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**ASX ANNOUNCEMENT** 28 August 2018

# SRK CONCLUDES HIGH-GRADE VANADIUM MINERALISATION AT NELLY MINE

## HIGHLIGHTS

- **After reviewing all relevant evidence, that included preliminary field mapping, historical channel sample assay values, etc, SRK Consulting, with input from Condor Prospecting, concluded that the Nelly Vanadium Mine (NVM) in San Luis, Argentina, is highly prospective for high-grade vanadium mineralisation**
- **The report confirmed historic operators only extracted a minor portion of the mineralised central vein, ground truthing showed a continuous vein 1.1km long and SSW-NNE trending, with near vertical dip, providing significant upside for any future potential mineral resource estimate**
- **Historical channel sampling and assay results throughout the historical workings produced grades from the partially mined vein that ranged up to 1.9% $V_2O_5$ with a length weighted sample average of 0.82% $V_2O_5$**
- **SRK has confirmed, via ground truthing, that the NVM deposit comprises a 1.5km[1] SSW-NNE mineralised trend, with five quartz-rich hydrothermal veins (including one partially mined) with relatively high historical vanadium grades:**
  - **Dimensions are up to 5.5m wide and from 12m to potentially 40m deep, subject to further verification by exploration methods**
  - **The type of deposit at NVM differs materially from the four main types found globally which includes vanadiferous titanomagnetite and sandstone-hosted vanadium systems that are prevalent in Australia**
- **During SRK Consulting's three-day site visit, the team noted, multiple small surface workings and the historical mineral processing plant, around which at least ten stock piles exist:**
  - **The NVM had historically produced vanadium pentoxide, between 1949-57, only one vein was partially-exploited, leaving most of the deposit intact**
  - **A future priority will be to bulk sample the ore in the stockpiles and determine the volume, since this is a probable source of early stage cashflow**
- **The Board will be fully implementing SRK Consulting's recommendation to expedite a high-level exploration program, as the core objective is to re-open NVM**

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**Hardey Resources Executive Chairman, Terence Clee commented:** *"Confirmation from SRK Consulting there is potentially four untapped, mineralised veins at Nelly Vanadium Mine and ten historic stockpiles, reflects the project's significant potential upside. The Board has accepted all SRK Consulting's recommendations to expedite a high-level exploration program, with re-opening the mine as soon as possible the core priority."*

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**Hardey Resources Limited's (ASX: HDY) ("HDY" or "the Company")** Board is pleased to provide shareholders with a high-level summary, focused on key findings and recommendations, from SRK Consulting's geological review on Nelly Vanadium Mine.

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## HIGH GRADE VANADIUM DEPOSIT

### Scope and context

SRK Consulting's brief – working collaboratively with Condor Prospecting – was to review all necessary historic information (public and private), undertake a site visit to NVM (Appendix A) then produce a geological review as the final deliverable. The specific terms of reference were broadly to evaluate work done to date, provide key findings and final recommendations.

### Key findings

SRK Consulting's key findings are as follows:

- NVM has the potential to deliver a high-grade vanadium deposit based on the historical channel sampling assay results;
- Ore continuity had been confirmed by preliminary field mapping / ground truthing to define a mineralised strike length of at least 1.5Km, with the central vein continuously surface mapped for 1.1Km;
- SRK proposed a high-level exploration campaign to verify the grade and continuity as indicated in the preliminary field mapping and the historical channel sampling assay results;
- The mineralisation at NVM does not conform to one of the four main world-class vanadium deposit types, rather it can be defined as a SSW-NNE set of quartz-rich hydrothermal polymetallic veins with relatively high contents of vanadium-lead-zinc-copper;
- NVM was successfully mined from 1949-57, with $V_2O_5$ produced from a minor portion of the mineralisation based on the observed large portion of remaining vein from within the historic workings and the interpreted 1.5km strike of the vein.; and
- Insights from the site visit, when reconciled with historic geological maps and previous studies, confirmed the veracity of the information (as shown in the section 'Site Visit Overview', Appendix A, and the accompanying JORC (Code) Table 1)

### Key recommendations

The SRK Consulting team recommended a high-level exploration program be implemented at NVM to determine the extent of mineralisation within the system, as the current findings are from SRK ground truthed surface observations of the mineralised veins, complemented by the historical channel sampling assay results A key priority was verifying the $V_2O_5$ grade and ore continuity, particularly from a depth of 15-40m along the mineralised trend, based on the historic workings, since this would determine the project's scalability.

Once regulatory approval is granted, SRK Consulting suggested the following conceptual exploration program be rolled-out at NVM, comprising:

- **Geophysics:** the induced polarisation method is widely used for exploring hydrothermal veins, but critical is ensuring the technology applied can go deeper than 100m:

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- Existing mining works should be used to adjust the geophysical model to the actual geological setting, after detailed geological mapping; and
- Once geophysics and geology have been matched in the old mine and surroundings, detailed geophysical exploration can be applied to the rest of the mineral deposit.

- **Mapping:** detailed geological and structural mapping through aerial photos, satellite imagery and field work.
- **Topography:** detailed topographic mapping within the project area and historic mining works.
- **Ore sampling:** to better constrain ore grades.
  - Veins – surface channel sampling that is perpendicular to the veins strike which is spaced according to vein thickness and length.
  - Stock piles – collect samples from each according to estimated volume.
- **Ore chemistry:** conduct whole-rock chemical analyses for some oxides (e.g. sulphate, carbonate) and most trace elements.
- **Mineralogy:** thin-section optical microscopy for transmitted and reflected light as a first step to assess ore mineralogy, grain size and texture. Post this, get a sub-set of samples for further mineralogical studies.
- **Conceptual model:** define a conceptual model based on geological, structural and geochemical information collected mainly at surface and estimate vein continuity in depth based on geophysics.

If the results from the conceptual geological model demonstrate ore grade and ore body continuity, then formulate an inaugural drilling campaign. In turn, this paves the way for a 3D geological model to be constructed, the estimation, and subsequent reporting of a JORC (2012) code $V_2O_5$ mineral resource.

**NVM's geological potential**

The mineralisation style at NVM is characterised by quartz-rich hydrothermal mineralised veins with relatively high contents of vanadium, as shown by the historical channel sampling assay results and visual identification of the Vanadinite in the mineralised veins. The NVM deposit cannot be clearly classified within one of the four main world-class vanadium mineralised system types (refer Appendix B); rather, it is defined as hydrothermal vanadium and base metal veins where the upper zone is enriched by oxidation during weathering, particularly in lead vein deposits.

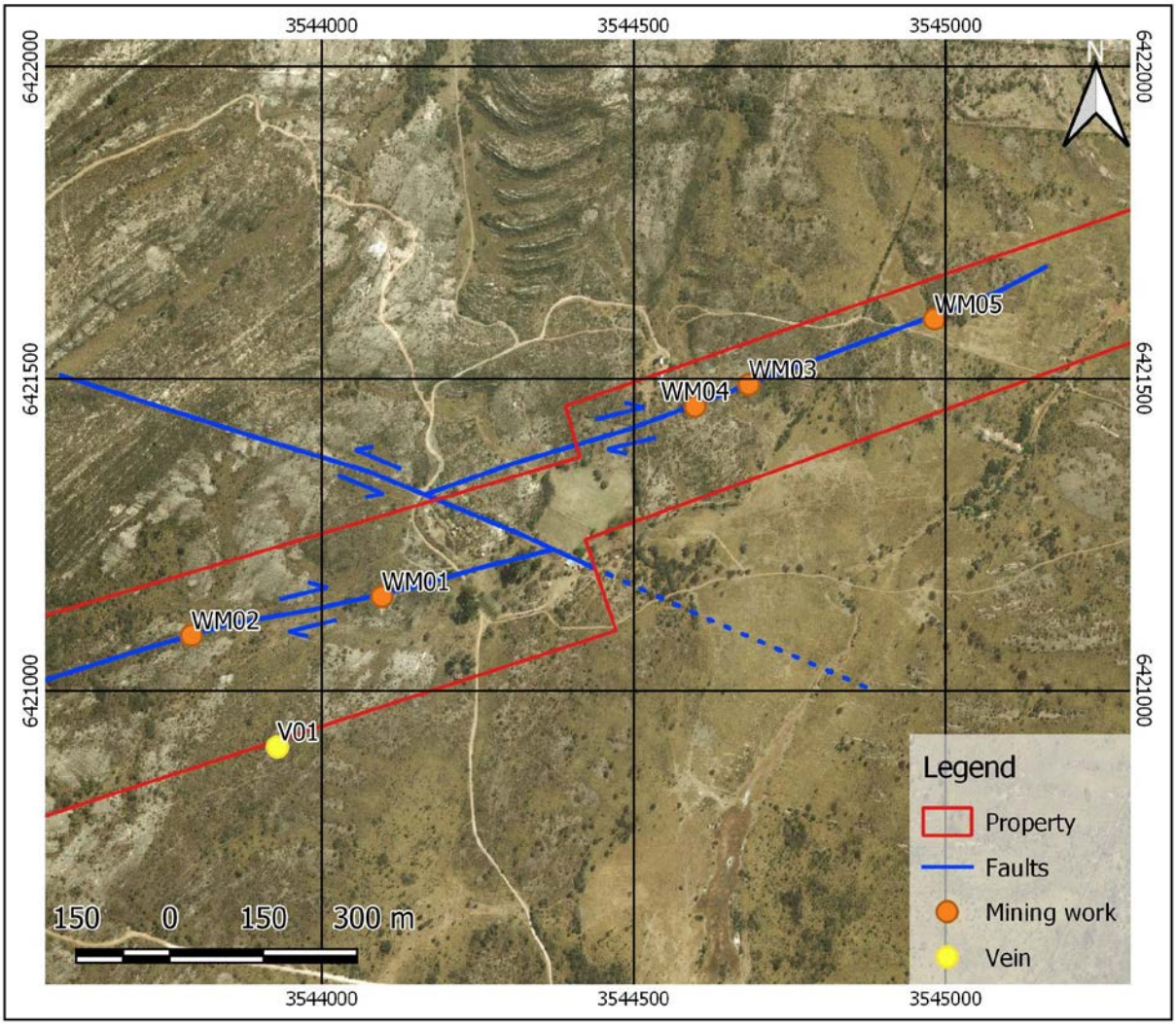
This post-mineralisation enrichment resulted in widespread oxidised minerals such as malachite, azurite and wulfenite, accompanied by some primary sulphides such as pyrite and galena. Hence, the main vanadium minerals recognised to date are vanadinite and descloizite (Alessi 1959).

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**SITE VISIT OVERVIEW**

Teams from SRK Consulting and Condor Prospecting undertook a comprehensive site visit to NVM and surveyed the old workings, outcrops with possible vanadium mineralisation explored by Alessi (1959), historic ore stock piles and infrastructure facilities (Figure 1).

**FIGURE 1: NVM SATELLITE IMAGE, WITH LATER OBSERVATIONAL LOCATIONS**



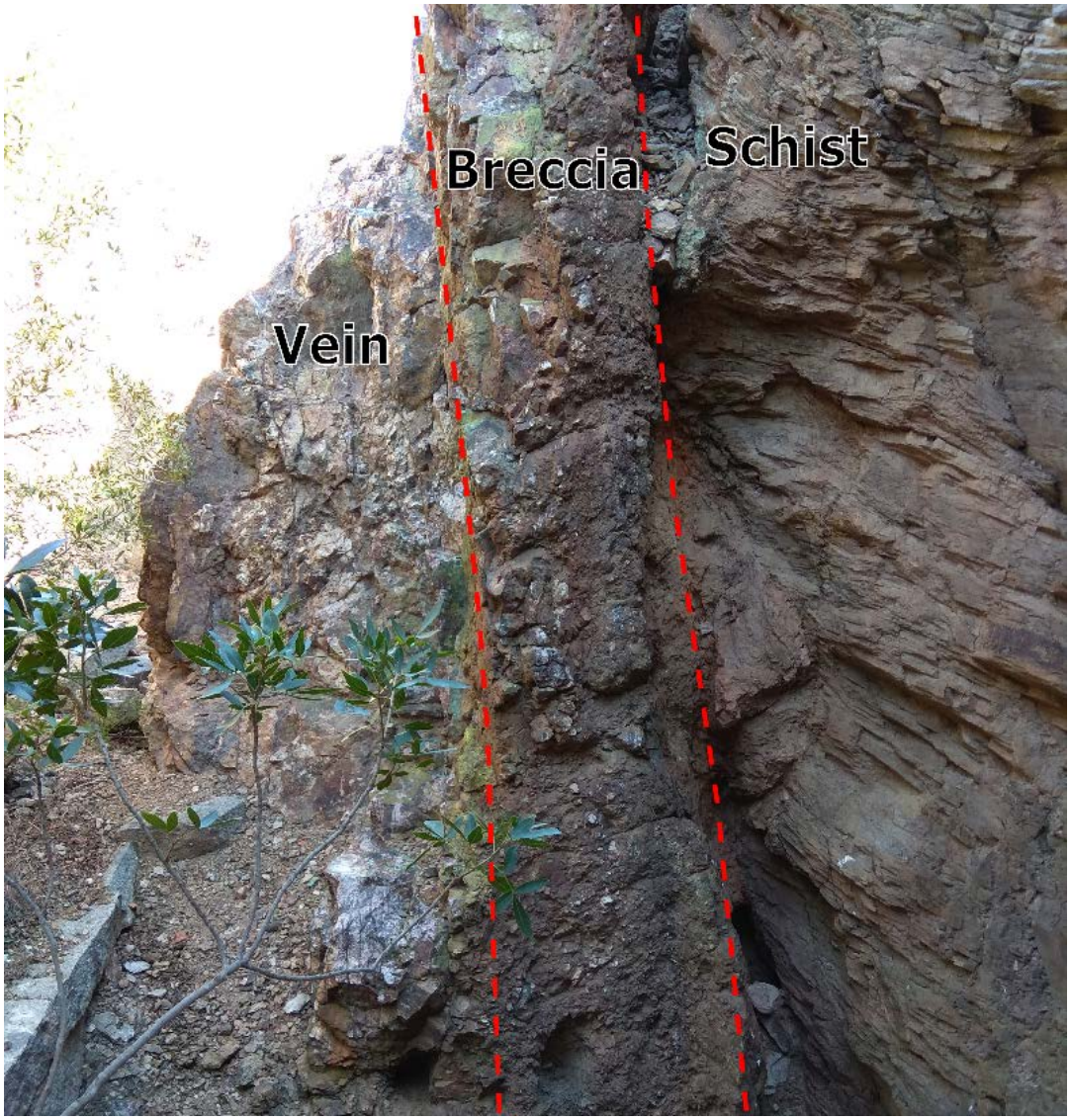

Source: SRK Consulting

The host-rock is composed of an E-NE trending mica-schists, although locally it is intensely folded and virtually vertical in dip. The schist is intruded by pegmatites following the foliation of the schists. Possibly, the intrusion of pegmatite into schists served as a pathway for mineralized solutions, as the main vein is consistent with the metamorphic foliation and is in contact with the two types of host-rock: schist to the north and pegmatite south.

The mining work (Figure 1, WM01), where NVM was developed, shows mineralisation within a 160m long quartz-rich lens-shaped vein which is 8-10m wide in the central part. From field kinematic indicators, a dextral shear component is interpreted for both sides of the mineralised vein.

Fault breccias thickness are in the order of 30cm or may not be present, being the vein in direct contact with the host rock. (Figure 2).

**FIGURE 2: NORTH WALL MAIN OPEN-PIT MINING WORKINGS (SITE: WM01 DISPLAYED ON FIGURE 1)**



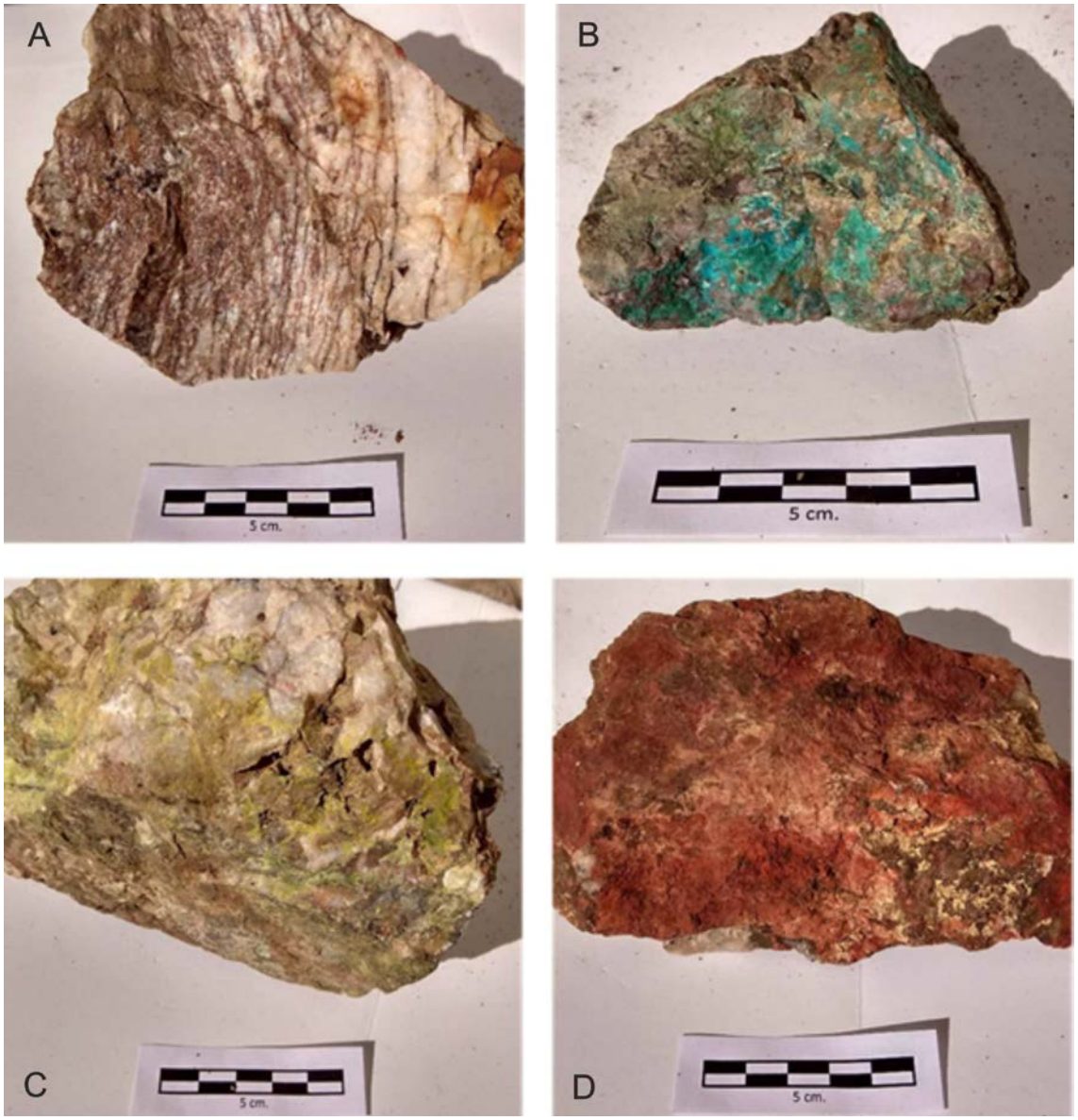

Source: SRK Consulting

The mineralised vein corresponds to a quartz-rich body with abundant secondary veins grading to stockwork textures in some sectors, where the mineralisation is hosted. In addition, there are localised sectors with abundant cavities in quartz. The breccias on both sides of the quartz vein include clasts of varying size, while the matrix has been impregnated by mineral-bearing fluids.

Samples from the main mineralised vein, taken at site WM01 are shown in Figure 3

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**FIGURE 3: SAMPLES FROM MAIN VEIN (SITE: WM01 DISPLAYED ON FIGURE 1)**




Source: SRK Consulting

Metalliferous minerals that are observed and identified for infills in fractures or cavities in both the vein and the breccia include, at site WM01:

- pyrite [$FeS_2$] – in small clusters and isolated crystals sometimes oxidised to limonite;
- galena [PbS] – in nodules in cavities;
- malachite [$Cu_2CO_3(OH)_2$] and azurite [$Cu_3CO_3(OH)_2$] – in thin films or filling cracks;
- wulfenite [$PbMoO_4$] – as tabular crystals in quartz voids; and
- vanadinite [$Pb_5(VO_4)3Cl$] – as infills within cracks and occasionally as red to brownish stains in quartz veins.

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The mining work identified as WM02 (refer Figure 1) corresponds to a quartz-rich vein located 250m to the W-SW. This keeps the same strike and dip as MW01. The quartz vein is fractured and grades into stock-work texture, while the mineralisation is hosted in fractures. Quartz is not affected by mineralisation in this case (Figure 4).

**FIGURE 4: INSITU QUARTZ VEIN (SITE: WM02 DISPLAYED ON FIGURE 1)**



Source: SRK Consulting

The second open pit historic mining operation, which corresponds to WM03 (refer Figure 1), is located 700m to the E-NE – the mineralised vein outcrop is circa 50m long and 3m wide. This mineralised vein has a structure and mineralisation style similar to main open pit vein (WM01). The vein is mainly composed of quartz in a stock-work framework hosting metalliferous minerals. The matrix of the stockwork quartz vein is intensely stained with red, green and brown-coloured secondary minerals (Figure 5).

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**FIGURE 5: HISTORIC WORKINGS 3M WIDE SECONDARY OPEN PIT (SITE: WM04 DISPLAYED ON FIGURE 1)**



Source: SRK Consulting

The mining work shown as WM04 (refer Figure 1) has the same structure and mineralogy as the mining workings at sites WM01 and WM03. However, the outcrop is smaller, with dimensions circa 10m long and 2m wide (Figure 6).

**FIGURE 6: MINERALISED VEIN OUTCROP (SITE: WM04 DISPLAYED ON FIGURE 1)**



Source: SRK Consulting

Given the location and characteristics of the vein outcrops, SKR Consulting infer it is likely the same tabular mineralised body is hosted in a vertical NE-SW trending fault, cut by NW-SE faults with a horizontal sinistral component.

The main vein and outcrops, which show the highest mineralisation, are located in areas close to the NW-SE faults. As such, SRK consulting infers this event conducted mineralised fluids so the mineralisation in the main vein could have been the product of multiple hydrothermal pulses.

One of ten stockpiles identified adjected to the main and secondary open pits (Figure 7).

**FIGURE 7: HISTORIC STOCKPILE NEAR MAIN OPEN PIT (SITE: WM01 DISPLAYED ON FIGURE 1)**



Source: SRK Consulting

**Next steps**

Move forward with the high-level exploration program and plans to re-activate NVM's mining lease.

For and on behalf of the Board

Terence Clee
Executive Chairman

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**COMPETENT PERSON'S STATEMENT:**

*The information in this report that relates to Geological Interpretation, Historical Exploration Results, or Historical Mineral Resources is based on information compiled by Nicholas Ryan, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Ryan has been a Member of the Australian Institute of Mining and Metallurgy for 12 years and is a Chartered Professional (Geology). Mr Ryan is employed by Xplore Resources Pty Ltd. Mr Ryan has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Ryan consents to the inclusion in the report of the matters based on his information and the form and context in which it appears.*

## REFERENCES:

Independent Review on the Geological Potential of the La Nelly Vanadium Project, San Luis, Argentina; SRK Consulting (Argentina); 15 August 2018

Numbered references:

1) HDY ASX Announcement dated 15 Aug 2018
2) TSE-listed LGO; Largo Resources Ltd NI 43-101 report date 20 July 2018 www.sedar.com
3) CVE-listed BSK; Blue Sky Uranium Corp Prospectus dated 28 February 2018 www.sedar.com
4) TSE-listed EFR; Energy Fuels Inc NI 43-101 report date 25 March 2014 www.sedar.com
5) HDY ASX Announcement dated 3July 2018

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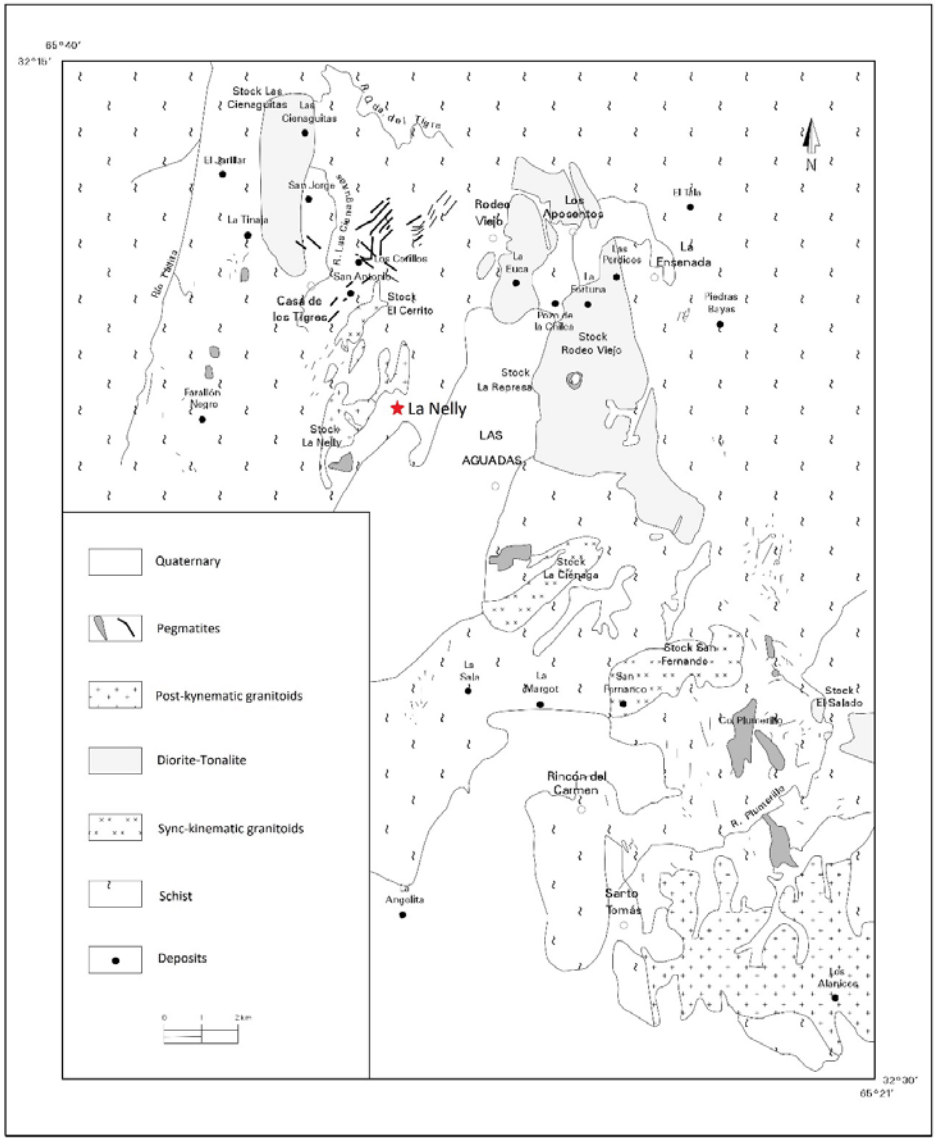
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## APPENDIX A: GEOLOGY AT NVM AND SURROUNDING AREAS

NVM is located in the Las Aguadas mining district in the north-eastern sector of the Sierra de San Luis, Argentina, covering a 60km² area. The mining district is composed of a series of Pb-Zn (Cu-Ag) sulphide vein-like deposits.

The Las Aguadas mining district is composed of an igneous-metamorphic basement of lower Precambrian-Paleozoic age which includes schists, migmatites, granitoids, pegmatites, aplites, lamprophires, basalts and hydrothermal veins (Figure A1).

### FIGURE A1: LAS AGUADAS MINING DISTRICT AND DEPOSIT LOCATIONS

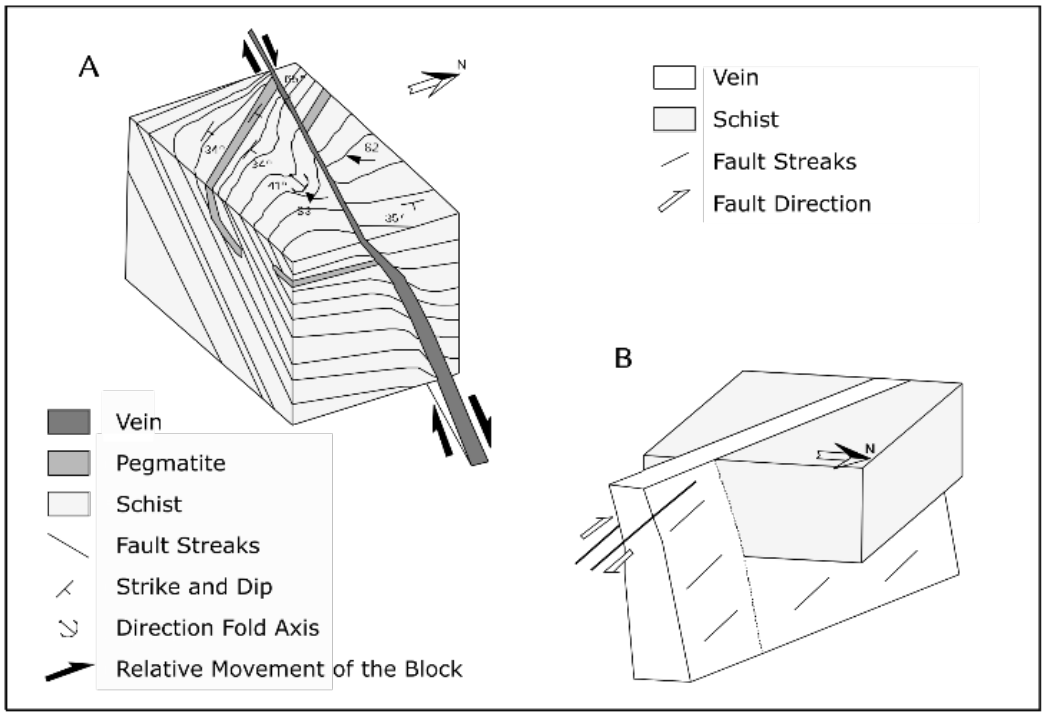



Source: Ulacco (1992).

The NVM deposit is intruded in a micaceous schists, in turn intruded by post-kinematic pegmatites possibly related to the Las Chacras batholith of lower Carboniferous age (Ulacco 1992; Malvicini et al 1995). During this stage the rocks underwent ductile deformation at the end of the upper Paleozoic, when the basement begun to undergo brittle deformation.

Brittle deformation correlated with extensional tectonic processes and allowed hydrothermal fluids to rise. From the interpretation of the mineralogy and textures of the veins, it is concluded that there were three pulses of mineralising fluids that filled the fractures. Repeated brittle deformation led the veins to multiple dislocation and mineralisation events.

**FIGURE A2: MINERALISATION MOVEMENTS**




Source: Ulacco (1992).

The deposits are vein-like and have variable strike and dip, ranging from a few centimetres to over 10m thickness that tend to decrease gradually or sharply. These deposits underwent hydrothermal processes, which altered the surrounding host rocks in alteration zones that vary between 0.1 and 0.8m.

The deposition temperature of the mineralisation has been tentatively determined using the optical method of fluid inclusions in quartz, which resulted in 144-362°C, with an average of 266°C.

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## APPENDIX B: VANADIUM BACKGROUND

### Vanadium geochemistry

Vanadium is a trace element that is the 22nd most abundant element in Earth's crust and is an essential constituent of many minerals. It occurs in one of four oxidation states in nature: +2, +3, +4, and +5. The V3+ ion has an octahedral radius that is almost identical to that of Fe3+ and Al3+ and, therefore, it substitutes them in ferromagnesian minerals.

During weathering, much of the vanadium may partition into newly formed clay minerals, and it either remains in the +3 valence state or oxidizes to the +4 valence state, both of which are relatively insoluble. If erosion is insignificant but chemical leaching is intense, the residual material may be enriched in vanadium, as in some bauxites and laterites. During weathering of igneous, residual or sedimentary rocks, some vanadium oxidizes to the +5 valence state, especially in the intensive oxidising conditions that are characteristic of arid climates.

The average contents of vanadium in the environment are as follows: soils (10 to 500ppm); streams and rivers (0.2 to 2.9ppb); and coastal seawater (0.3 to 2.8 ppb). Concentrations of vanadium in soils (548 to 7,160ppm) collected near vanadium mines in China, the Czech Republic and South Africa are many times greater than natural concentrations in soils.

### World class vanadium deposits

Vanadium is extracted from several different types of mineral deposits and fossil fuels. These deposits include:

- Vanadiferous titanomagnetite (VTM) deposits;
- Sandstone-hosted vanadium (with or without uranium) deposits (SSV deposits);
- Vanadium-rich black shales;
- Other types of vanadium deposit such as some magmatic-hydrothermal niobium-titanium deposits.

### 1] Vanadiferous titanomagnetite (VTM)

These kinds of deposits are found throughout the world and principal source of vanadium. The most economically significant VTM deposits include:

- Bushveld Complex in South Africa (Reynolds, 1985);
- Panzhihua layered intrusion in Sichuan Province, China (Zhou et al., 2005);
- Kachkanar massif in the Ural Mountains in Russia;
- Windimurra Complex in Western Australia (Ivanic et al., 2010); and
- Bell River Complex (Matagami deposit) and the Lac Doré Complex in Quebec, Canada (Taner et al., 1998).

The VTM deposits consist of magmatic accumulations of magnetite and ilmenite, defined arbitrarily as having grades of more than about 1 % rutile (Fischer, 1975b). They commonly contain 0.2 to 1% V2O5, but some zones (for example, the Bushveld Complex) contain more than 1.5 % V2O5 (Reynolds, 1985). The most exposed VTM deposits are Archean or Proterozoic in age.

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**2] Sandstone-hosted uranium deposits (SSV)**

SSV deposits have been identified in all continents, with many known to have high vanadium mineralisation vanadium (Dahlkamp, 2010). These deposits comprise vanadium-and-uranium-bearing sandstone (known as sandstone-hosted vanadium [SSV] deposits), with average resource and ore grades ranging from 0.1 to 1% vanadium. On a global scale, the United States is the main producer of vanadium from SSV deposits, particularly from those on the Colorado Plateau.

Additionally, these SSV deposits are the chief domestic source of vanadium in the United States (Fischer, 1968, 1973; Polyak, 2012, 2013). Most deposits are located in:

- Western Colorado and Eastern Utah;
- Northern Arizona and New México;
- Bigrlyi deposit in Northern Territory, Australia;
- Tonco-Amblayo district in Argentina;
- Amarillo Grande district in Argentina; and
- Karamurun district of Almaty Oblysy, Kazakhstan (Dahlkamp 2009).

Vanadium concentrations in SSV ores (expressed as V2O5) are commonly >1%, though some deposits in southwestern Colorado have grades >2.5% (Shawe 2011). The Bigrlyi deposit in Northern Territory, Australia, has a grade of 0.13%, while Tonco-Amblayo district in Argentina have grades ranging from 0.1-0.3% vanadium (Dahlkamp 2010).

Vanadium, occurs as oxide phases or is combined with other elements, forming more than 40 different minerals in SSV ores. Primary SSV ores are characterized by a consistent black-mineral suite composed of coffinite, montroseite, uraninite, and vanadium aluminosilicates (that is, low valence V3+ minerals). These primary minerals are modified by progressive secondary oxidation above the water table to form an oxidized mineral assemblage dominated by carnotite, corvusite, and tyuyamunite (Weeks et al 1959).

**3] Shale-hosted vanadium deposits**

Vanadium-rich metalliferous black shales occur primarily in late Proterozoic and Phanerozoic marine successions. The term shale is used here broadly to include a range of carbonaceous rocks that include marls and mudstones. These fine-grained sedimentary rocks were deposited in epeiric (inland) seas and on continental margins. They typically contain high concentrations of organic matter (>5 %) and reduced sulfur (>1%; mainly as pyrite), as well as a suite of metals, such as copper, molybdenum, nickel, PGEs, silver, uranium, vanadium, and zinc (Desborough et al, 1979; Coveney and Martin, 1983; Coveney et al., 1992; Hatch and Leventhal, 1992; Piper, 1999). Concentrations regularly exceed 0.18% V2O5 and can be as high as 1.7% V2O5.

Well-characterized vanadiferous black shales include:

- Woodruff Formation in Nevada (Desborough et al 1979);
- Meade Peak Phosphatic Shale Member of the Phosphoria Formation in Idaho and Wyoming (McKelvey et al 1986; Love et al 2003);
- Mecca Quarry Shale Member of Illinois and Indiana (Coveney et al 1987);
- Doushantuo Formation in Hubei Province in southern China (Fan et al 1992); and

- Portions of the Toolebuc Formation in Queensland, Australia (Lewis et al 2010).

Although these black shales have long been recognised as potential sources of vanadium, they are not currently exploited. Project development is underway at the Gibellini vanadium prospect in Nevada (Woodruff Formation), and if production begins, it will be the first primary shale-hosted producer of vanadium in the United States. The Julia Creek deposit (Toolebuc Formation) is in the planning stages. The Green Giant deposit in southern Madagascar (Energizer Resources, Inc 2013) consists of metamorphosed vanadiferous shale that extends for at least 21km along strike and is reported to contain about 350,000 metric tons of V2O5.

**4] Other magmatic-hydrothermal vanadium resources**

Some magmatic-hydrothermal niobium-titanium deposits contain elevated concentrations of vanadium. Deposits at Potash Sulphur Springs (aka Wilson Springs) in Arkansas were the most important sources of vanadium in North America in the 1970s and 1980s, with nearly 4.3m metric tons of 1.2% V2O5 produced. By 1990, all the mines at Wilson Springs were closed.

Typical vanadium concentrations in such deposits are about 1% and are contained in magnetite and titanium minerals.

Several other deposit types contain vanadium concentrations that are noteworthy, but all are presently uneconomic and are unlikely to be considered vanadium resources in the future.

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# JORC Code, 2012 Edition – Table 1 report template

Formally the historical vanadium mine is referred to in Spanish as the 'La Nelly', the Table 1 will substitute 'Nelly Vanadium Mine' for 'La Nelly'

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.* | Historical Rock Channel samples obtained across the mineralized vein or perpendicular to the strike of the mineralized vein. The dip of the mineralized vein is approximately 80 degrees from the horizontal. The width of the central vein the vein ranged from 0.80 to 3.40m in the sampled Nelly Vanadium Mine Central vein historical workings. The Nelly Vanadium Mine open pit and underground historical workings were sampled.<br>In most instances the Historical Rock Channels were sampled material from either the open pit or sublevel floor workings. Due care was taken to reduce any sampling bias from oxidation or detrital material.<br>The workings floor channel samples were obtained perpendicular to strike of the mineralized vein, consisting of a standard width of 0.15m, with 0.15m of immediate floor material removed and discarded to reduce any potential effects of oxidization mineralisation producing a basis in the sampled assay results.<br>Historical Rock Channel samples removed the next 0.03m of material, producing a channel sample of the dimensions: 'vein length (m)' x '0.15 (m)' x '0.03 (m)'<br>In instances where the sample preparation technique documentation was not located, to identify crushing and pulversing of the sample, it is assumed that the industry standard sample preparation techniques of the region were followed at the time of the historical sample preparation – as the assay results from the historical prepared samples are not being used in the estimation of exploration targets or a mineral resource, it is considered immaterial that the documentation had not been located.<br>In addition, the Competent Person notes the sampling techniques and assay results are obtained from published technical papers (refer to sub-section 'Exploration done by other parties', Section 2, Table 1), it is assumed rigor and due care would have occurred in processing and assaying of the samples.<br>No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement. |
| ***Drilling techniques*** | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type,* | No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement. |

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| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *whether core is oriented and if so, by what method, etc).* | |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement.<br>No formal sample Historical Channel sample recovery is reported in the thesis of Alessi, it is anticipated that greater than 99% of the sample had been recovered, with the potential loss occurring for some of the finer rock fragments produced by the sampling method.<br>Due care had been taken to reduce oxidized mineralisation potentially biasing the assay results of the Historical Rock Channel samples.. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | Historical Rock Channel samples had mineralisation/lithology descriptively recorded for the mineralized vein, producing a qualitative description of the sample taken at a location within the historical workings of the Nelly Mine.<br>The width of the central vein the vein ranged from 0.80 to 3.40m in the Historical Rock Channel sampled Nelly Vanadium Mine Central vein historical workings. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size* | In instances where the sub-sampling preparation technique documentation was not located, to identify sub-sampling techniques, it is assumed that the industry standard sample preparation techniques of the region were followed at the time of the historical sample preparation – as the assay results from the historical prepared samples are not being used in the estimation of exploration targets or a mineral resource, it is considered immaterial that the documentation had not been located.<br>• The Competent Person notes the sampling techniques and assay results are obtained from published technical papers (refer to sub-section 'Exploration done by other parties', Section 2, Table 1), it is assumed rigor and due care would have occurred in processing and assaying of the samples.<br>The Competent Person notes the assay results are obtained from published technical papers (refer to sub-section 'Exploration done by other parties', Section 2, Table 1), it is assumed rigor and due care would have occurred in processing and assaying of the samples, including the quality control procedures and processing of the samples at technical laboratories and/or professional institutions.<br>The assay results from the historical sampled and assayed material are not being used in the estimation of exploration targets or a mineral resource. |

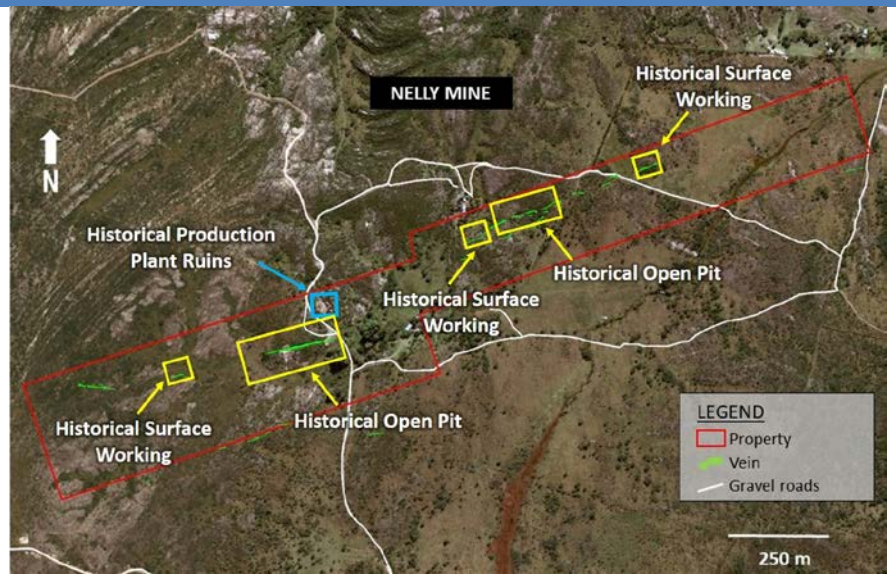
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| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *of the material being sampled.* | The assay results from the Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code. |
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.* | The Competent Person notes the assay results are obtained from published technical papers (refer to sub-section 'Exploration done by other parties', Section 2, Table 1), it is assumed rigor and due care would have occurred in processing and assaying of the samples, including the quality control procedures and processing of the samples at technical laboratories and/or professional institutions.<br>The assay results from the historical channel sampled and assayed material are not being used in the estimation of exploration targets or a mineral resource.<br>The assay results from the Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | No independent verification of the sampled assay material is yet to be completed, this has been planned and described in the 'Future Work' sub-section (refer to sub-section 'Future Work', Section 2, Table 1).<br>The Competent Person notes the assay results are obtained from published technical papers (refer to sub-section 'Exploration done by other parties', Section 2, Table 1), it is assumed rigor and due care would have occurred in processing and assaying of the samples, including the quality control procedures and processing of the samples at technical laboratories and/or professional institutions. |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement.<br>The lowest level of the historical underground workings of the Nelly Mine were not accessible due to the workings having been flooded. Currently the workings are flooded and not able to be entered until a full geotechnical analysis and separate hydrological analysis is comepleted.<br>Historical Rock Channel samples appear to have been located by tape measure, detailed location notes recorded and drawn onto plans and sections of the historical workings of the Nelly Mine. |
| ***Data spacing and*** | • *Data spacing for reporting of Exploration Results.* | • No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement. |

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| Criteria | JORC Code explanation | Commentary |
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| ***distribution*** | • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | The lowest level of the historical underground workings of the Nelly Mine were not accessible due to the workings having been flooded. Currently the workings are flooded and not able to be entered until a full geotechnical analysis and separate hydrological analysis is comepleted.<br>The measurements derived from the surface geology and exposed areas of the pits are biased to accessible portions of the historical workings of the Nelly Vanadium Mine, the mineralisation type, and structural interpretation are indicative of elevated vanadium in a polymetallic vein setting. Therefore, measurements are distributed along the strike of the exposed mineralized veins and geological structures.<br>The assay values from the Historical Rock Channel samples are biased to accessible portions of the historical workings of the Nelly Vanadium Mine, the sample distribution, assay results, mineralisation type, and structural interpretation are indicative of elevated vanadium. It is anticipated that future exploration methods, such as geophysical survey techniques and/or drilling in order to quantify the volume and grade of the mineralized veins.<br>• The mineralized veins are taken to have a vertical or near vertical dip, for the measurements taken and presented in the current Hardey Resources Limited ASX Announcement. |
| ***Orientation of data in relation to geological structure*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | The contemporary measurements and historical channel samples derived from the surface geology and exposed areas of the pits are biased to accessible portions of the historical workings of the Nelly Vanadium Mine, the mineralisation type, and structural interpretation are indicative of elevated vanadium in a polymetallic vein setting. Therefore, measurements are distributed along the strike of the exposed mineralized veins and geological structures.<br>The mineralized veins are taken to have a vertical or near vertical dip, for the measurements taken in the site visit.<br>It is anticipated that future exploration methods, such as geophysical survey techniques and/or drilling in order to quantify the volume and grade of the mineralized veins.<br>The mineralised central vein is interpreted to be 15 to 40m into the sub-surface, based on a conservative interpretation of field observations and historical plans of mine workings.<br>The assay results from the Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code.<br>The lowest level of the historical workings of the Nelly Mine were not Historical Rock Channel sampled due to the workings having been flooded. Currently the workings are flooded and not able to be entered until a full geotechnical analysis and separate hydrological analysis is comepleted. |

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| | | <br>A close up satelite image of Nelly Vanadium Mine, Historical workings identified with yellow rectangles and the central mineralised vein in birght green. The mineralised zone is interpretated from the previous map and SRK due diligence site visit to be 1.5Km in length. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | The historical sample security measures undertaken are assumed to have been sufficient to ensure that collected Historical Rock Channel samples are representative of the geological setting associated with the historical Nelly Vanadium Mine. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | No formal audits of the sample results have been undertaken.<br>The historical sampling program and assay results targeted insitu-material associated with the Historical workings of the Nelly Vanadium Mine, providing confidence in the occurrence of elevated vanadium with the insitu geology of the Nelly Vanadium Mine. reported in the Hardey Resources Limited ASX Announcement dated 03 July 2018. |

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## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement and land tenure status*** | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br>• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | The Nelly Vanadium Mine is a site that holds historical mine workings and a smattering of ruins related to various buildingsand/or structures that supported the historical mine workigs: for example – the mineral processing plant ruins that contain in ground vats that added the chemical treatment of ore to produce vanadium pentoxide.<br>The mining tenure identifier applied for reactivation is 953-L-2003, this mining tenure application for mine reactivation is located in the San Luis province of Argentina.<br>• A material agreement exists, that once all conditions are met, will result in the transfer 100% of the holding company for the mining tenure to Hardy Resources Limited (ASX: HDY). The holding company has rights to 95% of the Nelly Vanadium Mine, with an in-country shareholder holding 5% of the rights, in line with how many foreign entities operate in Argentina. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | Exploration Exploration completed by other parties referred to in the current announcement includes:<br>➢ Alessi Víctor D.R., 1956. *History and characteristics of production of the "Nelly" Vanadium mine.*<br>➢ Alessi Víctor D.R., 1957. *History of production of a Vanadium mine called La Sala in San Luis Province, Argentina*<br>➢ Alessi Víctor D.R., 1959. *A detailed description of the Vanadium deposit Nelly.*<br>➢ Angeleli Victorio., 1942. *A review of cerro Blanco vanadium deposit.*<br>➢ Ortiz Suarez A. E., 1988. *Geological description of basement present in Las Aguadas complex.*<br>➢ Ortiz Suarez A. E., 1996. *Geological and petrographic description of the intrusives from Las Aguadas complex*<br>➢ Ulacco J.H., 1999. *History of production of various deposits of Pb-Zn* (Cu-Ag) in San Luis Province, Argentina (source for Fixman, et al.,1974; Mallimacci et al., 1973)<br>➢ Ulacco J.H., 2005. *A geological evaluation of La Sala and Piedras Bayas Mines (Pb, Zn and V)*<br>➢ Coveney, R.M., Jr., Murowchick, J.B., Grauch, R.I., Glascock, M.D.,and Denison, J.R., 1992, Gold and platinum in shales with evidence against extraterrestrial sources of metals: Chem¬ical Geology, v. 99, nos. 1–3, p. 101–114. [Also available at http://dx.doi.org/10.1016/0009-2541(92)90033-2.]<br>➢ Dahlkamp, F.J., 2010, Uranium deposits of the world—USA and Latin America: Berlin, Germany, Springer-Verlag, 423 p. [Also available at http://dx.doi.org/10.1007/978-3-540-78943-7.]<br>➢ Dahlkamp, F.J., 2009, Uranium deposits of the world—Asia: Berlin, Germany, Springer- |

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| Criteria | JORC Code explanation | Commentary |
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Verlag, 945 p. [Also available at http://dx.doi.org/10.1007/978-3-540-78558-3.]

- Desborough, G.A., Poole, F.G., Hose, R.K., and Radtke, A.S.,1979, Metals in Devonian kerogenous marine strata at Gibellini and Bisoni properties in southern Fish Creek Range, Eureka County, Nevada: U.S. Geological Survey Open-File Report 79–530, 31 p. [Also available at http://pubs.er.usgs.gov/publication/ofr79530.]
- Energizer Resources, Inc., 2013, The Green Giant vanadium project: Toronto, Ontario, Canada, Energizer Resources, Inc. Web page, accessed March 12, 2013 at http://www.energizerresources.com/29-properties/madagascar/271-green-giant-vanadium.
- Fan, Delian, Jie, Ye, and Tiebing, Lui, 1992, Black shale series-hosted silver-vanadium deposits of the Upper Sinian Doushantuo Formation, western Hubei Province, China: Exploration and Mining Geology, v. 1, no. 1, p. 29–38.
- Fischer, R.P., 1975b, Vanadium resources in titaniferous magnetite deposits: U.S. Geological Survey Professional Paper 926–B, 9 p., accessed January 11, 2013, at http://pubs.er.usgs.gov/publication/pp926B.
- Fischer, R.P., 1968, The uranium and vanadium deposits of the Colorado Plateau region, in Ridge, J.D., ed., Ore deposits of the United States, 1933–1967: New York, N.Y., American Institute of Mining, Metallurgical, and Petroleum Engineers, v. 1, p. 735–746.
- Ivanic, T.J., Wingate, M.T.D., Kirkland, C.L., Van Kranendonk, M.J., and Wyche, S., 2010, Age and significance of voluminous mafic-ultramafic magmatic events in the Murchison domain, Yilgarn Craton: Australian Journal of Earth Sciences, v. 57, no. 5, p. 597–614. [Also available at http://dx.doi.org/10.1080/08120099.2010.494765.]
- Lewis, S.E., Henderson, R.A., Dickens, G.R., Shields, G.A., and Coxhell, Simon, 2010, The geochemistry of primary and weathered oil shale and coquina across the Julia Creek vanadium deposit (Queensland, Australia): Mineralium Deposita, v. 45, no. 6, p. 599–620. [Also available at http://dx.doi.org/10.1007/s00126-010-0287-6.]
- Love, J.D., Smith, L.E., Browne, D.G., and Carter, L.M., 2003, Vanadium deposits in the Lower Permian Phosphoria Formation, Afton area, Lincoln County, western Wyoming: U.S. Geological Survey Professional Paper 1637, 28 p., 16 pls., 1 CD–ROM. [Also available at http://pubs.er.usgs.gov/publication/pp1637.]
- McKelvey, V.E., Strobell, J.D., Jr., and Slaughter, A.L., 1986, The vanadiferous zone of the Phosphoria Formation in western Wyoming and southeastern Idaho: U.S. Geological Survey Professional Paper 1465, 27 p., 2 pls. [Also avail¬able at https://pubs.er.usgs.gov/publication/pp1465.]
- Polyak, D.E., 2013, Vanadium: U.S. Geological Survey Mineral Commodity Summaries 2013, p. 178–179, accessed March 4, 2013, at http://minerals.usgs.gov/minerals/pubs/commodity/vanadium/mcs-2013-vanad.pdf.
- Polyak, D.E., 2012, Vanadium, in Metals and minerals:U.S. Geological Survey Minerals Yearbook 2011, v. I, p. 80.1–80.9, accessed December 10, 2015, at

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| | | http://minerals.usgs.gov/minerals/pubs/commodity/vanadium/myb1-2011-vanad.pdf.<br>➢ Reynolds, I.M., 1985, The nature and origin of titaniferous magnetite-rich layers in the upper zone of the Bushveld Complex—A review and synthesis: Economic Geology, v. 80, p. 1089–1108. [Also available at http://dx.doi.org/10.2113/gsecongeo.80.4.1089.]<br>➢ Taner, M.F., Ercit, T.S., and Gault, R.A., 1998, Vanadium-bearing magnetite from the Matagami and Chibougamau mining districts, Abitibi, Québec, Canada: Exploration and Mining Geology, v. 7, no. 4, p. 299 –311. [Also available at http://www.researchgate.net/publication/270579726_Vanadium-bearing_Magnetite_from_the_Matagami_and_Chibougamau_Mining_Districts_Abitibi_Qubec_Canada.]<br>➢ Weeks, A.D., Coleman, R.G., and Thompson, M.E., 1959, Summary of the ore mineralogy, part 5 of Garrels, R.M., and Larsen, E.S., III, comps., Geochemistry and mineralogy of the Colorado Plateau uranium ores (3d ed.): U.S. Geological Survey Professional Paper 320, p. 65–79, accessed March 14, 2013, at http://pubs.er.usgs.gov/publication/pp320.<br>➢ Zhou, M.-F., Robinson, P.T., Lesher, C.M., Keays, R.R., Zhang, C.-J., and Malpas, John, 2005, Geochemistry, petrogenesis and metallogenesis of the Panzhihua gabbroic layered intrusion and associated Fe-Ti-V oxide deposits, Sichuan Province, SW China: Journal of Petrology, v. 46, no. 11, p. 2253–2280. [Also available at http://dx.doi.org/10.1093/petrology/egi054.]<br>The $V_2O_5$ assay results reported are solely from Alessi (1959), from Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | The historical Nelly Vanadium Mine is located in the San Luis province of Argentina, in the Las Aguadas district, in the San Luis province, Argentina. The historical Nelly Vanadium Mine is located approximately 170 km from San Luis' capital city, the city shares the same name as the province it resides in.<br>The Regional Geology is dominated by precambrian-cambrian high to low grade metamorphic rocks with pre, syn and post-orogenic granitic intrusions of variable dimensions.<br>The historical Nelly Vanadium Mine is located in las Aguadas Pb - V mining district. Is part of many historical mines with historical production of Pb and/or V.<br>The regional target mineral is Vanadinite, a lead chlorovanadate, Pb5(VO4)3Cl, that is by weight 73.15% Pb and 10.79% V. At the historical Nelly Vanadium Mine, Vanadinite occurs as yellow staining on the Quartz Mineralised veins.<br>Nelly Vanadium Mine reactivation tenure holds five mineralized veins that can be mapped with consistently. Thickening and thinning of the mineralized veins does occur, with the central vein ranging up to 5.5m in maximum thickness. |

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| | | The central mineralized vein had been mined from 1949 to 1957, with channel sampling indicating that in the mined areas of the open pit and the underground workings the mineralized vein ranged from 0.8 to 3.4m.<br>Other vanadium oxide minerals have been identified, have yet to undergo consideration for potential economic mineralization at the Nelly Vanadium Mine. |
| ***Drill hole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>o *easting and northing of the drill hole collar*<br>o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>o *dip and azimuth of the hole*<br>o *down hole length and interception depth*<br>o *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | • No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement.<br>No data aggregation methods were used in the current Hardey Resources Limited ASX Announcement. |
| ***Relationship*** | • *These relationships are particularly important in the* | The measurements derived from the surface geology and exposed areas of the pits are |

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| ***between mineralisation widths and intercept lengths*** | *reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').* | biased to accessible portions of the historical workings of the Nelly Vanadium Mine, the mineralisation type, and structural interpretation are indicative of elevated vanadium in a polymetallic vein setting. Therefore, measurements are distributed along the strike of the exposed mineralized veins and geological structures. The central mineralised vein is interpreted to be 1.1Km in length, and associated with four other veins in a mineralised zone at least 1.5Km in length.<br>The mineralized veins are taken to have a vertical or near vertical dip, for the measurements taken and presented in the current Hardey Resources Limited ASX Announcement.<br>It is anticipated that future exploration methods, such as geophysical survey techniques and/or drilling in order to quantify the volume and grade of the mineralized veins.<br>The mineralised central vein is interpreted to be 15 to 40m into the sub-surface, based on a conservative interpretation of field observations and historical plans of mine workings.<br>No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement.<br>The assay results from the Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code.<br>• The lowest level of the historical workings of the Nelly Mine were not Historical Rock Channel sampled due to the workings having been flooded. Currently the workings are flooded and not able to be entered until a full geotechnical analysis and separate hydrological analysis is comepleted. |
| ***Diagrams*** | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | Alessi (1959) extracted 21 Historical Rock Channel samples from the Historical workings of the Nelly Vanadium Mine, in both the open pit areas and the underground workings.<br>Historical Rock Channel sample width: 0.80 to 3.40m, average 1.73m (essentially equivalent to the vein width or a very close approximate to the vein width, at vertical and/or near vertical dip.<br>Historical Rock Channel assay values: 0.20 to 1.90% V2O5, utilising a length weighted average methodology |

| Sample Identifier | Channel Sample Length (m) | V2O5 (%) |
|---|---|---|
| M1 | 1.05 | 1.10 |
| M2 | 1.45 | 0.70 |
| M3 | 1.35 | 1.10 |
| M4 | 2.45 | 1.00 |
| M5 | 1.50 | 1.00 |
| M6 | 0.85 | 0.70 |

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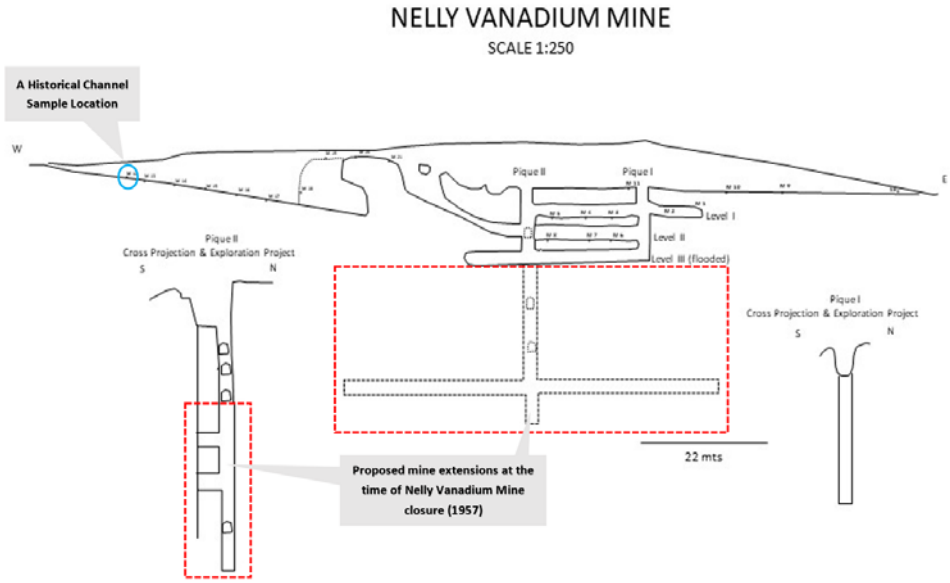
| Criteria | JORC Code explanation | Commentary |
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| | | |
|---|---|---|
| M7 | 1.25 | 1.40 |
| M8 | 0.90 | 0.50 |

| Sample Identifier | Channel Sample Length (m) | V2O5 (%) |
|---|---|---|
| M9 | 2.35 | 0.20 |
| M10 | 3.40 | 0.60 |
| M11 | 3.00 | 0.50 |
| M12 | 1.30 | 0.30 |
| M13 | 1.43 | 0.40 |
| M14 | 0.80 | 0.60 |
| M15 | 1.40 | 0.40 |
| M16 | 1.65 | 0.60 |
| M17 | 1.75 | 1.40 |
| M18 | 2.25 | 0.40 |
| M19 | 2.10 | 1.80 |
| M20 | 2.40 | 1.90 |
| M21 | 1.80 | 0.50 |

| | Channel Sample Length (m) | V2O5 (%) |
|---|---|---|
| Minimum value | 0.80 | 0.20 |
| Maximum value | 3.40 | 1.90 |
| Arithmetic Average value | 1.73 | 0.81 |
| Length Weighted V2O5 (%) | | 0.82 |

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|---|---|---|
| | | Historical Rock Channel length weighted assay value of 0.82% V2O5 would be the same as any channel sample volume weighted value, as specific gravity or density was not obtained for the reported Historical Rock Channel samples.<br><br> |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | No Drilling results had been reported in the current Hardey Resources Limited ASX Announcement.<br>Historical Rock Channel samples are biased to accessible portions of the historical workings of the Nelly Vanadium Mine, the sample distribution, assay results, mineralisation type, and structural interpretation are indicative of elevated vanadium in a polymetallic setting. Therefore, samples are distributed along the strike of the exposed mineralized veins and geological structures, yet the sampled were sub-perpendicular to the width / thickness of the mineralized vein. |

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|---|---|---|
| | | The assay results Historical Rock Channel samples, are indicative of the potential grades and near surface mineralised vein thickness. Exploration drilling, with other exploration methods will be required to establish exploration targets and/or mineral resources under the JORC (2012) Code.<br>The lowest level of the historical workings of the Nelly Mine were not Historical Rock Channel sampled due to the workings having been flooded. Currently the workings are flooded and not able to be entered until a full geotechnical analysis and separate hydrological analysis is comepleted. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | Nil at the time of writing this announcement. It is anticipated that the future planned Desktop Study (refer to sub-section 'Further-work', Section 2 of the current Table 1) has the potential to uncover additional information as the records kept by the mining departments of each state in Argentina are hard copy documents. |
| ***Further work*** | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | The Exploration Strategy is to execute upon grant of the mining tenure the following stages, which will be prepared in advance of the tenure grant (the order may change dependent on service provider availability):<br>➢ Detailed geological mapping by remote sensing methods;<br>➢ Field Reconnaissance and geological mapping;<br>➢ Implement an Induced Polarisation Geophysical Survey;<br>➢ Detailed Topographic mapping;<br>➢ Detailed stockpile mapping;<br>➢ Sampling and assay of the mineralised veins and stockpiles;<br>➢ Ore chemistry, to constrain the ore types and expected grades post processing of ore and/or stockpile material; and<br>➢ Geological modelling and/or Resource Estimation. |