21 March 2022



# EXPLORATION COMMENCED AT FREDERICK PROJECT

# **HIGHLIGHTS**

- Field work has commenced at the Frederick Project located in the Gascoyne region of Western Australia, which is in a similar geological setting to Galena Mining's Abra Pb-Ag Deposit, a globally significant lead-silver project within the Edmund Basin.
- A detailed ground gravity survey has been completed over the eastern half of the Project, which will compliment previous surveys over the western part of the Project.
- The gravity survey will provide detailed data over prospective lithologies within the Project area, and will assist with targeting as the Company progresses towards the first drill campaign.
- An in-depth review of historic data has identified high priority geochemical anomalies, which require field validation prior to drill targeting.
- This is the first exploration undertaken by Pantera at Frederick, with the Project subject to only light exploration in the past via surface geochemistry and limited geophysical surveys (Fig 1).
- Field work at Frederick complements that undertaken at Pantera's other projects and aligns with the Company's strategy of year round exploration.
- Pantera has outlined an exploration plan to be undertaken at Frederick over the next nine months.

# Pantera Minerals CEO, Matt Hansen, commented:

"We are very pleased to announce that field exploration has commenced at the Frederick Project, with a comprehensive ground gravity survey completed last week. The commencement of field exploration at Frederick is an important step in the growth of Pantera.

The gravity survey will be instrumental in refining geological interpretation and planning upcoming drilling, and importantly, the Project has a similar geology to that of the nearby Abra Deposit, providing shareholders with an exciting exploration opportunity over the coming period."





Pantera Minerals Limited (**ASX:PFE**) ("**Pantera**" or the "**Company**") is pleased to announce the commencement of field exploration at its 100% owned Frederick Project (E09/2469) ("**Frederick**", "**Project**"), located in the Gascoyne region of Western Australia, following the completion of a ground gravity survey over prospective geology, along with an in-depth review of all available surface sampling.



Figure 1 - Tenement map showing the new ground gravity survey area and high priority geochemical anomalies, over GSWA 100K geological mapping

# **GROUND GRAVITY SURVEY**

The detailed ground gravity survey consisted of 877 stations on a 400m x 400m grid in a sparsely explored area of the Project, over the Irregully Formation and Kiangi Creek Formation sediments. This geophysical survey will provide full detailed gravity coverage over lithologies considered prospective for base and precious metal mineralisation, and will assist with exploration targeting.

The Irregully Formation within the tenement area has been complexly folded and faulted with an interpreted, doubly plunging anticline underlying a surface geochemical anomaly of elevated lead, zinc and copper. Associated with this interpreted fold and geochemical anomaly is a coincident gravity geophysical anomaly, which has a similar geological setting to Galena Mining's Abra Deposit Pb-Ag, a globally significant lead-silver project located in the Gascoyne region (ASX:G1A - 34.5Mt @





7.2% Pb and 17g/t Ag<sup>1</sup>). Exploration at Frederick complements exploration undertaken at Pantera's Hellcat project and aligns with the Company's strategy of year-round exploration.

Finalised data from the survey is expected in four weeks, which will be followed by review and interpretation from consultant geophysists.

# HISTORIC DATA COMPILATION AND TARGETING

Data compilation of historic surface geochemical sampling has been completed, generating a geochemical database with over 3,000 soil and lag samples, predominantly from the western half of the Project. The geochemical data was levelled to allow comparison between sample type and analytical technique. Only one third of the tenement has been effectively explored via surface geochemistry.

The in-depth review of the historic sampling has outlined multiple geochemical anomalies, with four of these being high priority. This review indicates that surface geochemical sampling has been effective at outlining anomalous base metal geochemistry (Pb-Zn-Cu) in the region, and that further surface sampling of prospective lithologies is warranted over the eastern half of the tenement, particularly over any gravity-high anomalies. This work will be planned once the results of the gravity survey are received and is anticipated for Q2 2022.

# LOCATION

The Frederick Project comprises one exploration licence covering an area of 275km<sup>2</sup> and is located 875km north-northeast of Perth and 348km northwest of Meekatharra in the Upper Gascoyne region of Western Australia. Importantly, the Project is located 170kms to the northwest from Galena Mining's Abra Pb-Ag Deposit, a globally significant lead-silver project located in the Gascoyne region.

### GEOLOGY

The Frederick Project is located in the Mesoproterozic Bangemall Basin, one of a series sedimentary basins formed between the Archaean Yilgarn and Pilbara cratons. The basinal structure and depositional history of the contained sediments is dominated by horst-and-graben style tectonics. The stratigraphic sequence starts with coarse continental clastic sediments, which were deposited unconformably on the older Proterozoic and Archaean basement as alluvial fan and river channel deposits.

The Frederick Project is considered prospective for sediment hosted Pb-Ag-Zn deposits similar in style to that of the Galena Mining (ASX:G1A) Abra Pb-Ag Deposit, located 170km to the southeast and within the same stratigraphy.

The Frederick Project is only lightly explored with the majority of the Project area under cover.

<sup>&</sup>lt;sup>1</sup> Galena Mining Limited ASX Announcement 28 April 2021 'Galena Achieves 2020 Drilling Objectives at Abra - Updates MRE'







Figure 2 - Frederick Project Location Map showing tectonic zones.

# FREDERICK PROJECT NEXT STEPS

The following exploration activities are to be undertaken over the coming nine months:

- Review, process and interpret the ground gravity survey data (~4 weeks).
- Further surface geochemical sampling in areas of high gravity anomalism (Q2 2022).
- Field validation, verification and mapping of outlined geochemical anomalies (Q3 2022).
- AC or RC drilling of highest priority targets (Q4 2022).

This release is authorised by the Board of Directors of Pantera Minerals Limited.

- END -





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# **Competent Person's Statement**

The information in this report that relates to exploration results and exploration targets is based on and fairly represents information compiled by Ms Georgina Clark, a Competent Person who is a Member of the Australian Institute of Geoscientists. Ms Clark 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' ("JORC Code"). Ms Clark consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

All parties have consented to the inclusion of their work for the purposes of this announcement. The interpretations and conclusions reached in this announcement are based on current geological theory and the best evidence available to the author at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however might be, they make no claim for absolute certainty. Any economic decisions which might be taken on the basis of interpretations or conclusions contained in this presentation will therefore carry an element of risk.





# Appendix A JORC Code Table 1 – Frederick Project

#### Section 1 Sampling Techniques and Data

Drilling and sampling results reported in this report refer to historical results taken from exploration reports lodged by previous explorers over the prospects which are available on the West Australian Geological Survey WAMEX online database. Details refer to the specific WAMEX reports.

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. 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.	<ul> <li>A ground gravity survey has been completed, with results expected in four weeks.</li> <li>Results reported have been taken from the exploration reports on the work submitted to the Western Australian Department of Mines, Industry Regulation and Safety, available on the WAMEX online database.</li> <li>All drilling and soil/rock chip data is from historical drilling undertaken by BHP (1984 to 1986 -A015620 and A019281) and Dolphin Resources (A077277, A085619, A089142 and A094468) and Encounter Resources (A078776, A082572 and A087063) between 2006 and 2013.</li> <li>Standard soil sampling, rock chip sampling, RAB drilling and Diamond drilling practices were used.</li> </ul>
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	<ul> <li>Sampling techniques vary between the different drilling campaigns and information has been taken from open file reports.</li> <li>Specific details are typically not reported, including measures taken to ensure sample representivity.</li> </ul>
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	<ul> <li>Data from drilling has been derived from historic reports, which did not detail specifics about sampling or laboratory techniques.</li> <li>Sample intervals range from 1 m sample for diamond drilling to 4 m composite samples for RAB drilling.</li> </ul>
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	<ul> <li>Diamond drilling and rotary air blast drilling (RAB) drilling techniques were used.</li> <li>Sampling techniques for the various drilling campaigns are not specified in the WAMEX reports.</li> <li>There is no mention of whether the drill core was oriented or if the diamond drill holes were surveyed for dip and azimuth. The core diameter is not mentioned.</li> </ul>
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Recovery information was not reported.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Not reported.





Criteria	JORC Code explanation		Commentary
	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.	•	Not reported.
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.	•	Geological logging was completed on 1 m or 2 m intervals. A Mineral Resource has not been determined from this drilling data.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	•	Geological logging is generally qualitative in nature.
	The total length and percentage of the relevant intersections logged.	•	All holes have geological logging.
Sub-sampling techniques and	If core, whether cut or sawn and whether quarter, half or all core taken.	•	Diamond drill core from BHP was half cut using a diamond saw.
preparation	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	•	Not reported.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	•	Not reported.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	•	Not reported.
	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.	•	Not reported.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	•	Not reported.
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.	•	Diamond drill samples from BHP were analysed by Resource Development Laboratories in Perth with Au assayed by Fire Assay 50 and Cu, Pb, Zn and Ag assayed by AAS method. This is considered a partial method. Soil samples taken by BHP were analysed by Analabs in Perth by AAS method. This is considered a partial method. Lag and soil samples taken by Dolphin resources between 2008 and 2009 were analysed by Niton pXRF in the field and this is considered a partial method. Lag and soil samples taken by Dolphin Resources in 2010 and 2011 were analysed by Ultratrace in Perth using 4M HC1 digestion which is a partial digest analysis. Lag, soil and soil samples taken by Encounter Resources in 2009 were analysed using a Niton pXRF in the field and this is a partial method.
	instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	•	Niton pXRF was used for soil sampling by Dolphin Resources between 2008 and 2009 and by Encounter Resources in 2009. The reading times and calibration used was not mentioned.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	•	Not recorded.



Criteria	JORC Code explanation		Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	•	Original reports, drill logs and assay results have been visually reviewed by Pantera Resources.
	The use of twinned holes.	٠	No holes have been twinned.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	•	Drilling data has been obtained from WAMEX open file reports. Drilling data is a mixture of PDF documents and as .xls files. These will need to be combined to create a digital drilling database of historical exploration.
	Discuss any adjustment to assay data.	٠	Assay data has not yet been adjusted.
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.	•	The accuracy of drillhole locations is unknown.
	Specification of the grid system used.	•	The soil samples and drill hole conducted by BHP reference a local grid with the original of this grid being unknown. The lag and soil samples and drillholes conducted by Dolphin Resources are referenced to MGA95 Zone 50. The lag and soil samples conducted by Encounter Resources are referenced to MGA95 Zone 50.
	Quality and adequacy of topographic control.	•	There is no elevations recorded in any of the historic drilling.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	•	The drill spacing is suitable for reconnaissance programmes.
	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	•	Drilling is at an exploration stage and the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation is not relevant. A Mineral Resource has not been determined from this drilling data.
	Whether sample compositing has been applied.	•	No downhole compositing has been applied.
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.	•	There is insufficient information to determine if the orientation of sampling in the reported drillhole is unbiased.
	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.	•	It is not yet known if any sampling bias has been introduced during the historic drilling process.
Sample security	The measures taken to ensure sample security.	•	Historic information and no measures were taken to ensure sample security have been documented.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	•	No audits or reviews of sampling techniques and data have been documented.

# Section 2 Reporting of Exploration Results

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	• The Frederick Project, consists of one Exploration Licence, E09/2469, covering 88 blocks and is located 348 km northwest by of Meekatharra in the Upper Gascoyne region of Western Australia. Access from Perth is via the



Criteria	JORC Code explanation	Commentary
	royalties, native title interests, historical sites, wilderness or national park and environmental settings. 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.	<ul> <li>Great Northern Highway to Meekatharra and then on the Landor-Meekatharra road to Mt Augustus which is located 25 km southeast of the tenement. The tenement can also be accessed from Carnarvon (483 km). A good network of station tracks provides access within the tenement.</li> <li>The Project is within the traditional lands of the Burringurrah Milly Milly people.</li> <li>There are no joint venture or royalty agreements associated with the tenement.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The majority of past exploration work within the project area including drilling, surface sampling; geophysical surveys, geological mapping has been largely completed in the 1980s by BHP and from 2005 to 2013 by Dolphin Resources and Encounter Resources.</li> <li>The reports are available on the West Australian Mines Department WAMEX open file library.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Frederick Project is located in the Mesoproterozoic Bangemall Basin, one of a series of sedimentary basins formed between the Archaean Yilgarn and Pilbara cratons. The basinal structure and depositional history of the contained sediments is dominated by horst-and-graben style tectonics. The stratigraphic sequence starts with coarse continental clastic sediments, which were deposited unconformably on the older Proterozoic and Archaean basement as alluvial fan and river channel deposits. These lenticular occurrences of basal terrigenous clastic rocks, exemplified by Mt Augustus, were overlain by finer sandstones, siltstones, shales and carbonates of the Edmund Group and intruded by mafic sills. The entire basin is folded on east-west to westnorthwestern axes.</li> <li>The project area predominantly consists of dolomites, sandstones and siltstones of the Irregully Formation with the western block of E09/2469 is completely concealed by alluvium which appears to have developed as part of a precursor drainage system to the present-day Frederick River and Koorabooka Creek. A tightly folded sequence including outcrops of chert (Discovery Formation) and sandstone (Ullawarra Formation), intruded by dolerite sills is exposed in the eastern portion of the tenement.</li> <li>Within the project area and adjacent to there are several noted mineral occurrences of stratiform Pb-Zn-Ag hosted within dolomites (Deep Frederick Well and Koorabooka Creek). These are likely to be analogous to the Abra Pb-Zn-Ag deposit of Galena Mining some 170km to the east which is situated in the same stratigraphy.</li> <li>There are two strongly geochemically anomalous areas (484,000E/7,738,600N and 475,300E/7,334,200N) defined by soil and lag sampling with elevated Pb and Zn values.</li> </ul>
Drillhole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following</li> </ul>	<ul> <li>Information on past drilling and surface sampling is available in exploration reports mentioned in section 1 and the main report.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>information for all Material drillholes:</li> <li>easting and northing of the drillhole collar</li> <li>elevation or RL (elevation above sea level in metres) of the drillhole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth hole length.</li> </ul>	<ul> <li>The document is only intended to provide a summary of past exploration activity and principal targets identified.</li> <li>The Project is at an exploration stage of assessment and only significant results have been tabulated for practical reasons. The location of these holes and the relationship to other holes (without significant) results are shown in the various diagrams.</li> </ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> </ul>	<ul> <li>Some of the targets are preliminary in nature and results are reported at low detection levels.</li> <li>No metal equivalent values have been reported.</li> <li>No high grade cut offs have been used.</li> <li>No intercepts have been reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>Due to the small amount of drilling and the fact that drilling to date has not intercepted any significant mineralisation the relationship between the drillhole angles and any mineralisation is not yet known.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>Diagrams are supplied in the main report.</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>The report has been prepared to highlight the main targets and positive soil and lag sample results based on past exploration within the project area. Not all exploration results are shown for practical purposes.</li> </ul>
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>Exploration work to date has largely been of a preliminary or reconnaissance nature. The company is aware of regional scale aeromagnetic surveys and geological mapping programme undertaken by past explorers and has access to versions of the data that is available in reports. Surface soils, rock chip sampling and reconnaissance drilling programmes have been undertaken over many parts of the project area.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul> <li>Further exploration will include:</li> <li>Review of ground gravity survey results</li> <li>Surface sampling</li> <li>AC or RC drill highest priority targets</li> <li>Diagrams in the report provide details of the principal targets within the project area based on work of past explorers.</li> </ul>

