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6 August 2015

AURASIAN MINERALS - ASSESSMENT OF VIET-LAO MINING'S VANGTAT GOLD MINE AND EXPLORATION POTENTIAL, ATTAPEU PROVINCE, LAO PDR

- Viet-Lao Mining JSC Ltd in partnership with the Ministry of Lao National Defence has two Mineral Concessions in Attapeu Province. The Vangtat Mine is held under an Mining License #6 encompassing 3km^2 with a surrounding Prospecting License #62 covering an additional 250km^2.

- Vangtat is a major orogenic style, high grade, lode gold deposit. Mineralization is strongly developed in four sub-parallel quartz-sulphide-gold veins that are developed over a width of 200-250m, a strike length >2500m, and they extend to >125m vertically. The full extent of the Vangtat gold deposits is unknown and mineralisation remains open in all directions.

- The Main Lode Zone comprising the TQ1 and TQ2 veins is oxidized to >120m depth and contains free milling coarser gold whereas the Western Lode zone comprising the TQ3 and TQ4 veins is oxidized to <40m depth and fine grained gold is primarily encapsulated in pyrite and chalcopyrite and within the quartz gangue.

- Viet-Lao Mining has estimated "ore Reserves" of 7754kg gold and "Inferred Resources" of 6000kg gold for the Vangtat gold deposits based on Vietnamese Reporting Categories which are not considered JORC compliant. Sampling by Aurasian returned high grades of 23.8g/t Au + 1.08% Cu and 42.8g/t Au + 0.23% As.

- Mining operations at Vangtat have been conducted by open pit methods and due to the deeply weathered wallrocks permits free digging of the orebody to the current mining depth. Mining below the base of oxidation will require drilling and blasting.

- Conventional crushing, milling to 90% passing -75 µm (-200#) and carbon-in-leach extraction could probably significantly improve gold recoveries and should be tested.

- There is excellent potential to increase the size of the resource base at Vangtat by completing a drilling campaign to delineate a resource capable of supporting a minimum ten year mining operation based on production rates of 100k ozs gold/year.

- The Au III-1 Prospect 7km NNE of Vangtat includes 6.5m @ 24.4g/t Au in trench G.01 and the Au-III-3 prospect located 5km south of Vangtat has reported values to 3.4g/t which reinforces the prospectivity of the district to host additional high grade orogenic lode deposits.

Attapeu District

The Attapeu District lies at the southern portion of the Truong Son belt and was defined by NAAL in the mid 1990s and more recently by Aurasian Minerals as a high priority mineralised district based on its prospective geology and numerous recorded alluvial and hard rock gold localities. The discovery of the Congyong porphyry related gold deposit and the development of the high grade Vangtat orogenic style mesothermal gold deposit confirm the exploration potential of the Attapeu District and its status as an emerging mineralised district within the Truong Son Belt.

The alluvial gold occurrences in the Attapeu District are probably derived from Permo-Triassic intrusive related epithermal and porphyry style deposits or from Palaeozoic metamorphic rocks hosting orogenic style mesothermal gold deposits in the Annam Mountains along the Vietnam-Lao PDR border, Figure 1.

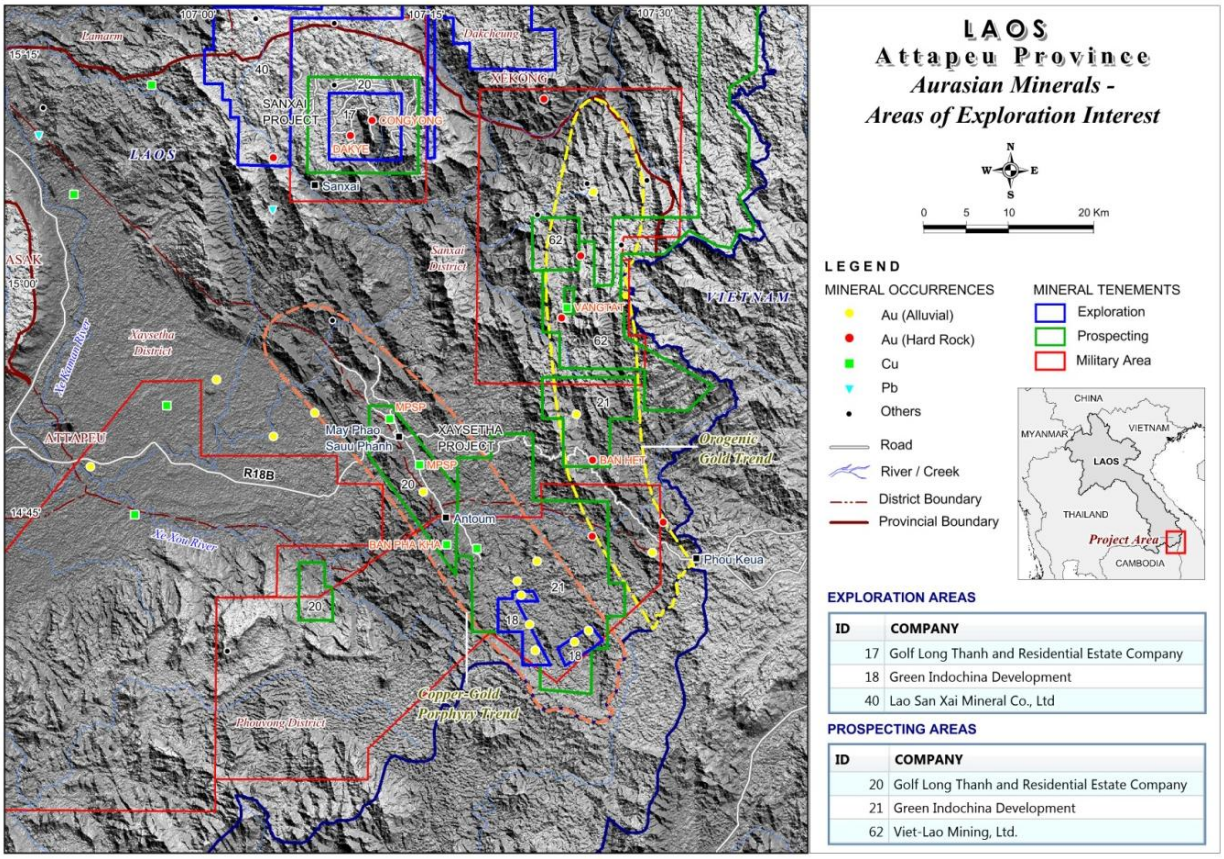

Figure 1: Location of Exploration Projects, Attapeu Province

The Attapeu District area is drained by the Xe Kaman and Xe Xou rivers which rise along the Laos-Vietnam border and flow westward, joining to become the Xe Kong river which is a major tributary of the Mekong River. The climate is typical tropical monsoonal with a hot, wet season from March to May, a rainy season from June to October and a cooler, dry season from November until February.

Road access is limited to the sealed, all weather R18B National Highway which links the Provincial capital Attapeu City with Vietnam. Secondary roads accessing the Vangtat mine site from Xe Xou are unsealed and often become impassable in the wet season. The Vangtat mine site is situated in an area of mountainous primary jungle at an elevation of 1000m to 1250m ASL.

Aurasian Minerals Field Visit

A second field visit to Attapeu to evaluate Viet-Lao Mining's Vangtat Gold Mine was undertaken by PJW and Lao Geologist Khamhoung (ex-Newmont and Oxiana) from 26/5/15 to 27/5/15 as part of a broader assessment of the region. Logistic support for the field trip was provided by MCRS which also provides services for RT/Mitsui's Sanxai exploration camp in Northern Attapeu Province and the trip was completed without any vehicle or field safety incidents.

Viet-Lao Mining Ltd's Mineral Concessions

Viet-Lao Mining JSC Ltd in partnership with the Ministry of Lao National Defense has two Mineral Concessions in Attapeu Province. The Vangtat Mine is held under an Mining License #6 encompassing 3km^2 with a surrounding Prospecting License #62 covering an additional 250km^2. The Vangtat Mine area is accessed by the sealed R18B Highway from Attapeu City to Xe Xou village and then by unsealed gravel road for 55km to site with the drive taking approximately 3.5-4 hours.

District Geology

The Vangtat District is located within a northwest trending fold belt dominated by Lower Palaeozoic schists and gneisses intruded by Upper Palaeozoic granitoids. The belt is interpreted as a southerly splay of the Truong Son fold belt that formed as a result of collision between the Kontum Block with the South China Craton. The last significant folding event in the Truong Son belt probably occurred during the Permian.

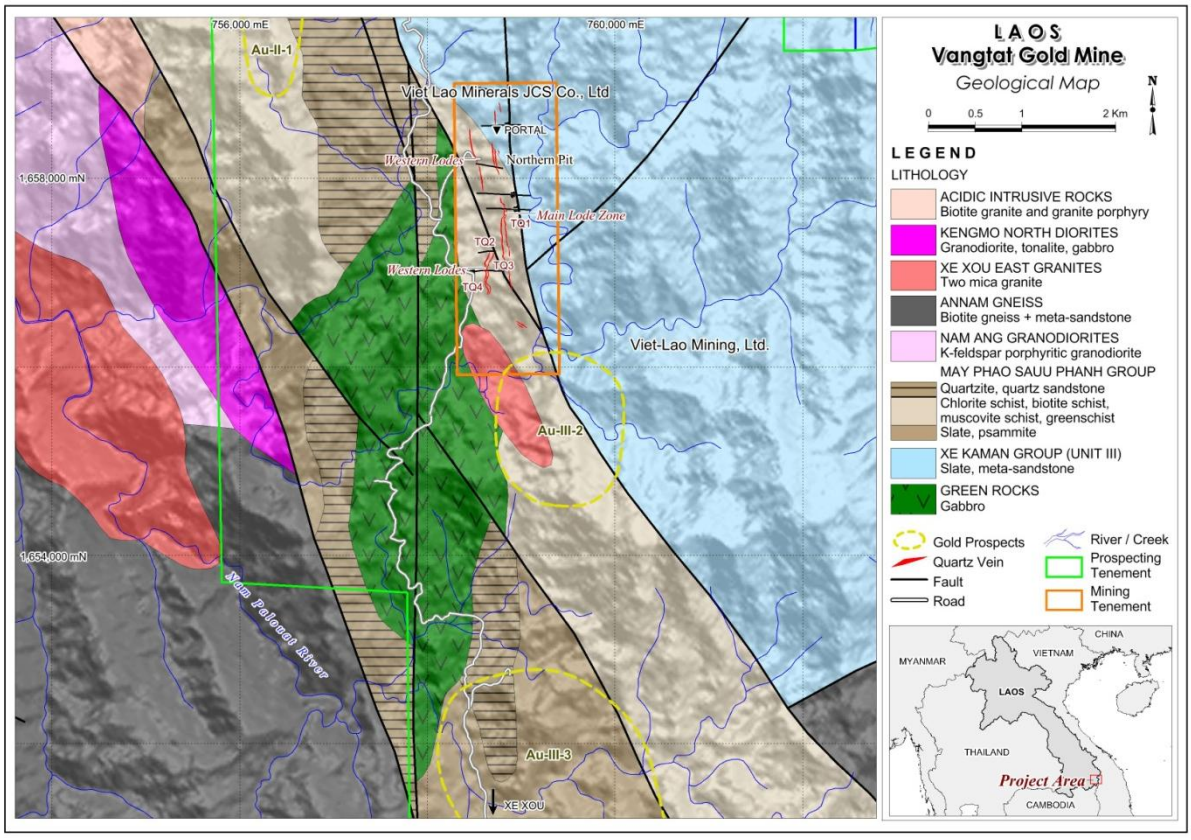

Figure 2: Vangtat District Geological Map

The stratigraphic units in the Vangtat District generally young to the west although there is considerable debate on the age of the Annam Gneiss unit with the long held view that these are of Proterozoic age being questioned by recent dating which yielded Permo-Triassic ages in the neighbouring Vietnamese portion of the Kontum Massif.

The Cambrian to Ordovician Xe Kaman Group Unit III is considered the oldest stratigraphic unit in the district and comprises slate, pelitic schist, greenschist and quartzite and probably correlates with the Upper Dak Long Formation in Vietnam. The unit is elongated NW-SE shape and bounded to the west by major shear zones extending southeast to the Xe Xou River.

The Ordovician to Silurian May Phao Sauu Phanh (MPSP) Group was established during the JICA-DGEO mapping project and consists of interbedded sandstone and mudstone, slate, muscovite-quartz schist, biotite schist, chlorite schist and quartzite. Biotite schist and greenschist is the dominant facies in the highly sheared area close to the Vangtat mine. The MPSP Group outcrops along a NW-SE trend similar to the Xe Kaman Group and both are affected by steep schistocity paralleling the trend. The Group is intruded by Devonian and younger granitoids and is in sheared contact with the Xe Kaman Group.

Potassic feldspar porphyryitic granodiorite and hornblende-biotite granodiorite of the Nam Ang Granodiorites outcrop in the western portion of the Vangtat District along the Nam Palouat River. The intrusives are often highly sheared proximal to major fault zones and often epidotized. The Nam Ang Granodiorites have sheared contacts with the MPSP Group but are intruded by the younger, Carboniferous Xe Xou East Granites. JICA quote an Early Devonian K-Ar age for the Nam Ang Granodiorites of 396.6±10.4 Ma.

Leucocratic, two mica granites of the Xe Xou East Granites suite are distributed along a NW-SE trending belt close to the Vangtat mine that is spatially related with the Annam Gneisses and the MPSP Group. The larger stock outcrops in the Nam Palouat River approximately 5km west of the Vangtat mine. There is a marked spatial relationship between the Xe Xou East Granites and known copper and gold mineralisation in the Vangtat District. The Xe Xou East Granites intrude the MPSP Group, the Annam Gneisses and the Nam Ang Granodiorites. JICA quote a Late Carboniferous K-Ar age for the Xe Xou East Granites Suite of 301.5±7.7 Ma.

A narrow, NW-SE trending zone of medium grained diorite and granodiorite of the Kengmo North Diorites is exposed 4km west of Vangtat mine. It appears to be fault bounded against the MPSP Group but intrudes the Nam Ang Granodiorites. JICA reports a Late Permian K-Ar age for the Kengmo North Diorites of 252.0±6.5 Ma. There is a small outcrop of biotite granite immediately north of the Kengmo North Diorites that is inferred to be of Triassic age possibly representing the youngest intrusive suite in the Vangtat District.

Mapped "Green Rocks" of unknown age outcrop immediately south of Vangtat mine over a 5km x 1.5km area. The "Green Rocks" comprise metabasalt and schistose amphibolite apparently intruding quartzite and slate of the MPSP Group and hence must be younger than Silurian. The schistocity of the "Green Rocks" trends N-S paralleling a major fault which is in contrast to the dominant NW-SE regional trend. The amphibolite locally hosts quartz veins and disseminated malachite. A small stock of Xe Xou East Granites appears to intrude the "Green Rocks". The amphibolite is strongly altered to tremolite and actinolite accompanied by minor sericite, epidote, carbonate and chlorite. Vietnamese geologists have compared the Green Rocks to the mafic Chaval Complex in Vietnam which has been dated as Early Triassic yielding a Rb-Sr age of 243Ma.

The Annam Gneisses are distributed in an elongate strip from the northwest to the southeast of the Vangtat mine. The rocks consist of medium to coarse grained biotite gneiss,

hornblende-biotite gneiss, garnet-biotite gneiss and locally biotite-graphite gneiss. Close to the boundaries of the Annam Gneisses, the rock facies commonly change from gneiss to sheared cataclastite and mylonite and its stratigraphic relationships cannot be determined. The Annam Gneisses were conventionally assigned a Proterozoic age, however they are spatially associated with the Ordovician to Silurian MPSP Group. Age determinations for gneisses outcropping in neighbouring Vietnam have been undertaken and yielded a Permo-Triassic age which is considerably younger than previously thought. There is a possibility that the orogenic style gold mineralisation present at Vangtat is coeval with regional gneiss development, and deep seated granite and gabbro emplacement during the Permo-Triassic.

The Vangtat District is situated in a complex, NNW trending fold belt that affects the entire Palaeozoic succession with the Vangtat mine apparently situated within an anticlinal fold structure with flanking synclines to the west and east. The Vangtat District is traversed by several well defined fault zones of which the most dominant appear to be oriented NW-SE and manifested as mylonitic, ductile shear zones often developed at the margins of granitic intrusives with Lower Palaeozoic schists. The sense of fault movement is not well constrained but regional considerations suggest that NW-SE trending faults may exhibit a dextral strike slip component.

A major N-S trending fault zone imparted a strong schistosity in all lithologies and in the vicinity of the Vangtat mine widespread brittle shearing as evidenced by the development of cataclastite and gouge accompanied by auriferous quartz-sulphide veining. NE-SW trending faults and fractures are mainly distributed in the eastern portion of the Vangtat District and transect Palaeozoic and Triassic strata and also offset the earlier NW-SE and N-S trending faults in places. The complex, interrelated history of folding and faulting created favourable conditions for the subsequent development of orogenic style, mesothermal gold deposits.

Vangtat Gold Mine

Auriferous quartz-sulphide veins were originally discovered by prospectors and subsequently a small scale mining operation was developed by the Lao PDR's National Army in 2007. Viet-Lao Mining JSC Ltd in partnership with the Ministry of Lao National Defense entered into Exploration and Survey and Mineral Processing Agreements leading to a major expansion of the mining operation from 2012 to 2013 with several open pits developed over a 2000m x 400m area and a milling complex constructed, Figure 3.

Exploration History

The Vangtat quartz-sulphide-gold mineralisation has been evaluated by Viet-Lao Mining Ltd Survey in accordance with procedures issued by the Department of Geology and Mineral of Vietnam. The exploration programme included detailed 1:2000 scale geological mapping over an area of 3km^2, clearing and channel sampling of outcrops, trenching, mapping and sampling of artisanal adits, an Induced Polarisation-Resistivity (IP-R) geophysical survey and drilling of 50 shallow diamond core drill holes, Table 1. The exploration programme delineated four economically important quartz-sulphide-gold lodes developed predominately within the Greenschist and Chloritic Schist members of the Ordovician to Silurian May Phao Sauu Phanh (MPSP) Group.

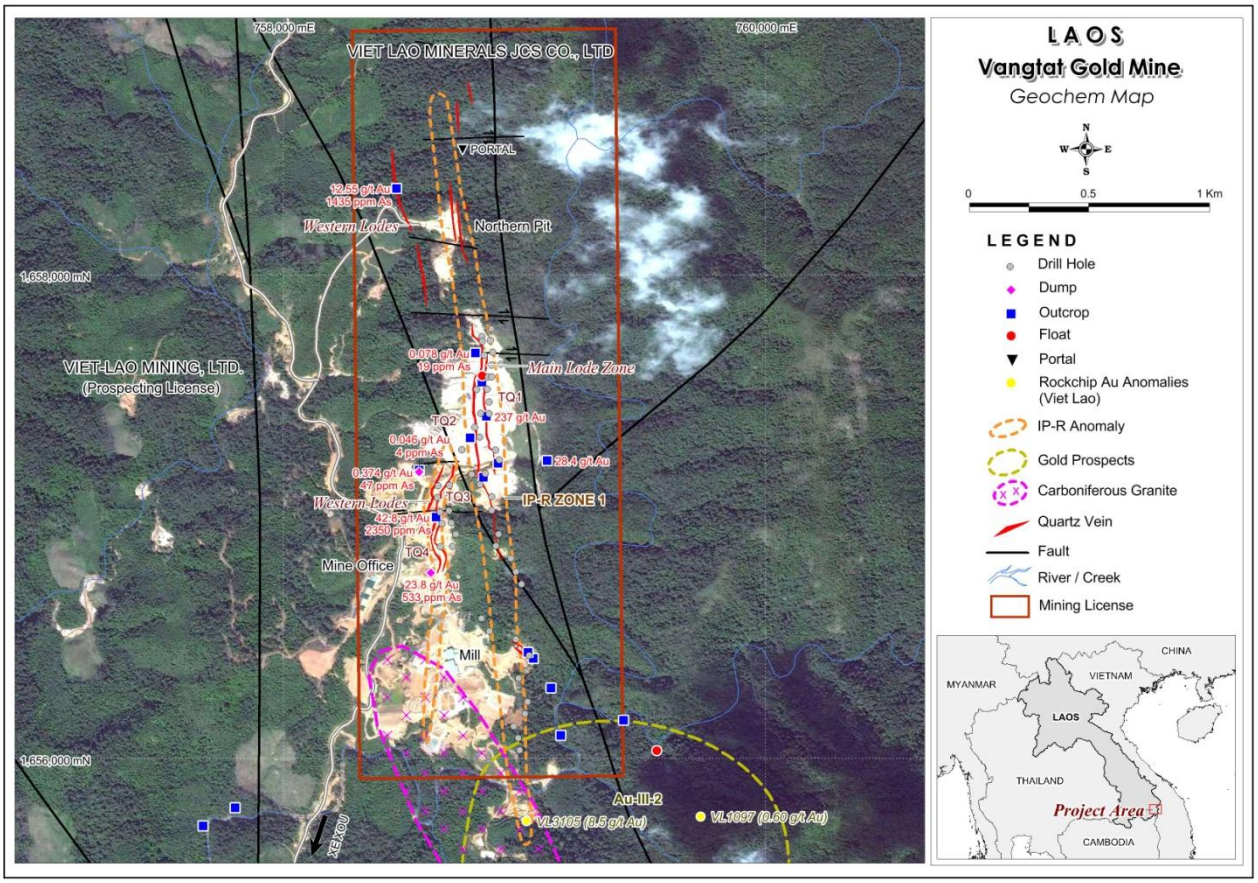

Figure 3: Vangtat Gold Mine Summary Map

Table 1 - Summary Exploration Methods

Technique	Holes	Km^2	Metres	Line Km	Samples
Geological Mapping		3.0			
Outcrop Clearing			250		80
Adit Mapping			363		75
Diamond Drilling	50		3463		561
IP-R Survey		2.1		33	
Trenching			363		30
Geotechnical					80

Geophysical Surveys

Viet-Lao Mining Ltd completed an Induced Polarisation-Resistivity (IP-R) geophysical survey during 2008 to supplement drilling in determining the location and depth of auriferous gold lode zones and to delineate lithological boundaries and fault zones.

The IP-R survey appears to have been undertaken over a 3km x 0.7km area centred on the known gold lodes with line spacing of 100m closed down to 50m in the vicinity of the original mine area. A frequency domain system was applied utilizing a pole-dipole electrode configuration with 50m spacing reading to n=8. It is probable that depth penetration would be <200m. Over quartz vein zones, electrode spacing was reduced to 10m. The raw data was reduced and interpreted as Apparent Resistivity and % Frequency Effect profiles and pseudo-sections. The results of the survey indicate that:

- Quartzites of the Xe Kaman Group underlie the mountainous, eastern side of the survey grid exhibit the highest Apparent Resistivity values ranging from 3000Ωm to 30,000Ωm and the Frequency Effect varying from 0.2 % to 1.5 %.

- Greenschist and quartz-sericite schist of the MPSP Group are characterised by the lowest values of Apparent Resistivity ranging from 30Ωm to 300 Ωm and low Frequency Effect values from 0.2 % to 1 %.

- Hornfelsed schist has high values of Apparent Resistivity from 1100 Ωm to 7000Ωm similar to that of intrusives and high Frequency Effect values of 1% to 2%, possibly related to sulphides accumulations.

- The Carboniferous granite underlying the SW of the survey grid is characterised by high Apparent Resistivity varying from 800 Ωm to 10,000Ωm, and high Frequency Effect values ranging from 0.8% to 5%.

- Faults are generally characterized by erratically high amplitude Frequency Effect values possibly due to clayey or graphitic fault gouge development.

- Quartz-sulphide-gold lode zones are readily discriminated from host rocks. Values of apparent resistivity range from 300Ωm to 2500 Ωm, and high Frequency Effect values generally vary from 1% to 5%.There are some reportedly discrete zones of much higher % Frequency Effect related to very sulphidic quartz-sulphide-gold lodes.

Two major anomalous zones reflecting the probable presense of quartz-sulphide-gold lodes were delineated by the Induced Polarisation-Resistivity survey, Figure X:

- **Zone 1** - located close to a lithological contact between quartzites and schists zone and appears to dip eastwards. The anomalous zone is coincident with the Main Lode zone and trends N-S continuously for 3km from 1,655,750N to 1,658,750N with an estimated thickness of 50m-150m and a depth extent of at least 150m down dip.

- **Zone 2** - trends sub-parallel with and approximately 200m west of zone 1. The anomalous zone is coincident with the Western Lode zone and traceable for 1.15km from 1,656,000N to 1,657,150N. Its width and estimated depth extent vary considerably and it appears attenuated within the area of Carboniferous granite.

Diamond Drilling

Viet-Lao Mining completed fifty, vertical diamond drill holes for an aggregate 3463m during the evaluation of the Vangtat gold deposits. Hole depths were generally in the range 50-60m with only six holes reaching 100m depth and the deepest being 125m. The drilling tested the central portions of the TQ1, TQ2, TQ3 and TQ4 quartz-sulphide gold lodes and the southern extension of the TQ1 and TQ2 veins. The high grade TQ3 and TQ4 quartz-sulphide lodes probably extend south beneath the mill site and do not appear to have been drilled. The northern strike extensions of all the major veins do not appear to have been drilled based on available mine maps, Figure 3. It is understood that there has been no deep drilling conducted at Vangtat to date. Several drill holes were abandoned due to technical difficulties and the equipment and techniques were probably inadequate.

The cores were placed in wooden boxes and reportedly logged in detail, then photographed and shipped to Hanoi for processing and analysis. The core is described as being cut into quarters with two opposing quarter core samples composited for assay rather than a more conventional half core sample. Considering the style of high grade, orogenic gold

mineralisation, the current drilling metreage is considered insufficient to confidently define the grade, geometry and continuity of the vein systems.

Figure 4: Diamond Drilling Operations Vangtat Mine

Mineralisation

Vangtat is a major orogenic style, high grade, lode gold deposit. Gold mineralization is strongly developed in four sub-parallel quartz-sulphide veins that strike north-south and dip approximately 55° to 75° to the east. The lodes are developed over a width of 200-250m, a strike length >2500m, and they extend to >125m vertically. The full extent of the Vangtat gold deposits is unknown and mineralisation remains open in all directions. Major orogenic lode deposits comparable to Vangtat often have depth extents >1000m with steeply plunging ore shoots typically developed within flexure zones along veins or where veins traverse wallrocks of contrasting rheological character. Structural controls to ore shoot development within hypogene gold mineralisation at Vangtat have not been recognised.

Figure 5: Western Lode Zone - Quartz-sulphide-gold veins TQ3 + TQ4

Exploration has delineated four economically important quartz-sulphide-gold lodes developed predominately within highly strained Greenschist and Chloritic Schist members of the Ordovician to Silurian May Phao Sauu Phanh (MPSP) Group. The Main Lode Zone comprises the TQ1 and TQ2 veins and the sub-parallel, Western Lode Zone developed 200m to the west comprises the TQ3 and TQ4 veins. The gold veins range from 0.5m to >10m in width and the mineralization styles appear to be dominated by laminated crack-seal veins and sigmoidal vein arrays indicative of incremental development within brittle-ductile shear zones, Figure 5. The Vangtat gold lodes exhibit a spatial relationship with a Carboniferous granite that may reflect a locally favourable structural trap or possibly a genetic association. An envelope of intense silica-sericite and minor chloritic wallrock alteration accompanies the gold mineralisation and hosts limited quartz stringer development peripheral to the main quartz lodes.

The Main Lode Zone comprising the TQ1 and TQ2 veins is oxidized to >120m depth and contains free milling coarser gold whereas the Western Lode zone comprising the TQ3 and TQ4 veins is oxidized to <40m depth and fine grained gold is primarily encapsulated in pyrite and chalcopyrite and within the quartz gangue. The contrasting depth of supergene profile development is due to the fact that pre-mining the TQ1 and TQ2 veins outcropped at a much higher elevation relative to the TQ3 and TQ4 veins.

Figure 6: Main Lode Zone - Vein TQ1

The Western Lode zone TQ3 and TQ4 veins contain 5-25% sulphide minerals, predominately pyrite with <1% chalcopyrite generally although higher grade mineralisation can contain <5% chalcopyrite with sample RC843586 assaying 23.8g/t Au + 1.08% Cu. Gold mineralisation is associated with elevated arsenic occurring as <1% arsenopyrite with sample RC843586 assaying 42.8g/t Au + 0.23% As. The Au:Ag ratio in the hypogene mineralisation ranges 3-4 in Aurasian's samples.

Sulphide minerals are virtually absent in the deeply oxidised Eastern Lode Zone veins TQ1 and TQ2 exposed by mining and coarser, particulate gold is associated with supergene quartz-hematite-goethite development. JICA sampled oxidised quartz veins in artisanal

working which yielded assay values of 3m @ 28g/t Au and 2m @ 237g/t Au. Arsenic and copper are generally leached in the oxide zone and not associated with gold mineralisation.

JICA reports fluid inclusion homogenization temperatures of 200°C for the Vangtat quartz-sulphide-gold veins which is mesothermal. The veins are emplaced within a greenschist metamorphic facies within second order brittle to ductile shear structures related to regional tectonism. The veins exhibit a consistent association with arsenic, antimony and to a lesser extent copper and bismuth. These characteristics suggest that gold mineralisation at Vangtat is developed within the optimal "Mesozonal" position in the Orogenic Gold Deposit continuum model and may indicate considerable depth potential.

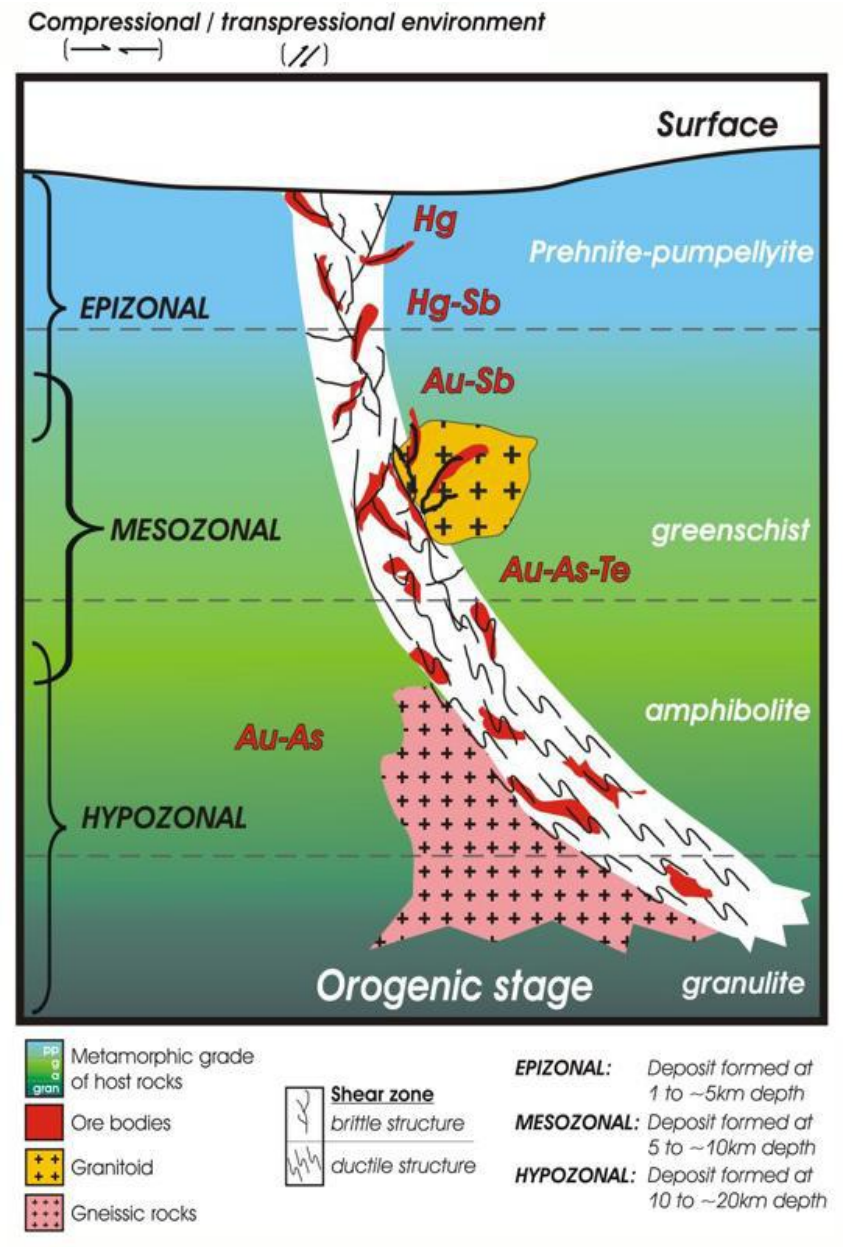

Figure 7: Orogenic Gold Continuum Model

Resource Estimate

Viet-Lao Mining has estimated "ore Reserves" and Inferred Resources " for the Vangtat gold deposits based on Vietnamese Reporting Categories which are not considered JORC compliant. Diamond drillhole depths generally range 50-60m with only six holes reaching 100m depth and the deepest being 125m, hence Viet-Lao Mining has only quoted "Ore Reserves" to 100m depth. Four quartz-sulphide-gold veins, TQ1, TQ2, TQ3 and TQ4 are included in the current resource estimate. A programme of deeper resource definition drilling has been proposed but has not been implemented.

A minimum cut-off grade of 0.6g/t Au is used when defining mineralized envelopes within which economic block have been defined grading >3g/t Au. Orebody cross sections have been developed and utilised to calculate the cross sectional area of mineralisation and extrapolated from section to section along strike. Three categories of resource have been estimated with a an aggregate gold content of 13754kg or 0.44m ozs.

- Category 122 Reserves - require a minimum drillhole density of 40-60m along strike and 40-60m down the plane of dip of the deposit and <25m extrapolation from a sample point. Category 122 Reserve blocks were calculated for ore bodies with well defined structure and grade include four blocks on auriferous quartz lodes TQ1, TQ2 and TQ4.

- Category 333 Reserves - are calculated by extrapolating <50m along strike and <50m down dip from defined Category 122 reserve blocks. Category 333 reserve blocks were delineated for gold lodes with defined structure and a moderate number of sample points within the TQ1, TQ2, TQ3 and TQ4 quartz veins.

- Category 334a Inferred Resources - are calculated for the north and south strike extensions of the TQ1 and TQ2 quartz-sulphide-gold lodes and the northern extension of the TQ3 and TQ4 veins based on grades and widths estimated from trench, outcrop and localized adit sample data and on IP-R anomalies. Inferred Resources from 100m to 200m depth for the TQ1, TQ2 and TQ4 quartz lodes have been estimated by extrapolation down the plane of dip as there is no existing drillhole data and applying a grade of 50% of the estimated grade from 0-100m depth.

Table 2: Estimate Resources Vangtat Gold Mine

Resource Category	Blocks	Gold Kg
Reserve 122	TQ1-K1 TQ1-K2 TQ2-K3 TQ4-K4	3465
Reserve 333	TQ1-K5 TQ1-K6 TQ1-K7 TQ2-K8 TQ2-K9 TQ2-K10 TQ3-K12 TQ4-K13 TQ4-K14 TQ4-K15	4289
Aggregate Reserves		7754
Inferred Resources 334a		6000
Total Reserve + Resource		**13754**

A 3-D wireframe interpretation of the Vangtat mineralisation should be developed to more efficiently examine the TQ1, TQ2, TQ3 and TQ4 lode structures, geological controls to mineralisation, grade distribution and ore shoot development to guide mine planning.

Mining

Mining operations at Vangtat have been conducted primarily by open pit methods and small scale artisanal adits. The mineralisation within the Main Lode zone is oxidised and leached to a depth of approximately 125m. The deeply weathered quartz-sericite schist and quartzite wallrocks have low mechanical strength and RQD values due to presence of numerous shear zones and fractures which permits free digging of the orebody to the current mining depth. Only large residual blocks of more competent quartz vein material require drilling and blasting prior to loading and hauling. The Vangtat operation is reportedly only mining high grade ore within the Main Lode Zone and oxidized Western Lode Zone with intervening lower grade stringer zones are apparently treated as waste.

Figure 8: Mining Operations Main Pit - Main Lode Zone

Ore and waste is dug and loaded by relatively small Kobelco and Komatsu excavators and hauled to the mill, leach pads or dumps by ordinary twin axle road trucks with estimated payload capacity of 25-30 tonnes. Daily mine production is not known. Mining operations are encountering significant technical issues with increasing depth:

- The Western Lode Zone has been mined below the base of oxidation and the orebody and wallrocks are considerably harder and will require drilling and blasting

- Open pit operations are increasingly compromised by groundwater ingress and will require either direct pumping or the development of bores and pumping to draw down the water table prior to mining.

- The low RQD value of quartzite and sericite-schist comprising the eastern high wall of the Main Pit creates zone of instability resulting in rock falls. If open pit operations are extended to depth, a pit wall push back and benching to produce a stable pit wall is necessary

- The high grade quartz lodes at Vangtat could be extracted using the Longitudinal Sublevel Retreat Underground Mining method with both paste and waste backfill in order to maximize the extraction of the ore and reduce the surface footprint required for tailings disposal.

- Underground access to the Vangtat deposit should be via a main decline from the surface rather than an adit and utilise rubber-tyred mechanized equipment to maximize production and provide flexibility to the underground operations The main decline will be connected by cross-cuts to sublevels providing access to the mineralized TQ1, TQ2, TQ3 and TQ4 veins.

Metallurgical Characteristics

Ore dressing and beneficiation is primarily achieved by grinding and gravity separation and sulphide flotation. However the flotation cells were reportedly inoperative during Aurasian's site visit. Simple heap leaching of crushed oxide ore is being undertaken though the technique is not particularly efficient considering the monsoonal rainfall and uncontrolled water ingress to the leach pad.

Figure 9: Small scale crushing and leaching of oxide gold ore

Viet-Lao Mining commissioned metallurgical studies at the Vietnam (Minerals) Dressing Association – Vietnam National Centre of Science and Technology on two large composite ore samples from Vangtat mine.

1) 240kg sample derived from the oxidised Main Lode Zone TQ2 quartz lode which assayed 9.38g/t Au

2) 200kg sample from the TQ3 quartz-sulphide vein within the Western Lode zone assaying 14.2g/t Au

In order to characterise the ore types and establish the gold deportment, multi-element ICPMS scans, mineragraphic and petrographic studies were undertaken. In addition studies on gold liberation and gravity separation were undertaken. The results of the studies confirmed that:

- Gold in the TQ3 quartz sulphide vein sample is fine to very fine-grained type and occluded in pyrite and also encapsulated in quartz.

- Gold within the oxidised TQ2 quartz vein sample is disseminated within limonite derived from pyrite or possibly formed from colloidal solution.

- Gravity separation was shown to be an effective dressing method for relatively coarse-grained gold in oxide ore but far less effective for fine-grained hypogene gold occluded within sulphides

- It was concluded conclusion that it is impossible to use gravity separation to produce a concentrate of high grade and acceptable recovery.

- A study on optimizing the conditions for the recovery of gold by flotation produced results of 67-68% gold recovery for a sample from the TQ2 quartz-limonite-hematite vein.

- A conventional crushing, milling to 90% passing -75 µm (-200#) and carbon-in-leach gold extraction flow sheet could probably significantly improve gold recoveries and should be tested.

Vangtat Exploration Potential

The Vangtat quartz-gold lodes extend >2500m along strike and extend to >125m vertically but only been explored by fifty, vertical diamond drill holes for an aggregate 3463m. Drilling has focussed on the central portions of the TQ1, TQ2, TQ3 and TQ4 veins support the current mining operation. Hole depths were generally constrained in the range 50-60m with only six holes reaching 100m depth and the deepest being 125m. There is excellent potential to increase the size of the existing resource base by completing a drilling campaign to delineate a resource capable of supporting a minimum ten year mining operation based on production rates of 100k ozs gold per year.

- A systematic diamond drilling programme is immediately required to determine the size, geometry and grade of the TQ1, TQ2, TQ3 and TQ4 quartz lodes to a depth of 500m below the existing mining operation and define an inferred resource. The results of this drilling would form the basis of a Pre-feasibility study aimed at optimizing future mining development of the Vangtat gold deposits. Increased confidence in grade distribution and the influence of outlier gold values can be assessed if multiple intercepts of the target veins are obtained from each drillhole by using appropriate directional drilling techniques.

- Portions of the high grade TQ3 and TQ4 quartz-sulphide lodes that extend southwards beneath the mill site should be drilled to establish if additional resources lie beneath current surface infrastruture.

- The potential for economic gold mineralisation within intervening quartz stringer zones between the high grade TQ1, TQ2, TQ3 and TQ4 veins should be tested as link structures are often developed in orogenic style deposits

District Exploration Potential

The Vangtat orogenic gold deposit is located adjacent to first-order, N-S and NW-SE trending deep-crustal fault zones, which show complex structural histories and may extend along strike for tens of kilometers with widths of a kilometre. Ores at Vangtat form as vein fill of second- and third-order shears and faults, particularly at flexures in dip and strike along the fault zones. The apparent spatial association between gold mineralisation and Carboniferous granitoids probably reflects a locally favourable structural trap or rheological contrast or possibly a heat source to driving hydrothermal systems.

Viet Lao Minerals has undertaken a regional geochemical survey over an area of a 250km^2 held under a Prospecting License surrounding the Vangtat Mining License. The results of the have been compiled at 1:25,000 scale and defined a number of gold and iron anomalies that have been subject to varying degrees of follow up prospecting.

Follow up prospecting generally consisted of geological mapping traverses, pan concentrate and stream sediment sampling, clearing and sampling of outcrops and shallow trenching with the aim of delineating prospects for more detailed evaluation. Survey results are generally compiled at 1:10,000 scale and five areas appear to be particularly prospective for orogenic style gold mineralisation based on the available Viet-Lao Mining data, Plates 1+2.

Gold Anomaly Au–II-1

The Au–II–1 anomaly is located approximately 3.5km NNW of the Vangtat mine in the northwestern portion of the Prospecting License #62. The anomaly area is underlain mainly by quartzitic sandstone, quartz-sericite schist, sandstone, siltstone intercalated with layers of shale and limestone interpreted as members of the MPSP Group. K-feldspar porphyry granodiorite of the Nam Ang Granodiorites and minor mafic gabbro intrude the meta-sediments. Major, deep seated, NW-trending fault zones are spatially related to the gold anomaly and may control the emplacement of intrusives.

The anomaly is reportedly characterised by anomalous gold in panned concentrates associated with elevated antimony, bismuth, copper, lead, zinc, arsenic and nickel. Occurrences of Auriferous quartz-sulphide veins outcrop at VL5034 which assays 0.40g/t Au and H01 assaying 0.70g/t Au.

Gold Anomaly Au–III-1

The anomalous area covers about 5km^2 in the northern Vangtat District approximately 8km north northeast of the gold mine. The anomaly area is underlain by siltstone and slates, quartzitic sandstone and quartz-sericite schist forming the axial zone of a N-S trending anticlinal fold structure coincident with an major fault zone. Gold mineralisation is recorded at a gossan outcrop #3010 which assays 22.1g/t. A second gossanous quartz vein outcrop at G01 reportedly assays 6.5m @ 24.4g/t Au. Trench #02 returned a value of 0.7g/t Au.

The gold veins are spatially related to a generally N-S trending fault zone and may extend for >1.5km along strike. A strong stream sediment antimony anomaly encompasses the anomalous area, coincident with the anticlinal axis.

Gold Anomaly Au–III-2

The anomaly covers a 3km^2 area and is situated approximately 2km south of the Vangtat mine and the quartz-sulphide-gold vein system may extend into the area. The anomaly is underlain by quartzitic sandstone, quartz-sericite schist, siltstone, shale and layers of limestone. To the northwest and southwest mafic intrusions of dark, foliated and altered rocks are present proximal to cataclastite zones indicative of brittle shearing. These rocks are composed of pyroxene, altered plagioclase, tremolite, actinolite, minor sericite and epidote and carbonate.

There are 3 main fault systems traversing the anomaly area including NW-SE trending discontinuous fracture systems interpreted as being the oldest and host some minor auriferous quartz-sulphide veins. There are a number of sub-parallel N-S trending faults which appear to localize mineralised quartz-sulphide veins zones at intersections with the earlier NW-SE trending faults.

Outcropping quartz-sulphide veins have returned grades of VL3105, 8.50g/t Au and VL3099, 4.0g/t Au. The panned concentrate and stream sediment samples reportedly only define low order gold and arsenic anomalies. Satellite imagery indicates N-S trending fracture zones possibly developed within Carboniferous granite. Mineralisation styles may include auriferous quartz-sulphide lodes and possible stockwork style quartz-sulphide-gold veinlets within competent granite hosts.

Gold Anomaly Au–III-3

The anomaly covers an 8km^2 area located 5km south of the Vangtat mine along the strike extension of the controlling N-S trending fault structures close to the southern boundary of Prospecting License #62. The anomaly is underlain by quartzitic sandstone, quartz-sericite schist and sandstone mixed with layers of shale, probably members of the MPSP Group forming an anticlinal fold structure.

The major fault zones traversing the anonaly area are the N-S trending structure extending south from the Vangtat mine and older NW-SE trending mylonitic shear zones which apparently control the emplacement of a Carboniferous granite immediately south of the gold anomaly. Auriferous quartz-sulphide veins up to a metre thick and traceable along strike have returned outcrop samples of VL3114, 3.40g/t Au and VL4132, 1.0g/t Au. Highly anomalous stream sediment copper and lead values probably indicate the presence of additional quartz veins.

Gold Anomaly Au–VI -1

The anomaly is located approximately 12km NE of Vangtat mine in the northeastern Vangtat District and encompasses an area of 5km^2. The anomalous area is underlain by quartzitic sandstone, quartz-sericite schist, siltstone intercalated with layers of shale probably members of the Xe Kaman Group. There are some restricted outliers of area Cenozoic extrusive olivine basalt. A well defined NE-SW trending fault zone traverses the area. Localised weak quartz-sulphide-gold mineralisation has been reported at outcrop with values of VL1091, 4.0g/t Au and VL0061, 0.90g/t Au.