralisation occurs in two major zones with weaker mineralisation in between. The copper mineralisation is associated with an E-W striking granite intrusion in a polymict conglomerate. The intrusion varies in thickness from a few meters to 400 meters. The mineralisation occurs closer to the conglomerate contact, both in the granite and the conglomerate, up to ca 30 m from the contact. The granite is medium grained in the central parts and gets porphyritic close to the conglomerate. Younger dolerite dikes crosscut both the granite and the conglomerate.



Test pit at Gråberget.

The two major mineralised zones differ from each other. The western zone is dominated by thin netveining of chalcopyrite and pyrite in a tourmaline brecciated granite-porphyry. The host rock is often sericite- and epidote altered. Molybdenite and sphalerite occasionally occur in minor amounts. The eastern zone is dominated by hematite, chalcosine, chalcopyrite and pyrite. The chalcopyrite and pyrite occur in thin veins and as impregnation, while chalcosine and bornite occur as fine grained impregnation in hematite rich parts of the rock. The host rock to the major part of the mineralisation is an epidote altered granite-porphyry.

The tonnage of the mineralisation have been calculated to 393 048 tonnes @ 0.50% Cu.

References

Brp 79001; *Gråberget Kopparmineralisering*
SIND 1979:9 p.21; *Berg och malm i Västerbottens län*
MiS 2 p.209; *Malm i Sverige 2*

Holmtjärn



Closed Au-Ag-Cu-As mine
23J 5f

Northing: 7227920
Easting: 1676820

Distance: ca 48 km from Malå.
Drive towards Glommersträsk and turn left over the Skellefte River. Turn right after ca 2 km towards Petikträsk and then left again after ca 2 km.

One water filled shaft and a few outcrops of pyrite rich schist. Large piles of pyrite rich boulders occur next to the shaft.

The old Holmtjärn ore was the first to be mined in the Skellefte field. The main ore was mined in 1924-1925 and produced 366 tons of ore. Despite the low tonnage it was economic due to the exceptionally high grades.

In 1924 Boliden found a strongly rust weathered outcrop ca 55 km NW of Boliden. The outcrop was highly enriched in gold and silver and a sample from the weathering product showed 1165 g/ton Au and 5542 g/ton Ag. The main ore consisted of a compact gold-copper-arsenic ore in the hanging wall and a pyrite ore in the footwall. The ore body was 10 m long, up to 3 m wide and occurred down to 28 m. A second ore body of the same size, but much lower grades, occurred 35 m east of the main ore. The upper parts of the unweathered copper-arsenic ore ran about 100 g/ton Au, but the grade increased towards the bottom where at 23 m the ore carried 524 g/ton Au. The silver content at the corresponding depth was 858 g/ton. The gold-copper-arsenic ore was dominated by arsenopyrite brecciated by chalcopyrite. Fine grained native gold occurred in minor amounts. The pyrite ore was dominated by pyrite and chalcopyrite, but also contained native gold and several other sulphides. The wall rock consists of a strongly sericitised quartz porphyry.

References

GFF 61 p.91; *The Gold-Copper-Arsenic Ore at Holmtjärn, Skellefte District, N. Sweden.*
SGU C389 p. 87; *Skelleftefältet*
SIND 1979:9 p.36; *Berg och malm i Västerbottens län*
MiS 2 p. 237; *Malm i Sverige 2*



The old Holmtjärn open pit mine.

Kristineberg



Operating Cu-Zn mine
23I 4g

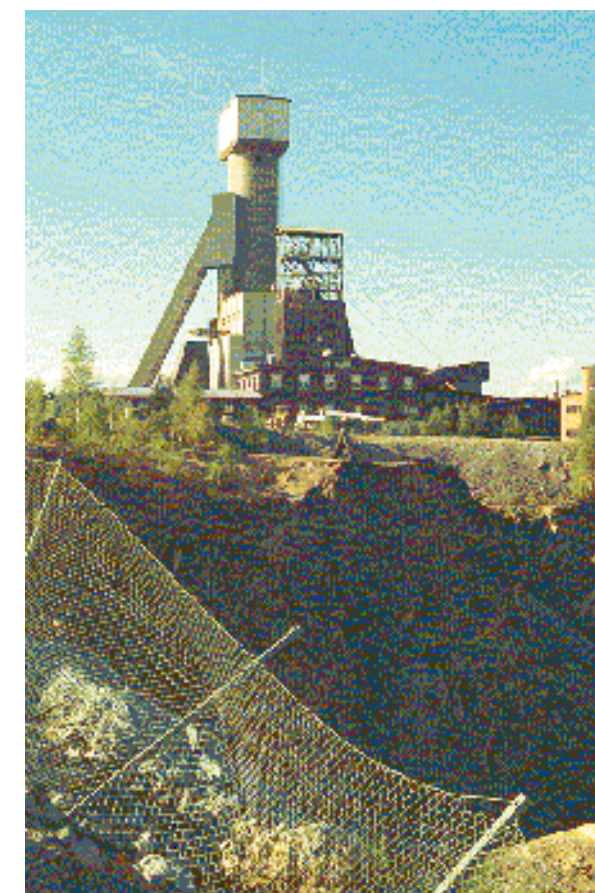
Northing: 7220600
Easting: 1629950

Distance: ca 26 km from Malå.
Drive towards Skellefteå and turn right to Kristineberg.

Two fenced in open pits with outcrops of weakly mineralised quartz mica schist occurs along the roadside. Underground mine operations.

The Kristineberg deposit was discovered through geophysical investigations in 1918. Mineralised boulders had earlier been found in the area. The Kristineberg ore is located on the northern flank of a major E-W trending syncline plunging about 30° to the west. The ore consists of several separate bodies occurring in two parallel zones conformable to the stratigraphy, consisting of massive pyrite with varying amounts of sphalerite and chalcopyrite. Due to folding and shearing the thickness of the ore varies from a few meters up to about 25 m. The local mine geology consists of rhyolites and minor andesites intruded by a fine grained porphyry. The ore bodies occur in sericite- and chlorite schists, which often are talc rich along the hanging wall. Pyrite and chalcopyrite are dominant in the footwall side of the deposit while sphalerite gets more abundant in the central parts and increase towards the hanging wall. Stringer type pyrite and chalcopyrite ore occur in a few places.

Three ore forming stages associated with folding have been suggested. These were preceded by extensive magnesium metasomatism.



The Kristineberg head frame behind one of the closed open pits.



One of the closed open pits at Kristineberg.

The first ore forming stage resulted in the formation of a pyrite rich ore with varying amounts of sphalerite and chalcopyrite. A second ore forming stage is represented by a chalcopyrite rich ore, located around the ore bodies in the southern part of the deposit. A thin but very rich sphalerite ore occurring along the hanging wall in the northern parts of the area belongs to the third ore forming stage. Scattered quartz-tourmaline veins cut all units at Kristineberg, probably filling in shear zones formed during the latest deformation.

The ore amounts to a total of >20 million tons and the present annual production at Kristineberg is around 560 000 tons @ 1% Cu, 3.7% Zn, 0.5% Pb, 1g/ton Au and 35g/ton Ag.

References

SGU C524; *Geology and ores of the Kristineberg deposit, Västerbotten, Sweden*
 SGU Ca62 p. 48; *The Skellefte field Excursion guide No 4*
 SGU C389 p.91; *Skelleftefältet*
 SIND 1979:9 p.23; *Berg och malm i Västerbottens län*
 MiS 2 p.211; *Malm i Sverige 2*
 Economic Geology, 91 p.1022-1053; *Setting of Zn-Cu-Au-Ag Massive Sulfide Deposits in the Evolution and Facies Architecture of a 1.9 Ga Marine Volcanic Arc, Skellefte District, Sweden*

Lainejaur

Closed Ni-Cu mine

23I 8j

Northing: 7240850
 Easting: 1648120

Distance: ca 19 km from Malå.
 Drive towards Arvidsjaur, turn right ca 1.5 km after passing Lainejaur. There is a sign along the road.

Ca 3 hectares with scattered ore boulders and 3 sealed mine shafts.



During 1941-45 Lainijaur produced 100 526 tonnes of ore averaging 2.20% Ni, 0.93% Cu and 0.1% Co. The deposit is located in the same stratigraphic horizon as most of the base metal deposits in the Skellefte field, i.e. in a transition zone between metasediments and metavolcanics. The host rock is a NE-SW striking gabbro-norite dike which cuts the base of a syncline and extends upwards as several "wing shaped" sills and finally as a phacolith shaped body on top. The central part of the gabbro-norite is approximately 50 m thick and overlaid by metasediments. In the central parts the metasediments are almost completely replaced by quartz-diorite and quartz-gabbro without any sharp contact to the gabbro-norite.

There are three different ore types: disseminated ore, massive nickel-pyrrhotite ore and nickel-arsenic veins. The disseminated ore consists of disseminated pyrrhotite and chalcopyrite in the gabbro-norite. The ore is formed in several different stages and is rich in the central parts. The average grades of this ore type was 0.2% Ni, 0.2% Cu, 0.02% Co, 2.5% S and 0.2% As.

The massive nickel-pyrrhotite ore, which was the most important ore, consists of almost massive and often coarse grained pyrrhotite containing pentlandite together with chalcopyrite and arsenic-nickel minerals. The ore occurs on both sides of the gabbro-norite dike just below the phacolith. The average grades of this ore type was 50.2% Fe, 2.6% Ni, 0.4% Cu, 0.03% Co, 32% S and 0.1% As.

The nickel-arsenic veins consist of a large number of nickel-, arsenic- and sulphide minerals. The veins often radiates from the massive nickel-pyrrhotite ore in which also occasionally occurs. The average grades of this ore type was 18.0% Fe, 10.1% Ni, 1.9% Cu, 1.1% Co, 16% S and 18.5% As.

References

SGU, C577; *Geology of the Nickel deposit at Lainijaur in northern Sweden*
 GSF, Bull 333; *Nickel-copper deposits of the Baltic Shield and Scandinavian Caledonides*
 SIND 1979:9 p.60; *Berg och malm i Västerbottens län*
 MiS 2 p.217; *Malm i Sverige 2*

Malådalen



Cu prospect
23I 9d

Northing: 7245950
Easting: 1624240

Distance: ca 20 km from Malå.
Drive towards Adak and turn left towards Bockträsk.

One ca 15 m long test pit with mineralised outcrop.
Additional outcrops and boulders occur around the test pit.

The Malådalen prospect, first discovered in 1928, is located to the outskirts of the Adak granite massif. The mineralised zone has an E-W strike and occurs in a sericitic quartzite. The mineralisation consists mainly of pyrite and chalcopyrite. A smaller amount of pyrrhotite, molybdenite, bornite and magnetite also occurs. Within the mineralised zone there is minor skarn alteration with hornblende, biotite and garnets. Minor amounts of chlorite and tourmaline also occur. In association to the mineralisation there is a pegmatite containing arsenopyrite and garnets.

References

Prap 86006; *Mattsbergsområdet Geologisk och geofysisk sammanställning*
SGU, C389 p. 91; *Skelleftefältet*
SIND 1979:9 p.21; *Berg och malm i Västerbottens län*
MiS 2 p.209; *Malm i Sverige 2*



The test pit at Malådalen.

Njuggträskliden



Ni-Cu-Co-PGE prospect
22J 9c

Northing: 7196090 / 7196150
Easting: 1664270 / 1664165

Distance: ca 78 km from Malå.
Drive to Risliden via Norsjö, turn right towards Åmsele and right again just before the power lines.

The locality contains two stripped and cleaned outcrops and several boulders. The outcrops are ca 50m² each and located ca 150 m apart.

Mineralised boulders and outcrops were first discovered at Njuggträskliden in 1974. Geophysical measurements, trenching and drilling started short thereafter. A total of four mineralised ultramafic bodies, occurring in pares, were found in the area. The two northernmost are described above. The mineralisations occur in metapridotites, serpentinites and metapyroxenites. Two of the ultramafic bodies show jackstraw textures.



Jackstraw texture in metaperidotite.



Rust weathered outcrop.

Rocks in the area consist mainly of folded and veined metasediments containing graphite and sulphides. The ultramafic bodies have intruded into these rocks and occur as 70-300 m long lenses in fold structures. A typical ultramafic body in the area consists of a central part of metapridotite-serpentinite surrounded by amphibole-pyroxene rocks with an outer actinolite-tremolite rim.

The mineralisations consist of pyrrhotite, pentlandite, chalcopyrite and minor amount of maucherite and nickeline. The majority of the mineralisations occur as disseminated grains and schlieren, but breccias of pyrrhotite, pentlandite and chalcopyrite also occur. The two mineralisations to the north are 70-100 m long and 20-30 m wide while the two to the south are 270-300 m long and 1-15 m wide. The nickel grades in the ultramafic bodies go up to 4.3% Ni and ore calculations resulted in about 0.5 million tons @ 0.73% Ni, 0.04% Co, 0.27% Cu and 6.2% S. Njuggträskliden also contain PGE with up to 4.9 g/ton Pt and 3.84 g/ton Pd.

References

Brp 81007; *Nickelmineraliseringarna i Njuggträskliden*
Brp 82119; *Nickelmineraliseringar i Njuggträskliden - Maratjärnliden*
Prp 83075; *Pt, Pd, Au-analyser*



Nottjärn

Cu-Mo-Au prospect
23I 0c

Northing: 7200050
Easting: 1612050

Distance: ca 80 km from Malå.
Drive towards Lycksele and pass the bridge over the Vindel river in Björksele. Continue and pass Norrbyberg towards Rusele. The locality is located ca 5 km from Norrbyberg.

A few small outcrops and lots of small blasted mineralised gneiss boulders from the road construction located along the road.

Boulder tracing in the area led to the discovery of several mineralised boulders and one mineralised outcrop west of Lake Nottjärn. The mineralisation consists of chalcopyrite, pyrite and molybdenite occurring in gneiss granite. Copper grades vary between 0.1-1.3 % Cu. Gold grades vary between 0.2-0.9 ppm Au. Silver grades are around 5 ppm Ag. Molybdenum grades vary between 0.35-0.8 % Mo. Geochemical sampling in the area shows anomalous values of copper, zinc and molybdenum south of lake Nottjärn. Bogs dominate the area south of Lake Nottjärn and there are no outcrops in this area.

At the small Sissnartjärnen about 1 km north-east of Nottjärn a small outcrop with a weak gold and copper mineralisation are found.

References

Prp 83017; *Norrbyberg - Vackerberget*
Geok 82004; *Lokal geokemisk prospektering vid Pauliden, Nottjärn och Spännfottjärn.*



The roadside locality at Nottjärn.

Orrträsket



Au prospect

23H 4h

Northing: 7222345
Easting: 1588370

Distance: ca 105 km from Malå.
Drive towards Storuman and turn left after the Juktan River towards Gunnarn and then turn right. A terrain vehicle is advised as the last km of road is in bad condition.

Ca 1 hectare of outcrop in two trenches containing mineralised quartz veins.

The Orrträsket prospect consists of 0.1-1 m wide, gold bearing, quartz-tourmaline veins, which are younger than the regional metamorphism and folding. The quartz veins are shear related and occur within acidic porphyry dikes. Greywackes and graphite-sulphide bearing sediments are host rocks to the dikes. Gold is only found within the quartz veins where it is associated with arsenopyrite. Samples from the trench show grades up to 4 g/ton Au.

References

Nsg 92038; *Nsg goldexploration in Sweden 1984-1991*
Prap 89059; *Södra och västra Skelleftefältet Geologiska prospekteringsarbeten 1989*



Trench with outcrops at Orrträsket.

Pleutajokk



U prospect (southwestern area)
26H 0f

Northing: 7353190
Easting: 1579210

Distance: ca 150 km from Malå.
Drive to Arjeplog and continue towards Stenudden. Turn left at Vuoltajaur.

Ca 100 m² clean outcrop along the road and a few boulders in the surroundings. There are lots of drillholes in the area.

The prospect at Pleutajokk consists of seven separate uranium anomalies over a 15 km² large area. Only the anomalies in the southwest have been thoroughly investigated. The case history and development at Pleutajokk up to 1976 is documented in "Gustafsson and Minell, 1977; *Case history and exploration of Pleutajokk uranium deposit, northern Sweden*". All in all 42 600 meters have been drilled at Pleutajokk with the majority concentrated in the southwestern area.

The exploration work undertaken concluded that the mineralisation to the southwest consists of uraninite associated with a large number of subparallel quartz veins arranged en échelon in two zones intersecting at 40°, forming a stockwork. The surrounding country rocks consist of acid metavolcanites of ignimbritic character. The mineralised area is limited to the east and west by younger granites and to the north by intermediate volcanics. The uraninite occurs as idiomorphic crystals concentrated along the sides of the quartz veins and as fine grained disseminations in the wall rock close to the veins. The uraninite is often associated with epidote filled joints. The uraninite grains are often surrounded by epidote. Secondary uranophane and kasolite occur locally on weathered surfaces or in joint planes. The wall rock is altered for up to 10 cm around the quartz veins, displaying an increase in sodium and a decrease in potassium. The uraninite has been dated to around 1738 Ma.

References

Pro 8029; *Geologi (Pleutajokkområdet)*
Brap 79037; *Uranium in Sweden excursion guide*
Brap 80016; *Förslag till fortsatt uranprospektering i Pleutajokk 1980*
Brap 80055; *Preliminary mineralogical investigation of the uranium mineralisations characteristic of Pleutajokk, Björklund and Harrejokk*
Irap 85026; *Beskrivning av SKBs mineralreserver*
Gustafsson and Minell (1977); *Case history and exploration of Pleutajokk uranium deposit, northern Sweden*



Outcrop close to the road at Pleutajokk.

Rakkejaur

Closed Cu-Zn mine
23J 6b

Northing: 7230700
Easting: 1657250

Distance: ca 25 km from Malå.
Drive towards Glommersträsk, Grundträsk and turn left ca 1 km past the Skäppträsk River.

Ca 3 hectares with scattered ore boulders, one ca 300 m long water filled open pit and one sealed shaft.

In 1921 a mineralised boulder was found which later led to the discovery of the Rakkejaur ore body. Rakkejaur is the largest ore body in the Skellefte field, more than 17 Mt. The vertical ore body is 550 meters long, up to 65 meters wide and striking NW-SE. The ore is known through drilling and a shaft down to 320 meters. Open pit mining was conducted 1965-70. Depending on the technical problems with the leaching the mining era was finished earlier than expected. The average ore grade have been calculated to 1.0g/ton Au, 45g/ton Ag, 0.3% Cu, 2.3% Zn, 27% S and 1.6% As. The deposit is located in the transitional zone between the metavolcanites and the metasediments, which is common for base metal deposits in the Skellefte field. The hanging wall (to the west) consists of quartz-porphyry altered to sericite-quartzite. Above this unit there is a carbonate rich weathering breccia and a polymict conglomerate. Further upwards in the sequence banded schists occur.

The major ore body follows the contact to the schist and ends in a drag fold to the north. The ore consists of low grade pyrite ore with varying grades of zinc, copper and arsenic. This ore type is rarely compact and often contains large quantities of wall rock material. Several lenses of arsenopyrite and a few lenses of copper ore occur. The contact between the pyrite ore and the wall rock is mostly sharp but towards the SSE the ore fan out or turns into impregnation.

The arsenic ore, which represents the first ore forming stage is always fine grained or dense. This ore type is widespread in the upper parts of the ore body but fans out downwards. In the deeper levels only minor veins remains.



The boulder which led to the discovery of Rakkejaur.



The Rakkejaur head frame and water filled open pit before the finishing treatment.

The copper ore represents the third ore forming stage and occurs as somewhat elongated bodies striking NW-SE. These bodies are generally quite pervasive vertically. In the areas with copper mineralisation the pyrite ore together with wall rock fragments have been brecciated and cemented by chalcopyrite and pyrite. The copper ore occasionally contains pyrrhotite and minor amounts of sphalerite, arsenopyrite and tetrahedrite.

Widespread carbonate veins containing chalcopyrite and sulphuric minerals represent a fourth ore forming stage. The mining area has now been cleaned up and is on its way back to nature. The open pit is filled with mining waste and the surface is covered with green grass.

References

MiS 2 p.221; *Malm i Sverige 2*
SIND 1979:9 p.27; *Berg och malm i Västerbottens län*
SGU C389 p.89; *Skelleftefältet*
Economic Geology, 91 p.1022-1053; *Setting of Zn-Cu-Au-Ag Massive Sulfide Deposits in the Evolution and Facies Architecture of a 1.9 Ga Marine Volcanic Arc, Skellefte District, Sweden*

Storträsket



W-Mo-Cu-Au prospect
23H 2g

Northing: 7212090
Easting: 1584365

Distance: ca 120 km from Malå.
Drive towards Storuman and turn left after Juktan River to Gunnarn. Turn left towards Lycksele and then right after ca 5 km towards Grundfors and right again after ca 1 km.



Ca 2 hectares of stripped overburden and cleaned outcrop with mineralised quartz veins. A lot of boulders occur around the outcrops.

In 1979 boulder tracing led to the discovery of a leucogranite boulder with a quartz vein containing wolframite and scheelite. Analyses showed that the vein contained 11% wolfram. The following year a mineralised quartz vein was found in outcrop next to the boulder and a 150x150 m area was stripped of overburden. A total of 20 DDH were later drilled at Storträsket.



Boulders and outcrops at Storträsket.

The mineralised veins occur in a 100-200 m wide zone of leucogranite located in the northern contact between a granite dome and a surrounding metagraywacke. The stripped outcrops revealed ca 15 quartz veins of which 9 were mineralised. These veins vary in width between 10-60 cm and the longest one is around 100 m. The majority of the veins are parallel with a NE-SW strike. The mineralisation is unevenly distributed with wolframite often in 10x10 cm clusters. The richest section is a 3 m long and 10-20 cm wide zone with almost compact wolframite.

The quartz veins also contain small amounts of scheelite, molybdenite, chalcopyrite, pyrrhotite, arsenopyrite and traces of native copper. Some of the veins also show anomalous values of gold and silver with up to 6.8 g/ton Au and 40 g/ton Ag. The scheelite mainly occurs as separate grains and in joint in wolframite. The molybdenite is disseminated in the leucogranite and along the contact to some of the quartz veins. The other sulphides generally only occur in very small amounts.

References

Bräp 81507; *Wolframfyndigheten i Storträsket*
Bräp 82017; *Wolframmineral i ett sulfidkoncentrat från Storträsket, Storuman*
Bräp 82551; *Storträsket*

Svärtrräsk



W prospect
23H 6d

Northing: 7230295
Easting: 1567770

Distance: ca 100 km from Malå.
Drive towards Storuman and turn right at Gunnarsberg.

Lots of mineralised outcrops and boulders over a several hectare area. One large pile of blasted boulders located next to the road.



The Svärträsk prospect consists of a 150 m long and 5-12 m wide coarse to medium grained dark green hornblendite containing scheelite. The hornblendite have a NE-SW strike and are interpreted to be an alteration product from an ultrabasic lava within the surrounding greywacke schists.

The scheelite mainly occurs where the hornblendite is veined or cracked up and then occurs within these structures or as disseminated grains in the hornblendite. Scheelite is particularly abundant in association with cm wide light grey veins. The mineralisation is reported to be epigenetic. Two trenches have been blasted perpendicular to the hornblendite zone and twelve DDH were drilled in 1977 and 1978. Scheelite mineralisation was intersected in nine of the twelve holes. In meter long sections of the drill cores the grades vary between 0.005-0.1 % W. Occasionally the grades reach up to 1 % W. Ore calculations show that down to a depth of 50-100 m there is 250 000 tons @ 0.17 % W, which corresponds to 0.22 % WO_3 . The area of the calculated ore is 984 m² and the grades are slightly higher in the central parts. Several geophysical surveys have been undertaken in the area using magnetics, gravity, slingram, IP, resistivity and self potential.



Blasted boulders at Svärträsk.

References

SIND 1979:9 p.67; *Berg och malm i Västerbottens län*
Bräp 79015; *Wolframförekomsten vid Svärträsk*
Bräp 80012; *Wolframförekomsten vid Svärträsk*

Säter



Andalusite prospect
23I 2f

Northing: 7217420
Easting: 1628200

Distance: ca 30 km from Malå.
Drive towards Björksele after passing Kristineberg.
Outcrops occur on the left side of the road.

Ca 3 hectares of stripped and cleaned outcrop and several large blocks.

The andalusite rich sericite-quartzite just north of the small village Säter have in the past been investigated both with focus on quarrying for ornament stone and extracting andalusite. In 1991 Lapis Polaris AB stripped and cleaned a large outcrop and extracted a few blocks of the sericite-quartzite. Later the same year SGAB dug four trenches in the area in order to investigate the area with focus on andalusite. Fourteen DDH were drilled in 1992 by SGAB in order to outline the andalusite occurrence. The drillings showed that the andalusite occur in a NW-SE zone. To the northwest the zone continues down to at least 50 meters while the thickness decreases quickly to the south and southeast. The area is probably part of an anticlinal fold with a NW-SE striking fold-axis and a NW plunge.

The majority of the andalusite occurs in cm wide brownish to pinkish bands in a white sericite-quartzite. The andalusite grains in this clearly banded rock are fine grained. When the sericite-quartzite is coarser grained and displays weaker banding the andalusite is also coarser grained. The andalusite grades vary. Up to 30-40 volume % have been estimated under UV-light and normative calculations show up to 27 weight %.

The formation of andalusite in sericite- and chlorite schists in the Kristineberg area is reported to be typical postkinematic recrystallisation and form, as a rule, porphyroblasts. Andalusite occurs as pseudomorphs after folded bundles of sericite and these porphyroblasts have consequently taken place after the deformation.

References

SGU C622 p. 14, 38; *Stratigraphy and metamorphism in the Kristineberg area*
SGU C524 p. 17; *Geology and ores of the Kristineberg deposit, Vesterbotten, Sweden*
Pro 8341; *Andalusit från Skelleftefältet*
Prap 91 530; *Andalusit i Säter-området*
Prap 92 017; *Andalusitprojektet i Säter*



Andalusite rich sericite-quartzite outcrops at Säter.

Tvåtjärnmyran



W-Sn prospect
23H 9e

Northing: 7246025
Easting: 1570880

Distance: ca 90 km from Malå.
Drive towards Storuman and turn right at Juktan River towards Blaiken.

Ca 5 hectares with several large boulders containing mineralised quartz veins. Around 10 of the boulders have been blasted.



The wolfram and tin prospect at Tvåtjärnmyran was discovered through heavy mineral sampling and boulder tracing conducted in the late 1970s and early 1980s. Samples from boulders show up to 1.5% W and 3.5% Sn. There are very few outcrops in the area. The local geology consists of metasediments, metabasalts and granites. Tvåtjärnmyran consists of mineralised quartz veins in the granite along the contact to the metasediments. These quartz veins contain wolframite, cassiterite and arsenopyrite, along with small amounts of scheelite, sphalerite, chalcopyrite, molybdenite, pyrite, pyrrhotite, fluorite and tourmaline. The latter is also found in the surrounding granite.



Mineralised boulder at Tvåtjärnmyran.

A base of till sampling program was undertaken 1983 in order to specify a target area for the planned drilling program. Fifteen drillholes were drilled in the winter 1883-1984. Ten holes were drilled in the northern part of the area (Tvåtjärnmyran norra) and five in the southern part (Tvåtjärnmyran södra). Geophysical surveys were made in the majority of the drill holes. Wolframite and cassiterite mineralised quartz veins were intersected in seven of the drill holes and 24 of the 184 intersected quartz veins contained mineralisation.

The quartz veins often occur close to each other and at least four parallel zones of veins have been discovered. The width of the veins varies between 0.1-150 cm. The zones of quartz veins are associated with strong greisen alteration of the surrounding granite. The mineralisation of wolframite and cassiterite is very irregular and only found within the quartz veins, except in one case where large amounts were discovered in a coarse grained pegmatite. The wolframite occurs as 2-3 cm long tabular crystals. Crystals up to 10 cm have been found in boulders.

References

Prap 84069; *Tvåttjärnmyran Diamantborrning 1983-84 Del 1 och Del 2*

Brap 82093; *Sn-W uppslagen Tvåttjärnmyran Fäbodförsen*

Brap 81561; *Blaikenområdet Sn-W uppslagen: Granberget Stenmyrberget Tvåttjärnmyran Fäbodförsen*

Prap 83543; *Tvåttjärnmyran Geologi 1983*

Prap 83085; *Tvåttjärnmyran Geofysik 1983*

Vargbäcken

Au prospect

23I 5d

Northing: 7225700

Easting: 1618400

Distance: ca 55 km from Malå.

Drive towards Sorsele and turn left to Brännäs ca 500 m after passing Malå-Vännäs. Turn left towards Lycksele ca 5 km after passing Brännäs and then turn left again ca 1 km before Vindelgransele.

A ca 150 m² trench containing mineralised quartz veins.

The gold mineralisation at Vargbäcken was discovered 1997 in outcrop. Trenching and drilling commenced later that same year. The mineralisation is associated with two parallel systems of quartz veins, hosted by an elongated diorite intrusion in metasediments. The quartz veins vary in width from less than one centimetre to mere than half a meter.

The diorite intrusion forms a >1.5 km long and 100-200 m wide, SW-NE trending, sill like body. The highest density of gold bearing quartz veins was found towards the northwestern diorite-metasediment contact. Visible gold has been observed over at least 800 m along strike. The contact zone between the diorite and metasediments is characterised by intense alteration, including silicification and quartz brecciation.

Pyrrhotite is the most abundant sulphide and occurs in 70-80% of the quartz veins. Pyrrhotite content rarely exceeds 10%. Minor amounts of chalcopyrite, arsenopyrite, pyrite, sphalerite, molybdenite, native copper and, possibly, galena also occur in the quartz veins.

The gold is often relatively coarse grained and visible to the naked eye. Unlike other similar occurrences in the area the gold is not closely associated with arsenopyrite. There is no direct correlation between gold and sulphides, but elevated gold values can be correlated to increased sulphide content, especially sphalerite.

References

Gold '99 Trondheim: Precambrian gold in the Fennoscandian and Ukranian Shields and related areas, Abstract volume (1999), p.30-31; *Vargbäcken - a quartz vein hosted gold deposit in westernmost Skellefte District, Northern Sweden*



Trench with outcrops at Vargbäcken.

Vinliden



Fårträsk

Au prospect
24I 3a

Northing: 7268200
Easting: 1600010

Distance: ca 90 km from Malå.
Drive to Slagnäs and turn left towards Sorsele and then left again at Buresjön. Finally turn right ca 500 m after passing Gargån village.

Vinliden consists of several stripped and well cleaned outcrops, ca 70 m².

The Vinliden gold mineralisation consists of a number of quartz veins occurring in a greywacke sequence. The mineralisation is spatially related to feldspar porphyry dikes, which have intruded into the greywackes. The quartz veins have been emplaced in small scale faults and shear zones within one of the major fault structures in the area. Alteration zones with distal albite and proximal sericite surround the quartz veins. Sulphides are quite abundant both within the quartz veins and in the alterations zones. The high gold grades are associated with disseminated arsenopyrite and pyrrhotite. North Atlantic Natural Resources AB has drilled one drillhole and a 5 m section at a depth of 89 m contained 0.7 g/ton Au.



Some of the outcrops at Vinliden.

References

Broman, C., Bergström, U., Lindblom, S. (1995), *Fluid evolution in gold-bearing quartz veins associated with feldspar porphyry dikes at Vinliden in the Skellefte District, northern Sweden*
Bergström, U. (1996), *Gold mineralization in the Vinliden area, Skellefte District, northern Sweden*
Nsg 92038; *Nsg goldexploration in Sweden 1984-1991*
North Atlantic Natural Resources AB; *Årsredovisning 2000*

Örträsk



Eastern Bjurfors ore

Closed Cu mine
23J 3f

Northing: 7216970
Easting: 1679490

Distance: ca 50 km from Malå.
Drive towards Skellefteå/Boliden and turn left to Örträsk.

One water filled pit and large piles of ore boulders. There are no outcrops around the mine. The old head frame with the sealed shaft hosts a small museum of the mine. Örträsk is the start of the tourist cabin line to Bäckerudden.



The Bjurfors ore field, which has a length of 900 m, have been divided into three separate ore bodies, Eastern Bjurfors, Middle Bjurfors and Western Bjurfors.

The Eastern Bjurfors ore was first drilled with 7 drill holes between 1922 and 1924 and later mined in the 1930s. The ore consisted of 0.2 Mt averaging 2.6% Cu and 27% S. The ore body was 185 m long and 30 m wide with a maximum depth of 50 m. The surrounding country rocks consists of greenstones alternated with quartz porphyry lava beds and tuffs. Beds of limestone also occur. Close to the ore the rocks have been altered to chlorite-quartzites and chlorite-schists. The ore consisted of chalcopyrite, pyrite and pyrrhotite as well as insignificant amounts of other sulphides.

Middle Bjurfors is located ca 150 m west of Eastern Bjurfors and they resemble each other in appearance but differ in content. Middle Bjurfors consists of pyrite beds with minor zinc and lead. The tonnage have been calculated to 0.6 Mt at 3.5% Zn, 0.2% Pb and 31% S.

Western Bjurfors is located ca 250 m west of Middle Bjurfors. The tonnage and grades are much lower here compared to Middle and Eastern Bjurfors.

References

MiS 2 p.232; *Malm i Sverige 2*
SIND 1979:9 p.34; *Berg och malm i Västerbottens län*
SGU C389 p.66; *Skelleftefältet*
SGU C424 p.110; *Geology and ores of the Malånäs district Västerbotten, Sweden*

Skiråsen



Au prospect
23H 3f

Northing: 7216000
Easting: 1580800

Distance: ca 120 km from Malå.
Drive to Storuman and continue towards Lycksele ca 20 km and turn left at the end of Barsele.

Several boulders and ca 1.5 hectares of trenching and cleaned outcrop.

Barsele consists of two separate mineralisations occurring within volcanic sediments. The main mineralisation consists of quartz veins containing arsenopyrite and black tourmaline occurring a more than 10 m wide shear zone. The quartz veins are and clearly shear related and epigenetic. The mineralisation has been calculated to 2 million tons @ 2.3 g/ton Au. Analyses from drill core show Au grades exceeding 10 g/ton.

The second mineralisation is located south of the one described above and consists of a weak Cu-Zn-Au mineralisation hosted by metasediments.



Outcrops containing the main mineralisation at Skiråsen.

References

Nsg 92038; Nsg goldexploration in Sweden 1984-1991

Åkerlandet



Zn prospect

Northing: 7131 400
Easting: 1546380

Distance: 210 km from Malå.

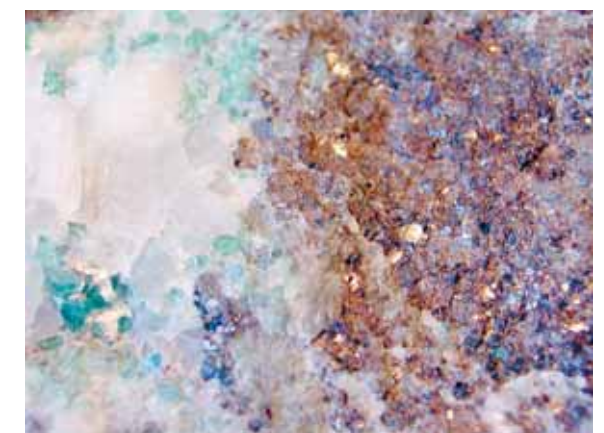
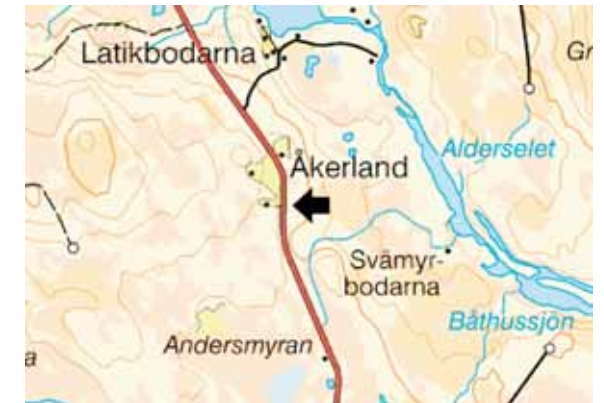
Drive to Vilhelmina and follow the road against Dorotea. Pass the river in Mesele and take left 12 km after the river. Leave the car at the very small village Åkerland after 8 km. You find the information sign just beside the road in front of a house. A path from the sign leads you to the old deposit.

Despite that hundred years has passed since the work at the Åkerlandet deposit, the traces after the mining are very clear. The deposit was mined between the years 1904-1906. About thirty pits has been dugged around the area, and a twenty meter long open drift, four meters wide and more than ten metres deep can be seen. Most parts of the digged pits have now collapsed and are waterfilled.

The miners were promised that they could sell bags with ore to America, but those businesses never became reality. All the bags of sphalerite were left at the mine when the work at the mine ended. A lot of waste rock including a big number of rich boulders with sphalerite and fluorite can be seen today. Fluorite can be seen in different colours but mostly light green. Poor mineralisation of galena even occurs. The main rocktype is a gneissic breccia with calcite, quartz, fluorite and sphalerite. The area around is hilly with several outcrops. This makes it easy to understand the geology, at least on the surface. Maybe the reality is exactly what mining engineer Mr Nordvall said hundred years ago; the body of the orespider we could not find, only his legs! It can in worst case only be thinner veins, without a real orebody.

Even if the first result was bad, the mineralisation is interesting. With new technic maybe it is possible to find some more mineralisations in the area. No great efforts has been made the last decades, in the hunt for deposits in the southern part of Vilhelmina county.

As an excursion site this place is excellent, specially for education, while it is easy to find different kind of minerals.



Åkerlandets breccia är vackert färgad av grön fluorit och zinkblände

Östra Högkulla



Closed Zn mine
23J 3e

Northing: 7217709
Easting: 1673984

Distance: ca 55 km from Malå.
Drive towards Skellefteå/Boliden and turn left towards Örträsk. Östra Högkulla is located ca 5 km past Örträsk.

One water filled open pit and one sealed shaft. Ca 2 hectares with lots of rich zinc ore boulders located around the mine.



The Östra Högkulla closed zinc mine, located just northwest of the village Östra Högkulla, was found in 1931. Measurements and drilling led to the mining of 0.1 Mt rich zinc ore. Östra Högkulla consisted of two separate outcropping ore lenses.

The northern lens had a pitch of 60° to the south and pinched out at 32 meters depth. The southern lens had a pitch of 38° to the south and continued much deeper. The zinc ore pinched out at a depth of 165 meters from where compact pyrrhotite continues downwards. The ore lenses were situated parallel to the schistosity in the contact between a quartz-porphyry and a banded tuff. The ore consisted chiefly of a compact, banded pyrite-sphalerite ore containing varying amounts of pyrrhotite. Pyrrhotite was probably deposited in a later stage of the ore forming process, replacing pyrite and sphalerite. Galena content was generally low while silver grades often were high. Chalcopyrite and arsenopyrite occurred only sporadically. Wall rock alteration is reported to be insignificant and the contact between the ore and wall rock is generally sharp. One sample from a test pit gave the following grades: 37% S, 1.7% Pb, 26.8% Zn, 239g/ton Ag.

References

MiS 2 p.230; *Malm i Sverige 2*
SIND 1979:9 p.31; *Berg och malm i Västerbottens län*
SGU C389 p.72; *Skelleftefältet*
SGU C424 p.137; *Geology and ores of the Malånäs district Västerbotten, Sweden*

Aspnäs



Skidnäs

Closed conglomerate quarry
24I 3d

Northing: 7266690
Easting: 1618040

Distance: ca 39 km from Malå.
Drive past Adak towards Slagnäs and turn right.

There are large outcrops and boulders in and around the quarry.



The conglomerate quarry was in operation when the nearby roads were under construction. The conglomerate is polymict and consists mainly of rounded sandstone- and acid volcanic fragments, in a fine grained matrix. Minor amounts of quartz-, conglomerate- and jaspis fragments also occur.

References

SGU C564; *Rocks and stratigraphy of the Ledefat area, Västerbotten County, Northern Sweden*



Closed quarry at Aspnäs.

Borup



Limestone deposit
23J 3d

North 7215853
West 1669730

Distance: ca 55 km from Malå.
Drive 53 km towards Skellefteå, turn left towards Arvidsjaur and left again after 500 m. Follow the small road for 2 km.

The limestone deposit of Borup was earlier the only limestone deposit of any importance in the northwestern part of the county. The limestone layering was known to be 70 meters long and 10-15 meters wide. In spite of the fact that the limestone was rather impure, containing approx. 60 % pure limestone, it was previously frequently used locally as an agricultural and mortar product. Mining was conducted mainly 1921-22, when the Municipality of Norsjö extracted and burnt lime as relief work. The income covered all mining expenses. At that time, the Borup lime was profitable due to its geographical location, far away from the railway, which made lime transportation from other areas costly.

Today, the original quarry is just seen as a cavity in the ground. There are, however, several piles of waste rock in the slope just north of the forest road. In the waste rock piles you can find both limestone boulders and high-grade arsenopyrite boulders.

Thanks to the lime-rich bedrock, rare plants are growing in the area. Today, the area is in fact interesting mainly from a botanic point of view, limestone outcrops are no longer visible around the quarry. Thus, the area has a lot to offer someone who is interested in geobotany, no proper inventory of the flora in the region has been made so far.

The nature reservation north of Borup consists of remnants of an old forest fire. The fire destroyed the previous underbrush while the older and taller pines survived. This has given the area a very special character.



Brännäs



Gabbro
23I 6e

Northing: 7235070
Easting: 1620200

Distance: ca 33 km from Malå.
Drive past Malå-Vännäs and turn left towards Stor Stinas Viste. Turn right ca 300 m after passing Stor Stinas Viste on Murpeback road. The outcrop is located on the left side of the road.

Ca 50 m² flat outcrop and several boulders located next to the road.

The gabbro around Brännäs displays magmatic layering and consists mainly of plagioclase, hornblende, biotite and quartz. The outcrops, containing minor quartz veins, shear zones and glaciation marks, have been sampled since similar intrusions in the area are anomalous in gold.

References
SGU Ai115; *Berggrundskartan 23I Malå*



Gabbro outcrops at Brännäs.

Gimegolts

Kursu valley
24H 5g

Northing: 7277210
Easting: 1589606

Distance: ca 90 km from Malå.
Drive to Slagnäs and turn left towards Sorsele. Turn right just before Heden and then finally turn left.

A ca 3 km walk in a beautiful nature reserve along a very steep canyon. The scenery is extremely beautiful and there is a wind/rain shelter at the end of the path.

The kursu valley is a canyon formed by glaciofluvial erosion, i.e. meltwater stream from the last ice age. There is a lot of well preserved andesitic- and rhyolitic volcanites in outcrop along the path.



The kursu valley at Gimegolts.



Granbergsliden

Fire fountain deposit
23J 5f

Northing: 7226270
Easting: 1677815

Distance: ca 50 km from Malå.
Drive towards Glommersträsk, pass the Skellefte River. After 2 km turn right towards Petikträsk. The outcrops occur on the hill ca 1 km past Granbergsliden.

Several, ca 1-15 m², outcrops on a several hectare clear-cut area.

The facies at Granbergsliden is associated with a subaqueous mafic volcanic centre consisting of a spectacular fire fountain deposit as well as hyaloclastites with pillow lobes and closely packed pillow lava. This facies indicates proximity to a synvolcanic fault, which could also be the conduit for mineralising fluids.

References

PIM field excursion, (June 22-23, 1993): *Volcanic facies and their implications in the Skellefte mining district*



Outcrop at Granbergsliden.



Järvselet



Geobotany

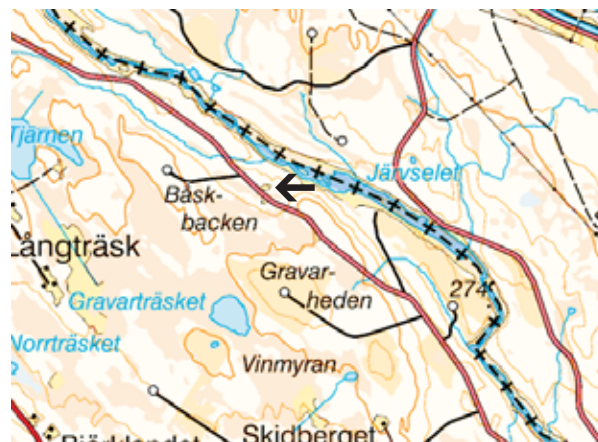
23J 7c

Northing: 7236970

Easting: 1663500

Distance: ca 45 km from Malå.

Drive to Grundträsk and turn right towards Lainejaur. Turn right towards Skidberg after 2 km. Turn left 1 km after having passed the houses, and follow the road for 3 km.



At Järvselet a unique spruce forest grows on an area with limestone altered volcanite. The tallest spruces reach a height of almost forty meters, which is very unusual for the district. There are also orchids such as the Fairy Slipper (*Calypso Bulbosa*) and some very rare lichens. Järvseleberget is located just southeast of the area, containing large conglomerate outcrops. Along the road towards northeast, there are outcrops with volcanic rocks, sometimes containing inclusions of crystal limestone in various colours. It is this outcrop area that creates the unique conditions for the lime-demanding flora.



Korpkullen



Stalon

Boulder quarry

23G 2b

Northing: 7210660

Easting: 1507273

Distance: ca 200 km from Malå.

Drive towards Vilhelmina and turn right towards Stekenjokk just outside Vilhelmina. Continue to Stalon and turn right towards Fatsjöluspen. Drive past the village and further on until the road ends.



The green mylonite at Stalon has been of great interest to the dimension stone industry and Lapplands Natursten AB has been running a test mining operation.

The polished stone slabs show beautiful veined patterns in various colour nuances. The mylonite consists of mm to dm thick layers of various colours and patterns. Some of the layers are greyish blue on a weathered surface, others more light beige, dark green, rusty brown or dark grey. Because of the variously coloured layers, it is difficult to find large enough volumes of homogenous rock, but, on the other hand, it is the alternating layers that make the stone so beautiful when cut and polished.

Colour variation is mostly due to later alteration, but also to original differences in the rock. The green colour of the mylonite is caused by the minerals chlorite and epidote formed by the alteration. The beautiful pattern was created by later folding of the banded mylonite. The pattern varies from straight bands to small folds and sometimes almost stained layers, depending on how the various layers have been affected by deformations. Some of the layers contain centimeter-sized greenish brown spheres which, at a closer look, prove to be torn tops of very small folds.

The joint pattern at Korpkullen is complex and irregular. The rock is usually heavily fractured with short and irregular joints. Joints trend mainly westnorthwest, plunging steeply towards southeast. A second strike of joints is perpendicular to the former one and dips steeply to the northwest.

Reference:

Natursten och industrimineral i Västerbotten;
Slutrapport från Luleå Tekniska Universitet.
Dec 1999

Laggträsket



Geological path
24I 2d

Northing: 7264050
Easting: 1618100

Distance: ca 45 km from Malå.
Drive past Adak towards Slagnäs. Turn left at Asp-
näs.

A ca 3 km long path with stops at five outcrops. There
are signs with geological information at each stop and
the walk takes approximately 3-5 hours. The nature
and view at the top is magnificent.



Short descriptions of the five outcrops:

1. Tuffitic sandstone: The layered tuffitic red sandstone consists of volcanic ash mixed with fine grained sandy material. The minerals are almost exclusively quartz and feldspar.
2. Lower conglomerate: This polymict conglomerate mainly consists of rounded sandstone- and acid volcanic fragments, in a sandy matrix. Minor amounts of quartz-, conglomerate- and jaspis fragments also occur.
3. Fault: The fault is seen as a 50 m long ravine. A fault is defined as zone of rock structure along which there has been displacement. Faults are triggered by tensions in the earths crust.
4. Porphyry dike: Both acidic and basic dikes occur in the conglomerates. The porphyry dike consists of a fine grained matrix with disseminated feldspar phenocrysts. There are no phenocrysts along the contact to the surrounding conglomerate, due to more rapid cooling.
5. Upper conglomerate: This conglomerate differs from the previous one. The matrix is usually coarser and more basic. Sandstone fragments are not found here, while granite- and basic volcanic fragments are abundant.

Ljustjärn



Porphyry
23I 7i

Northing: 7235040
Easting: 1640215

Distance: ca 3 km from Malå.
Drive towards Brunträsk and turn right.

Lots of large blasted boulders and ca 50 m² outcrops
along the road.



Outcrops in the area mainly consist of plagioclase
porphyritic metaandesite-metabasalt, often cut by me-
tarhyolite dikes and occasionally brecciated. A narrow
NW-SE zone of metaargillite occurs just southwest of
the locality.

References

SGU Ai115; *Berggrundskartan 23I Malå*



Outcrop at Ljustjärn.

Rakkejaurheden



Volcanic breccia

23J 6b

Northing: 7233920

Easting: 1657610

Distance: ca 30 km from Malå.

Drive towards Glommersträsk. Turn left ca 1 km after passing Skeppträsk River. Keep right and pass the Rakkejaur mine.

A ca 1 hectare clean outcrop on a clear cut area.



The outcrops consist of a monomict volcanic breccia. The breccia is matrix supported with clasts consisting of feldspar porphyry. Rakkejaurheden have been interpreted as a subvolcanic intrusion/lava with a texture that indicate an "in situ hyaloclastite", fragmentation of the lava through cooling.

References

Mink 99108; *Sluttekursion (??) 23J Norsjö*



Monomict volcanic breccia at Rakkejaurheden.

Räjarberget



Bedrock quarry

Owner: Lapis Polaris AB.

23I 6h

Northing: 7231030

Easting: 1636750

Distance: ca 7 km from Malå

Drive towards Kristineberg and turn right at Ö. Fårträsk
6 km from Malå.



The rock at Räjarberget is classified industrially as a homogenous dark grey rhyolite. In geological terms, dacite may be the most appropriate name. The overburden of the area is moderate, which facilitates the mining. The rock is mined and crushed on site, the normal annual production is estimated to be 60 000 tonnes. Lapis Polaris AB was granted a mining permit in 1998, and if the operation is maximized, the amount of mined rock is estimated to be 1 300 000 tonnes, which means 40 years of mining. Tests carried out show that the rock is of very good quality, making it suitable and allowed as macadam on heavily used roads. The Räjarberget bedrock quarry is also very important to the Municipality of Malå, because it covers a large part of the municipality's need and is today the only industrial bedrock quarry in the municipality.

References:

Länsstyrelsen i Västerbottens län
2330-1661/98



Rävaberget

Granite
23I 8h

Northing: 7243680
Easting: 1636800

Distance: ca 19 km from Malå.
Drive towards Arvidsjaur and turn left on Morkbergsvägen.

Several hectares with lots of granite outcrops and occasionally pegmatites and aplites. The granite is often strongly weathered to gravel.

The granite in this area belongs to the Revsunds-Adak suite. U-Pb dating not far from Rävaberget showed an age of 1778+/-16 Ma for a typical Revsund granite. The granite is light grey to light pink and relatively coarse grained. The main constituents are quartz, plagioclase, microcline and biotite. Strong weathering of the granite has occurred. North of Rävaberget the granite often contain large (>2 cm) microcline crystals. These crystals are pink and either rounded or more rectangular in shape.

References

SGU Ai115; *Berggrundskartan 23I Malå*



Granite outcrops at Rävaberget.

Setmyrliden

Conglomerate
24I 3c

Northing: 7265900
Easting: 1614250

Distance: ca 43 km from Malå.
Drive past Adak towards Slagnäs and turn left ca 1 km past Södra Skidnäs.

The outcrops consist of a red conglomerate. The sedimentary rocks in the area, belonging to the Ledefat group, are deposited on top of the Arvidsjaur group volcanites. The lower parts of the sediments consist of sandstone, tuffite and minor intercalations of conglomerate. The upper parts, displayed in the outcrops, consist of a polymict conglomerate. Rounded fragments derived from the underlying sedimentary rocks dominate the conglomerate.

References

SGU C564; *Rocks and stratigraphy of the Ledefat area, Västerbotten County, Northern Sweden*



Conglomerate outcrop at Setmyrliden.

Skellefte River



Sedimentary rocks in old river course
23J 6d

Northing: 7234900
Easting: 1665800

Distance: ca 38 km from Malå.
Drive towards Grundträsk and turn left towards Lainijaur and then turn right towards Skidberg. Turn left ca 1 km past Skidberg for the upstream part of old river coarse and right for the downstream part.

Sedimentary rocks in outcrop along the several km long old river course. At least three small waterfalls occur along this stretch of the river. The whole stretch is very beautiful and is an excellent lunch stop.

The outcrops consist of silt-sandstone, turbiditic sandstone and conglomerate. These sedimentary rocks are thought to mainly consist of volcanic material and occasionally grades into what can be described as volcanic conglomerate and breccias.

References

Mink 99108; *Sluttekursion (??) 23J Norsjö*
Rapporter och meddelanden nr 84 p.92-98;
Kartbladen 23J Norsjö



Outcrop along the old river course.

Småberg



Auto-brecciated lava with pillows
23J 8b

Northing: 7241375
Easting: 1655600

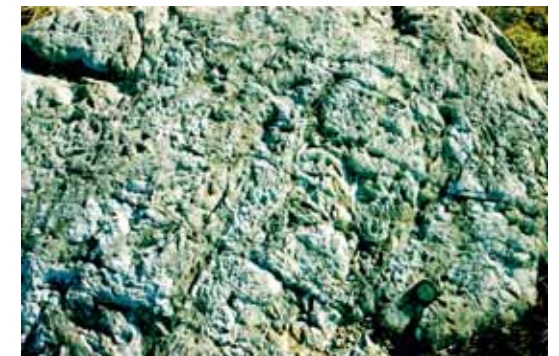
Distance: ca 25 km from Malå.
Drive towards Arvidsjaur, turn right towards Grundträsk and then left to Småberg.

Several outcrops over ca 2 hectares.

The outcrops contain a basaltic, auto-brecciated, lava with pillows. Fine grained laminated sediments located beneath the lava flow occurs towards the north.

References

Mink 99108; *Sluttekursion (??) 23J Norsjö*



Pillow lava at Småberg.

Södra Örnäs



Operating feldspar porphyry quarry
24H 6e

Northing: 7282090
Easting: 1571790

Distance: ca 105 km from Malå.
Drive to Sorsele and continue north on the south side of the river about 10 km and turn left at Örnäsudden.

Ca 1 hectare of stripped overburden and cleaned outcrops. Lapis Polaris AB should be contacted before a visit.

The quarry consists of a rhyolitic feldspar porphyry with potassic feldspar, plagioclase and quartz as the dominating minerals. The qualities of the rock are very good for use in road constructions.

References

Lapis Polaris AB; *Sorseleporfyr*



The feldspar porphyry quarry at Södra Örnäs.

Södra Örnäs



Closed granite quarry
24H 5e

Northing: 7279670
Easting: 1574040

Distance: ca 100 km from Malå.
Drive to Sorsele and continue north on the south side of the river about 10 km, and turn left at Örnäsudden.

Ca 1 hectare of stripped overburden and cleaned outcrops. Lots of boulders from the quarry occur in the area.

The rocks at Södra Örnäs consist of a medium grained, purple-red, Sorsele granite, occasionally containing greenish feldspar phenocrysts. The outcrops often contain very clear glaciation marks, joints, foliations, pegmatites and aplites. The quarry was in operation 1990-1991, but regarded as uneconomic due to problems with joints, colour variations and sawing problems.

Reverences

Natursten och industrimineral i Västerbotten; *Kommunerna Dorotea, Vilhelmina, Storuman och Sorsele*



The closed granite quarry at Södra Örnäs.

Tjamstan



Pillow lava
23I 6h

Northing: 7233000
Easting: 1639500

Distance: ca 3 km from Malå.
Drive south from Malå and turn left towards Brun-
näs.

Several small outcrops occur in the area.



Rocks consist basaltic-andesitic
vilcanoclastites belonging to the
so called Tjamstan formation.
The Tjamstan formation is lo-
cated to the top of the Skellefte
group vulcanites. Well preserved
pillow lava and graded bedding
occur together with thin dacitic
intercalations.

References

SGU Ai 15; *Berggrundskartan*
23I Malå



Pillow lava in outcrop at Tjamstan.

Tjamstan



Basaltic-andesitic volcanoclastites
23I 6h

Northing: 7233750
Easting: 1638750

Distance: ca 500 m from Malå.
Drive or walk from Laven to the top of Tjamstan.

Lots of outcrops around the top of Tjamstan.

Rocks consist of basaltic-andesitic volcanoclastites.
Outcrops with synvolcanic flows and graded bed-
ding occur around the "kåta". There is a polymict
breccia at the Nilagubbe statue and a monomict
breccia-sandstone at the top of the northern ski
slope.

References

SGU Ai115; *Berggrundskartan* 23I Malå



Graded bedding at the top of Tjamstan.

Viterliden



Glacial striation

Northing: 7220715
Easting: 1632110

Distance: 27 km from Malå.
Drive towards Skellefteå, turn right towards Kristineberg after 12 km. After 10 km turn right towards Kristineberg. Turn left at the first road (the road to the ski slope) in Kristineberg and drive to the roads end.

Close to the building at the left side of the road there is a wide outcrop area.
Here you can see several glacial striations over the whole surface.



Viterliden



Glacial striation

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Easting: 1632110

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Drive towards Skellefteå, turn right towards Kristineberg after 12 km. After 10 km turn right towards Kristineberg. Turn left at the first road (the road to the ski slope) in Kristineberg and drive to the roads end.

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Prospects, closed mines etc.

- Skiråsen Au prospect
- Blaiken (Ersmarksberget) Zn-Au prospect
- Granlunda Closed open pit Zn-Cu-Ag mine
- Gråberget (Elviramalmen) Cu prospect
- Holmtjärn Closed Au-Ag-Cu-As mine
- Kristineberg Operating Cu-Zn mine
- Lainejaur Closed Ni-Cu mine
- Malådalen Cu-Mo prospect
- Njuggträskliden Ni-Cu-Co-PGE prospect
- Nottjärn Cu-Mo-Au prospect
- Orrträsket Au prospect
- Pleutajokk U prospect
- Rakkejaur Closed Cu-Zn mine
- Storträsket Au-W-Mo-Cu prospect
- Svärträsk W prospect
- Säter Andalusite prospect
- Tvåttjärnmyran W-Sn prospect
- Vargbäcken Au prospect
- Vinliden (Fårträsk) Au prospect
- Åkerlandet Zn prospect
- Örträsk (Eastern Bjurfors ore) Closed Cu mine
- Östra Högkulla Closed Cu-Zn mine

Geological sites

- Aspnäs Closed conglomerate quarry
- Borup Limestone deposit
- Brännäs Gabbro
- Gimegolts Kursu valley
- Granbergsliden Fire fountain deposit
- Järvselet Geobothany
- Korpkullen Dimension stone quarry
- Laggträsket Geological path
- Ljustjärn Porphyry
- Rakkejaurheden Volcanic breccia
- Räjarberget Bedrock quarry
- Rävaberget Granite
- Setmyrliden Conglomerate
- Skellefte River Sedimentary rocks in old river course
- Småberg Pillow lava
- Södra Örnäs Operating feldspar porphyry quarry
- Södra Örnäs Closed granite quarry
- Tjamstan Pillow lava
- Tjamstan Basaltic-andesitic volcanoclastites
- Viterliden Glacial striae

Front page shows the Rakkejaur head frame now reconstructed in Malå for Georange.

Photo: B. Filén

For map illustrations in this guide applies: Ur GSD-Väggkartan © Lantmäteriverket Gävle 2003.

Medgivande M2005/4621. Gäller tom 2006-12-31.

Exkursion sites near Malå

1. Barsele (Skiråsen) Au prospect
2. Blaiken (Ersmarksberget) Zn-Au prospect
3. Granlunda Closed open pit Zn-Cu-Ag mine
4. Gråberget (Elviramalmen) Cu prospect
5. Holmtjärn Closed Au-Ag-Cu-As mine
6. Kristineberg Operating Cu-Zn mine
7. Lainejaur Closed Ni-Cu mine
8. Malådalen Cu-Mo prospect
9. Njuggträskliden Ni-Cu-Co-PGE prospect
10. Nottjärn Cu-Mo-Au prospect
11. Orrträsket Au prospect
12. Pleutajokk U prospect
13. Rakkejaur Closed Cu-Zn mine
14. Skiråsen Au prospect
15. Storträsket Au-W-Mo-Cu prospect
16. Svärträsk W prospect
17. Säter Andalusite prospect
18. Tvåttjärnmyran W-Sn prospect
19. Vargbäcken Au prospect
20. Vinliden (Fårträsk) Au prospect
21. Åkerlandet Zn prospect
22. Örträsk (Eastern Bjurfors ore) Closed Cu mine
23. Östra Högkulla Closed Cu-Zn mine
24. Aspnäs Closed conglomerate quarry
25. Borup Limestone deposit
26. Brännäs Gabbro
27. Gimegolts Kursu valley
28. Granbergsliden Fire fountain deposit
29. Järvselet Geobothany
30. Korpkullen Dimension stone quarry
31. Laggträsket Geological path
32. Ljustjärn Porphyry
33. Rakkejaurheden Volcanic breccia
34. Räjarberget Bedrock quarry
35. Rävaberget Granite
36. Setmyrliden Conglomerate
37. Skellefte River Sedimentary rocks in old river course
38. Småberg Pillow lava
39. Södra Örnäs Closed granite quarry
40. Södra Örnäs Operating feldspar porphyry quarry
41. Tjamstan Basaltic-andesitic volcanoclastites
42. Tjamstan Pillow lava
43. Viterliden Glacial striae

Excursion sites in Northern Västerbotten

