ASSAYS CONFIRM SUCCESSFUL PRODUCTION OF 4N (99.99%) HIGH PURITY ALUMINA (HPA) FROM THE VICTORY BORE PROJECT

4N HPA represents a significant value-add to the Company's high purity Vanadium Project

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- **Test work has successfully confirmed the synthesis and production of 4N HPA (99.99%) from the Company's Victory Bore deposit, with a highest value achieved of 99.992%. Further optimisation is expected to improve these initial results.**
- **The Company appointed Lava Blue Ltd (Lava Blue) in March 2023 to undertake a study on High Purity Alumina (HPA) production as an additional product from its 100% owned Victory Bore deposit (see ASX announcement 21 March 2023).**
- **The Company's Victory Bore deposit is unique in having exceptionally high Aluminium Oxide in the waste rock with grades up to 31.4% Al_2O_3 .**
- **The high grades of Aluminium oxide in the waste rock provide the company with a significant advantage: A potential low-cost feedstock for high value HPA production.**
- **4N HPA is an in-demand material, used in applications including coatings for lithium ion battery separators, LED production, and synthetic sapphire production.**
- **HPA markets are growing and 4N products currently achieve up to USD$25,000-$40,000/tonne.** (*Source MarketCap.com.au*)
- **Surefire announced a maiden Mineral Resource Estimate of 38Mt[1] @ 23.3% Al_2O_3 (see ASX announcement 8 June 2023) over a portion of the Victory Bore deposit providing the Company with a significant value addition to the planned Vanadium extraction operation. This maiden resource could be increased subject to further drilling and assaying.** (*[1]Total number may have rounding errors. Aluminium resource based on a 22.0 % Al2O3 cut-off. Estimation by HGMC using ordinary kriging)*

Management Comment: Mr Paul Burton, Managing Director said: "*This successful test work result adds significant value to the Company's Victory Bore deposit. HPA from such a host rock raises important possibilities for the Company's future development strategy. We will now consider the feasibility of HPA production in the development plans for the Victory Bore Vanadium Project*".

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Surefire Resources NL ("**Surefire**" or "the **Company**") is pleased to provide an update on its strategy for production of **High Purity Alumina (HPA)** as a secondary product to **Vanadium** from its 100% owned flagship **Victory Bore Vanadium** project, located 400km from Geraldton Port in Western Australia. Figure 1.

Figure 1 Location of Victory Bore project

The Victory Bore project contains strongly elevated Aluminium Oxide (Al_2O_3) in the host rock surrounding the high-grade Vanadium resource (see figure 2). When mined and the magnetite extracted, this material would effectively be waste rock from which HPA could be commercially extracted.

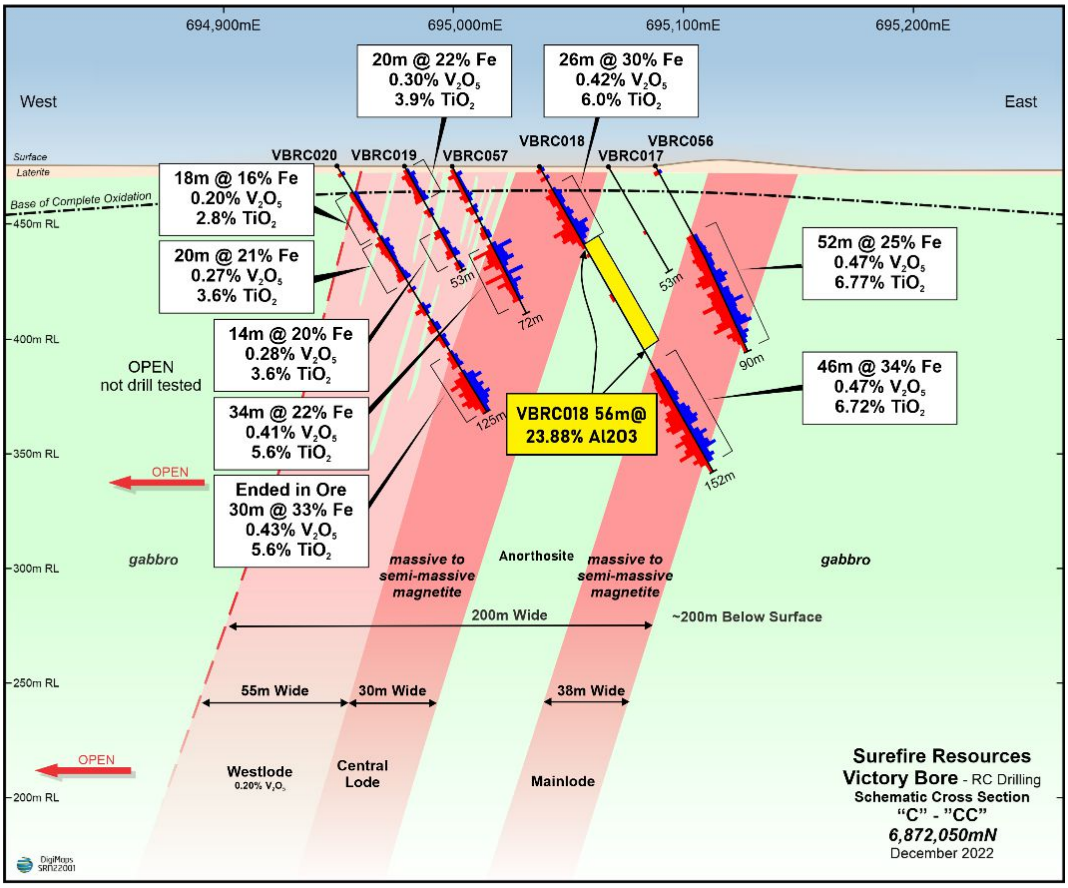

Figure 2: Cross section showing the high Aluminium Oxide grade in yellow, from RC drilling.

Significantly, the extraction of HPA from a hard rock source that occurs at Victory Bore provides the Company with a **low-cost feedstock for high value HPA production.**

Lava Blue HPA Test Work

Lava Blue was contracted to undertake laboratory test work to demonstrate a method to produce 4N (99.99%) purity alumina from this material, (refer ASX announcement 21 March 2023). Lava Blue uses a proprietary process developed with Queensland University of Technology (QUT) where the test work is undertaken.

Test work stages involved the following:

1. Initial characterisation of Surefire Resources samples;
2. Extraction of the Aluminium from the Surefire Resources sample using the standard Lava Blue process producing necessary intermediaries;
3. Analysis of the intermediaries for impurities and if impurities were unacceptable, investigation of methods and additional processing to either reduce or eliminate impurities; and
4. When intermediaries of suitable purity were produced, synthesis and production of HPA.

Samples

A total of 6 samples of 2-3kg each were sent to Lava Blue In Queensland. These samples were collected from RC drill hole material representative of the Victory Bore deposit, where high Al_2O_3 content was observed in previous laboratory assay results (see ASX announcement 21 March 2023). Refer table 1 for drill collars and intercepts.

Hole ID	Easting	Northing	Rl	Azimuth	Dip	Sample Id	From	To	**Al_2O_3 %**
VBRC0009	694835	6871751	475	270	-60	VBRC0694	2	4	12.3
VBRC0009	694835	6871751	475	270	-60	VBRC0699	12	14	23.62
VBRC0017	695056	6872055	475	270	-60	VBRC1051	24	26	24.31
VBRC0018	695024	6872048	475	270	-60	YSB18439	42	44	24.6
VBRC0018	695024	6872048	475	270	-60	YSB18448	44	46	23.8
VBRC0018	695024	6872048	475	270	-60	YSB15546	46	48	24.07

Table 1: Drill collars of samples collected for test work.

Characterisation

Assay X-Ray Fluorescence (**XRF**) of all samples showed that they should be prime candidates for HPA synthesis with suitable elevated Aluminium Oxide assays. Refer table 2:

Table 2: XRF of all six Surefire Resources samples (assays in %)

Name	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SO_3	SiO_2	SrO	TiO_2	V_2O_5	LOI
YSB18439	24.68	0.01	11.25	<0.01	7.7	0.2	1.82	0.07	3.64	0.05	0.24	49.05	0.03	1.32	0.07	0.56
YSB18448	23.86	0.01	10.65	<0.01	9.56	0.1	1.66	0.07	3.32	0.06	0.26	47.48	0.03	1.72	0.1	1.04
YSB15446	24.07	0.01	10.9	<0.01	11.12	0.1	1.47	0.07	3.36	0.08	0.48	46.44	0.03	2.07	0.13	0.71
VBRC-9	23.62	0.01	10.5	0.04	13.25	0.13	1.48	0.07	3.05	0.02	0.01	44.82	0.02	2.46	0.18	0.6
VBRC-17	24.31	0.01	10.75	<0.01	8.29	0.12	1.78	0.06	3.43	0.06	0.01	49.2	0.03	1.36	0.08	1.12
VBRC-9	12.3	0.01	4.6	0.01	47.89	0.04	2.55	0.19	1.26	0.01	1.93	20.15	0.01	9.27	0.66	0.29

Characterisation by quantitative Xray Diffraction (**QXRD**) revealed that the main aluminium bearing phase present is plagioclase feldspar at approximately 70%. Refer table 3:

Table 3: Characterisation of Surefire samples

Phase composition	Molecular formula (XRD reference)	Weight Percent (%)
Quartz	SiO_2	1.25
Ilmenite	$FeTiO_3$	1.29
Magnetite	Fe_3O_4	2.83
Dolomite	$CaMg(CO_3)_2$	0.15
Gypsum	$CaSO_4.2H_2O$	0.2
Actinolite	$Na_{0.8}Ca_{1.73}Mg_{1.88}Mn_{0.16}Fe_{2.72}Fe_{0.32}Al_{0.32}Si_{7.68}O_{22}(OH)_2$	12.12
Plagioclase (Albite)	$NaAlSi_3O_8$	2.04
Plagioclase (Andesine)	$(Ca,Na)(Al,Si)_4O_8$	67.09
Chlorite IIb	$(Mg,Fe)_3(Si,Al)_4O_{10}(OH)_2\cdot(Mg,Fe)_3(OH)_6$	2.83
	Amorphous	**10.19**
	Total	**99.99**

Following characterisation, 3 samples were selected for this initial test work:

Name	Al_2O_3	Laboratory Number
YSB18439	24.68	RC1
YSB18448	23.86	RC2
YSB15446	24.07	RC3

Tests, results, and discussion

An initial leach was performed using standard Lava Blue processing conditions with approximately 100g of Surefire's sample material and following this initial small-scale digestion, a larger 400g sample was processed under the same conditions.

The leachate underwent a series of recrystalisation phases to synthesise aluminium chloride hexahydrate (**ACH**). A total of 3 crystallisations were conducted with the ACH results. These were analysed using a standard Inductively Coupled Plasma – Optical Emission Spectrometer (**ICP-OES**) and the final alumina purity was 99.57% from this initial result.

Investigation and previous test work by Lava Blue indicated that this initial lower purity result was not unexpected due to the sodium (Na) in the sample. When Na was excluded however, a calculated alumina purity result was projected to be 99.997% Al_20_3. See table 4

Table 4: ICP-OES analysis of ACH synthesised at each stage of the recrystallisation process with project purity (%) and HPA elemental composition and alumina purity (%).

Element	Concentration (mg/L)			
	RC1	RC2	RC3	Alumina
B	0.5068	0.1135	0.2150	2.375
Ca	39.16	1.575	1.537	3.385
Cr	4.918	1.908	0.9183	5.360
Fe	149.0	0.9263	0.08263	0.3660
K	2.262	0.00	0.09441	BDL
Mg	109.2	4.122	0.2895	2.284
Mn	2.218	0.8261	0.2768	0.8257
Na	5746	4158	1866	4152
Ni	0.5318	0.1363	0.1173	0.03040
Si	2.413	1.160	1.516	109.1
Ti	22.79	0.2862	0.02198	0.1603
V	45.52	2.415	0.1434	0.3024
Zn	0.4914	0.04736	0.1358	1.035
ACH purity (%)	**99.384**	**99.582**	**99.813**	
Projected Al_2O_3 purity (%)	**96.919**	**97.912**	**99.064**	
Projected Al_2O_3 purity (%) excluding Na %	**99.792**	**99.992**	**99.997**	
			Actual alumina purity (%)	**99.57**

It was concluded that with Na removed, other impurities in the Surefire Leachate do not prevent the desired 4N from being achieved. Refinements of the standard Lava Blue process to chemically remove the Na from the leachate was carried out via separate proprietary processes, method A and B. Both achieved 4N HPA purity. Results are shown in table 5 and 6 below.

Table5: ICP-OES results for the elemental composition of ACH and HPA, including projected alumina purity and final alumina purity obtained from method A.

	Concentration (mg/kg)			
Element	**RC1**	**RC2**	**RC3**	**Alumina**
ACH purity (%)	**99.977**	**99.998**	**99.999**	
Projected Alumina purity (%)	**99.893**	**99.992**	**99.994**	
			Alumina purity (%)	**99.991**

Table 6: ICP-OES results for the elemental composition of ACH and HPA, including projected alumina purity and final alumina purity obtained from method B.

	Concentration (mg/kg)			
Element	**RC1**	**RC2**	**RC3**	**Alumina**
ACH purity (%)	99.491	99.998	99.999	
Projected Alumina purity (%)	97.607	99.989	99.998	
			Alumina purity (%)	99.992

Conclusion

The initial test work successfully confirmed the production of 4N HPA (99.99%), (see plates 1,2 below). Projected Alumina purity was as high as 99.998% with an actual maximum Alumina Purity achieved of 99.992% HPA.

The difference in predicted and actual results was due to silicon impurity, which may have been contamination but in any event can be removed in any future test work program.

The achievement of 4N was a prerequisite set by the Company as this is a grade required for the current and emerging HPA markets.

Further test work, optimisation and refinement of the Lava Blue process for treating the Victory Bore material may improve on this value. A 5N product (if achieved) would place Surefire as one of the highest purity producers.

Plates 1,2: Some of the first 4N 9.99% HPA generated by Lava Blue from the Company's Victory Bore deposit.

Next Steps

Surefire is exploring the additional value of another Critical Mineral with HPA production, in parallel with its plans to produce high purity Vanadium for the emerging Vanadium Redox Flow battery sector and other Vanadium markets.

The conclusions by Lava Blue on this successful initial test work provided further recommendation on optimisation opportunities. The Company will now consider the next phase of test work and explore end user commercial discussions.

The Company is currently undertaking a Pre-feasibility Study (**PFS**) on the world class Victory Bore Vanadium Project and will now consider incorporating these findings into that study, which is scheduled for completion by November 2023.

Authorised for ASX release by the Managing Director.

Inquiries: Paul Burton Managing Director.

About HPA

HPA is a recognised high value Critical Mineral with pricing between US$25,000 – US$40,000 per tonne.

4N HPA is an in-demand material, used in applications including coatings for lithium-ion battery separators, LED production, and synthetic sapphire production. It has unique properties: Chemical stability, high melting point, high mechanical strength, high hardness, good thermal conductivity, high insulation.

For Electric Vehicles (EV), there is approximately 5Kg of HPA used in each vehicle *(source Mining, October 17, 2022*). Recently HPA has been more widely adopted for use in ceramic coated separators in the Li-ion batteries and this source of new demand is expected to increase in the coming decade.

For LED production, 4NHPA (99.99% pure) is used predominantly for sapphire glass production, the essential material upon which every LED in the world is made.

The LED market is set to grow even faster than the current estimated Compound Annual Growth Rate (**CAGR**) of around 11% because of the impending global ban on manufacture of compact fluorescent light bulbs starting in November 2023, followed by a proposed ban on manufacture of linear fluorescent tubes in November 2025. This will drive a significant part of the global lighting task to adoption of LEDs.

Global total demand for HPA in 2022 was estimated at around 80,000 tpa but with robust CAGR's of as much as 20% which promises as much as 200,000 tonnes of new global demand by the end of the decade. On top of the strong growth in demand for LEDs and ceramic coated separators, HPA is going through its own adoption curve into a wider range of applications, opening new market opportunities every year.

Virtually all HPA is manufactured today by chemical companies, utilising high purity, expensive aluminium metal as feedstock and a chemical process known as the alkoxide process. This technique allows producers to consistently meet 4N+ grade spec, but at relatively high overall product cost (*Source Scandium Int.).*

Some of the major companies using HPA are:

COMPANY	LOCATION	PRODUCTS
Baikowski	France	High Purity Alumina, Phosphor, Spinel, Zirconia, Polishing Solutions & Nano-Dispersions for ceramics and polishing applications
Bestry Performance Materials Co. Ltd	China	Micron-sized spherical alumina thermally conductive materials
Hebei Pengda New Material Technology Co. Ltd	China	Ceramic powder, high tech components and additives
Honghe Chemical	China	Electronic materials, technical ceramics, precision polishing, functional additives, catalyst, spraying materials, semiconductor materials and crystal materials
Nippon Light Metal Co. Ltd	Japan	Ceramics, electronics, additives
Polar Sapphire	Canada	Semiconductor, aerospace, medical, clean tech and green energy.
Rusal	Russia	
Sasol (USA) Corporation	USA	Advanced Materials; Base Chemicals; Essential Care Chemicals; and Performance Solutions
Shandong Keheng Crystal Material Technology Co. Ltd	China	Ceramics, electronics, additives
Sumitomo Chemical Co. Ltd	Japan	Energy-efficient products, high-performance polymer additives and rubber chemicals, as well as super engineering plastics and lithium-ion secondary battery materials used in electronic components and next-generation vehicles.
Xuancheng Jingrui New Materials Co. Ltd	China	Largest manufacture of nanometer oxide material in China

(Source: Mordor Intelligence)

About Lava Blue

Lava Blue is a successful minerals science company operating a long-term collaborative research agreement with the Queensland University of Technology and has developed methods for HPA production from a number of unconventional sources.

Using a range of aluminium rich waste materials and unconventional feedstocks the Lava Blue method has routinely produced >4N-HPA (>99.995% pure).

Lava Blue has recently commissioned a $5 million dollar R&D facility in Redlands, in Brisbane's southeast, to demonstrate scaled up processing methods for HPA.

Lava Blue's business plan is to run a licensing model based on IP, know-how and patents developed over the last 5 years in manufacturing HPA from a wide range of aluminium source materials. Lava Blue plans to support as many as 20,000 tonnes of new Australian HPA production utilising its proprietary systems and its HPA processing research and demonstration facility in Brisbane to establish licenced producers with demonstrated process flow sheets, lowest possible costs and high margins built on established QA/QMS systems and in depth understanding of down-stream market requirements.

Competent Persons Statements:

The information in this report that relates to exploration results has been reviewed, compiled, and fairly represented by Mr Horst Prumm, a Member of the Australian Institute of Mining and Metallurgy ('AusIMM') and the Australian Institute of Geoscience ('AIG') and a fulltime employee of Prumm Corporation Pty Ltd. Mr Prumm has sufficient experience relevant to the style of mineralisation and type of deposits under consideration to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Prumm consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to the Victory Bore Project Vanadium & Aluminium mineral resource estimations is based on work completed by Mr. Stephen Hyland, a Competent Person and Fellow of the AusIMM. Mr. Hyland is Principal Consultant Geologist with Hyland Geological and Mining Consultants (HGMC), who is a Fellow of the Australian Institute of Mining and Metallurgy and holds relevant qualifications and experience as a qualified person for public reporting according to the JORC Code in Australia. Mr Hyland is also a Qualified Person under the rules and requirements of the Canadian Reporting Instrument NI43-101. Mr Hyland consents to the inclusion in this report of the information in the form and context in which it appears.

The information in this report that relates to metallurgical results has been reviewed, compiled, and fairly represented by Mr Damian Connelly, a Member of the Australian Institute of Mining and Metallurgy ('AusIMM') and the Australian Institute of Geoscience ('AIG') and a fulltime employee of METS engineers. Mr Connelly has sufficient experience in the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Connelly consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

Forward Looking Statements:

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

JORC Code, 2012 Edition:
Section 1: Sampling Techniques and Data

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

Criteria	Commentary
Sampling Techniques	Samples were taken as splits from Reverse Circulation ("RC") drilling samples. Sample size was approximately 2kg – 3kg in weight.
Drilling techniques	62 X 140mm RC holes were drilled for a total of 5,189 metres. The Reverse circulation rig used a downhole hammer and face sampling button bit. Sample piles were recorded for each 6m rod. Rods were counted when pulled at the end of each hole. Given the relatively short hole length, no down hole surveying instruments were used.
Drill sample recovery	Geologist supervising the drilling program recorded each metre as it was drilled. Geological logs, samples logs, daily drill logs, and sample piles all recorded hole depths. No aberrations were found. All logs of sampling and drilling lengths matched. Each metre was recovered.
Logging	Samples were geologically logged to the level of detail deemed appropriate for mineral exploration, with details entered a geological database. Drilling logs record weathering, oxidation, mineralogy, colour, texture, structure accessory minerals sulphides and mineralisation. All logging is quantitative. The drill holes reported were logged in full.
Sub-sampling techniques and sample preparation	Three tier riffle splitters were used to take one metre samples. Samples were combined to form 2m composites using a 50% riffle splitter. Samples were sent to Lava Blue and QUT Queensland.
Quality of assay data and laboratory tests	All the experiments were carried out under supervision by Lava Blue personnel at the Queensland University of Technology (QUT) and followed the standard Lava Blue methods for producing high purity alumina (HPA). Only the size of the reaction varied. For the small scale experiments a 1L Schott bottle was used whereas for the larger scale experiments a 2L Schott bottle was used. Laboratory tests were carried under supervision by Lava Blue using their proprietary process. Assay and sample characterisation was carried out using XRF and QXRD. HPA analysis was by standard ICP-OES.
Verification of sampling and assaying	The Company completed verification of the drill data points and relied on internal laboratory QA/QC checks for assaying.
Location of Data Points	Initial drill hole collars were located with a Garman GPS. Final collar locations were located using a digital GPS, accuracy +/- 10mm. Drill hole location is reported using the GDA94_MGAz50 grid system. Drill hole collar was located by GPS. Elevation value is in AHD.
Data spacing and distribution	RC holes were drilled at approximately 25m across strike and 100m line spacings. The data spacing is considered sufficient to assume geological and grade continuity. It is expected that this drilling will allow the estimation of Inferred and Measured Mineral Resources. Samples were composited from 2m according to supervising geologist.
Orientation of data in relation to geological structure	The drill hole was angled perpendicular to the strike of the target horizon to achieve unbiased sampling of the target horizon. Drill intersections are not true widths.
Sample security	Samples were shipped in 2 separate shipments. Chain of custody of samples was managed by the Company, Lava Blue, QUT and the laboratory. Duplicates are retained by the Company.
Audits or reviews	The Company completed verification of the drill data points and relied on internal laboratory QA/QC checks for assaying.

Section 2: Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	The test work results in this report relate to samples collected from Exploration Licence E57/1036. This EL is 100% owned by Surefire Resources NL and is currently a M in application - M57/656.
Exploration done by other parties	Not Applicable. No other previous exploration Companies have assessed the Victory Bore deposit for HPA.
Geology	The Project occurs within the Atley Igneous Complex in the East Murchison Mineral field of Western Australia. The Atley Intrusion is an Anorthosite body that is elongate in an NNE/SSW orientation and runs along the axis of the regional scale Youanmi Fault, a regionally dominant geological feature. Further drilling and assaying is required to fully assess the geology and style of mineralisation. Mineralogy and petrology studies completed suggest that host rocks are historical magnetite layers within intrusive Anorthosite, gabbro and ultra mafics.
Drill hole Information	Drill hole collar and downhole orientation and depth information is tabulated and stored. No information has been excluded.
Data aggregation methods	Where assays were composited for summary purposes, all assays were weighted by drill interval. No high-grade cuts have been applied to the sample data reported. Where assays were composited for summary purposes, all assays were weighted by drill interval. No metal equivalent values are used
Relationship between mineralisation widths and intercept lengths	The orientation of mineralization relative to the drill hole is depicted in figures. Drill intersections are not true widths. All drill hole results reported are downhole length, true widths are approximately 82.6% of the down hole widths. All drill hole results reported are downhole length, true widths are shown on figure 3 and in the text.
Diagrams	Appropriate diagrams are included in the main body of this report.
Balanced Reporting	Reporting of the test work results is considered balanced.
Other substantive exploration data	No additional meaningful and material exploration data has been excluded from this report.
Further work	Further test work is planned to refine and optimise the HPA extraction process.