

31 May 2024

Exploration update – New Manganese Prospect Defined with Assays up to 58.4% Mn

HIGHLIGHTS

- Newly named “Dasidara” Manganese Prospect grab samples retuned **58.4% Mn and 53.7% Mn** from river-concentrated cobblestone bands within RP-04 (Figure 1)
- A manganese stockpile located within RP-03, at the site of a historical Japanese World War 2 port, has returned assays of **57.1% Mn and 58.1% Mn** from grab samples
- All samples show very low phosphorous levels and exceptional Fe:Mn ratios and will be highly sought after for manganese feedstock for smelters
- Geological reconnaissance within the newly granted 503.7km^2 tenure is defining manganese mineralisation over the 30km strike of the Noni Formation (Figure 2)
- Proposals to commence trenching and drilling are being readied to assist in the quantification of the high-grade manganese material within the three granted Exploration and Evaluation Licenses
- Additional laboratory equipment has landed in Dili and is being commissioned, giving the company access to gold detection through the system



Figure 1: Layer of concentrated high-grade manganese cobbles within creek sediments at the Dasidara Manganese Prospect

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Estrella Resources Limited (**ASX: ESR**) (**Estrella** or the **Company**) is pleased to announce an update to exploration activities in the Lautém Municipality of Timor-Leste and the discovery of the new Dasidara manganese prospect.

Commenting on the anticipated work program, Estrella Managing Director Chris Daws said:

"In just a very short period of time, our exploration team has made several promising manganese discoveries within our tenements in Timor-Leste. Indications are the manganese is very high grade, low in deleterious elements and has excellent Fe to Mn ratio, which is highly sort after material by world markets.

Our work is ongoing and falls in a backdrop of significant manganese demand with rising prices. Manganese has risen more than 90% in the past three months and with the Groote Eylandt Mn Mine out of action until 2nd Quarter of CY 2025 this price action is likely to continue.

With more successes likely as we progress our work, I very much look forward to keeping everyone updated on what has already been excellent progress."

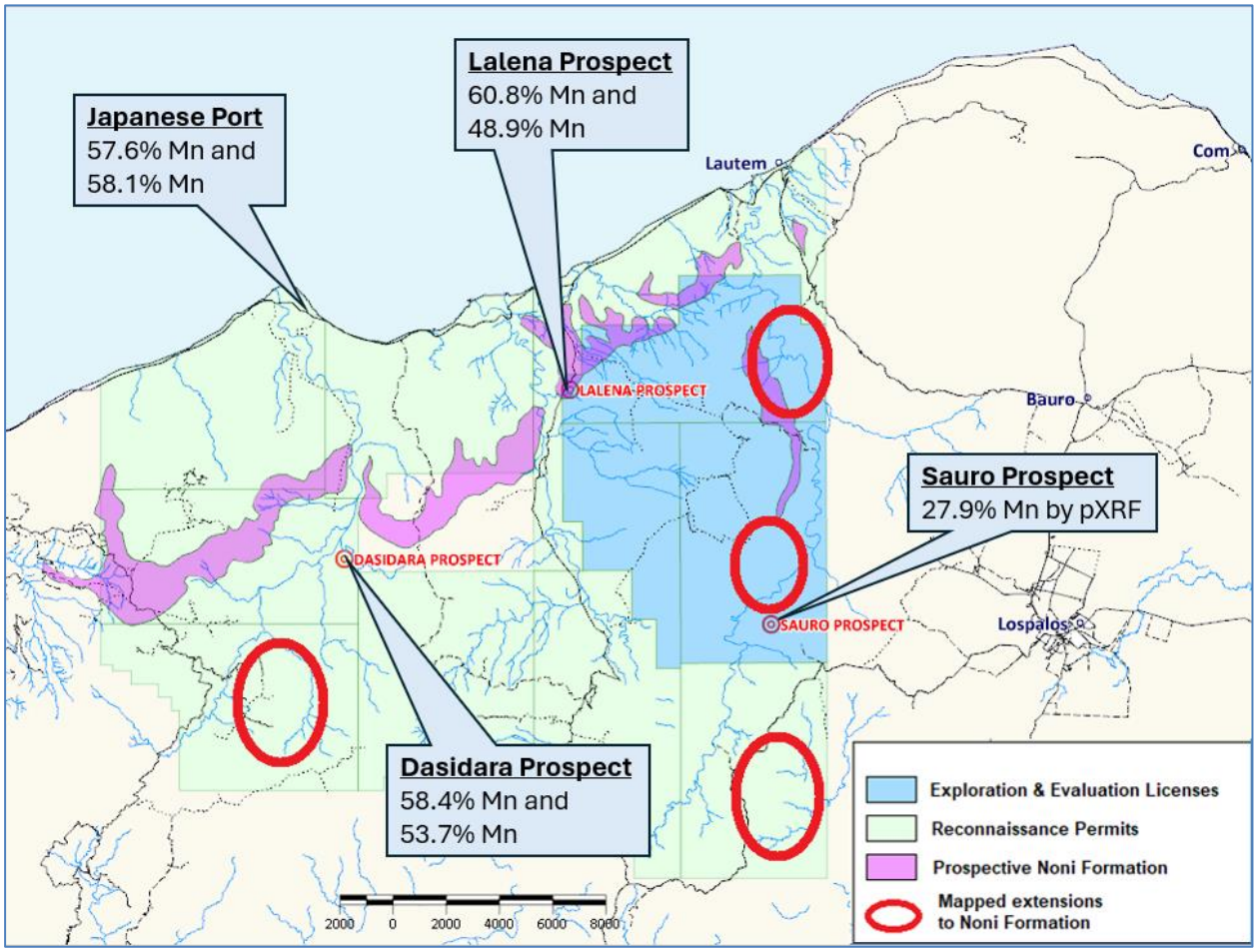


Figure 2: Lautem project with Noni Formation highlighed (in green) and the four prospects defined to date. The red circles indicate extensions to the Noni Formation mapped outside previous known extents

The Dasidara Prospect is located near to the Laivai River which forms the border between the municipalities of Baucau to the west and Lautém to the east.

Mineralisation consists of gravity concentrations of manganese-rich cobblestones that are derived from the deep weathering of the nearby Noni Formation. The Noni Formation is essentially a mud-filled basin that formed on the northern side of the uplifted, Permian-aged Timor Platform.

During uplift, heat sources associated with volcanism along subducted plate margins helped drive seawater convection through sediments, dissolving manganese that had been deposited and long buried on the ancient sea floor and depositing it as VMS-style accumulations within the Noni Formation cherts.



Figure 3: Formation of high-grade manganese oxides within the top 50cm of the soil profile at the Sauro Manganese Prospect

Weathering, lateritisation and erosion has moved manganese oxides from where they formed, near the top of the soil profile to thickened layers within local creeks where the manganese cobbles get concentrated over time.

Evidence of the lateritisation and enrichment process can be seen in Figure 3, a photo taken at the Sauro Manganese Prospect in ZA002 where thick manganese-rich bands have been uncovered just below the surface in the Noni Formation.

Over time these bands become eroded and relocated down-slope into local creeks (Figure 4 and samples ESRTL-03 and ESRTL-05) where they accumulate in layers thick enough to have been mined by the Japanese in World War 2 (Figure 5 and ESRTL-02 and ESRTL-04).



Figure 4: Manganese-rich cobbles accumulating in creeks from the Dasidara Manganese Prospect

World War 2 Japanese port Mn stockpile

A stockpile around 15m by 10m of high-grade manganese has been located at a known historical Japanese WW2 port location. Two grab samples from this location returned 57.1% Mn and 58.1% Mn from the lab. The stockpile is on the coast, 10km down the Laivai River from the Dasidara Prospect.



Figure 5: Manganese stockpile from Japanese WW2 port location. Present in photogragh is Chris Daws (Managing Director Estrella Resources), Steve Warriner (Exploration Manager) and Estrella's local Timorese representatives.

An additional 5 grab samples have been analysed by ALS in Perth with the results reported below.

Sample ID	Prospect	Description	Lat (WGS84)	Long (WGS84)	Mn %	P (ppm)	Fe %	Mn : Fe Ratio
ESRTL-01	Lalena	Weathered Mn Nodule	126.8318	-8.4325	**48.9**	870	1.43	34
ESRTL-02	Japanese Port	Stockpile Mn	126.7421	-8.4106	**57.6**	1080	0.42	137
ESRTL-03	Dasidara	River Bedding	126.7568	-8.4925	**58.4**	320	0.17	344
ESRTL-04	Japanese Port	Stockpile Mn	126.7421	-8.4106	**58.1**	1230	0.27	215
ESRTL-05	Dasidara	River Bedding	126.7551	-8.4923	**53.7**	1080	0.17	316

Table 1: Results of samples analysed by ALS.

The Company has successfully mobilised crushing and other laboratory equipment to Timor-Leste to give it the ability to test and report multi-element pXRF results from within the country, including the use of the Portable ppb gold detection system. Select samples are returned to Australia for standard laboratory analysis as standard reference checks. This will alleviate sample bottlenecking and vastly improve analysis times to enable exploration to progress at a much faster pace. The Company has also initiated discussions with our Timor partners on how the release and export of samples can be simplified now that Timor-Leste's Mining Code framework is in place as current processes were developed prior, again this will speed up timelines.



Figure 6: Crusher / Pulverisor and pXRF analysis system set up at Estrella's office in Dili with samples ready.

The Managing Director has authorised for this announcement to be released to the ASX.

FURTHER INFORMATION CONTACT

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Cautionary Statement of pXRF

PXRF results that are announced in this report are preliminary only. The use of the PXRF is an indication only of the order of magnitude of expected final assay results. The samples that are the subject of this report will be submitted for laboratory assay and some variation from the results presented herein should be expected.

Competent Person Statement

The information in this announcement relating to Exploration Results is based on information compiled by Beau Nicholls, who is the Exploration Manager for Estrella Timor-Leste, and a fellow of The Australasian Institute of Geoscientists, and Mr Steve Warriner, who is the Group Exploration Manager for Estrella Resources and a member of the Australian Institute of Geoscientists. Mr. Nicholls and Mr. Warriner have sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves”. Mr Nicholls and Mr Warriner consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

Table 2: ALS analysis of samples; note Mn % = MnO divided by 1.2912

	ME-GRA05	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s	ME-XRF26s
	LOI	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SO3	SiO2	TiO2
Sample	%	%	%	%	%	%	%	%	%	%	%	%	%	%
ESRTL-01	10.95	3.37	0.01	0.36	0.01	2.41	0.68	0.73	63.13	0.33	0.22	0.02	11.85	0.21
ESRTL-02	12.53	0.95	0.4	<0.01	0.01	1.06	0.13	0.15	74.4	0.02	0.26	0.12	4.77	0.07
ESRTL-03	12.36	1.04	2.06	0.78	0.01	0.67	0.15	0.14	75.44	0.06	0.08	0.64	1.34	0.06
ESRTL-04	13.5	0.86	0.25	1.91	0.01	0.66	0.11	0.15	75.08	0.04	0.3	0.05	1.22	0.04
ESRTL-05	11.53	0.59	0.31	0.83	<0.01	0.74	0.09	0.12	69.29	0.03	0.25	0.06	10.42	0.02

APPENDIX 1 JORC TABLE 1 – TIMOR-LESTE EXPLORATION

Section 1 - Sampling Techniques and Data

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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *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.*	• Determination of mineralisation has been based on geological mapping, visual mineral estimates and confirmation of metallic concentration using a Bruker S1 Titan Portable XRF instrument. • Initial rock-chip samples were taken and dispatched through customs and quarantine to ALS in Malaga for multi-element analysis. • Samples were analysed using a 4-acid digest, ME-MS for 61 elements and ME-XRF for over-grade manganese on a 50g sub-sample.
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).*	• No drilling has been undertaken to date.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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 has been undertaken to date.
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Rock-chip samples were geologically logged for mineral content prior to sending for assay or screening by pXRF.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all*	• Sample sizes are appropriate to the grain size of the mineralisation. • The exploration program is in its very early stages and initial sample sizes were kept small due to freight and customs / quarantine restrictions. They are not considered representative of the bulk of mineralisation.

Criteria	JORC Code explanation	Commentary
	sub-sampling stages to maximise representivity of samples. • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	
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.* • *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.* • *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.*	• Samples are selected based on geological logging. Samples have been dispatched to an accredited commercial laboratory in Perth for analysis. • Preliminary samples are being analysed at ALS in Malaga using a 4-acid digest, ME-ICP for 61 elements and all samples are also being tested for Pt, Pd and Au by fire assay and ICP-MS finish on a 50g sub-sample. • Standards and blanks have not been included in this early phase of the program. • Current field samples are being analysed by pXRF. The Cautionary statement is included when assessing pXRF.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No prior modern exploration has been conducted in the area. • No adjustments to assay data were undertaken.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• GPS equipment using MGA94, Zone 52 coordinate system with an accuracy of +/- 5m. • Topographic control using 30m spaced satellite point data.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• No systematic sampling has been conducted at this early stage.
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.* • *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.*	• No orientation-based sampling bias has been identified.
Sample security	• *The measures taken to ensure sample security.*	• Exported samples are in the possession of ESR personnel from field collection to customs submission in Dili. • Non-exported samples remain with ESR personnel.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No independent audit or review has been undertaken.

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 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 license to operate in the area.*	• Exploration and Evaluation Concessions MEL2023-CA-ZA001, MEL2023-CA-ZA002 and MEL2023-CA-ZA003 are awarded to Estrella Murak Rai, forming the joint-venture between Estrella Resources Representante Permanente (70%) and Murak Rai Timor (30%). • Reconnaissance Permits ESR-RP-01, ESR-RP-02, ESR-RP-03, ESR-RP-04, ESR-RP-05, ESR-RP-06, ESR-RP-07 and ESR-RP-08 are awarded to Estrella Resources Limited Representante Permanente (100%) • Estrella Resources Limited Representante Permanente is registered in Timor-Leste and is a wholly-owned subsidiary of Estrella Resources Limited (Australia). • All of the Concessions and Permits are current and in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The first exploration was conducted by Allied Mining Corporation in 1937 during which mineral potential was discovered. Very small scale mining of manganese, gold and construction material was conducted. The exploration was not systematic and hampered by difficult access. • Other work in the early 2000's has been conducted by the Pacific Economic Cooperation Council -PECC Minerals Network to assist Timor-Leste to understand and develop its minerals potential. • Other local geologists and companies have sporadically explored the area however there has been no documentation collected nor systematic exploration to quantify mineral occurrences. • No minerals drilling has taken place. • No close-spaced geophysics has taken place. • No systematic, modern exploration has taken place. • The Geological Institute of Timor-Leste (IGTL) has recently (and still is) conducting stratigraphic analysis and fossil dating to reconstruct the geological history of Timor-Leste.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The current Permits host three main forms of manganese mineralisation. • Primary mineralisation can be found in stratigraphic banded cherts and banded irons formed from direct precipitation of manganese onto the sea floor. Evidence for both microbial and inorganic processes exist. • Additional primary mineralisation exists as pisolithic concretions and direct precipitates within deep-sea limestones. • Secondary mineralisation exists in the form of small to extremely large clasts of manganese mineralisation associated with the Bobonaro Formation, a melange that is a lithotectonic unit composed mostly of broken, clay-rich layers that are mixed to varying degrees with structurally

Criteria	JORC Code explanation	Commentary
		and stratigraphically overlying units. This unit represents an under-sea collapse zone containing multiple manganese clasts over a very large area. • Tertiary mineralisation exists where high rainfall and erosion has sorted and concentrated detrital manganese into river paleo-channels. • Alluvial gold mineralisation has been reported in the area however no exploration has been undertaken. • Estrella will use and expand upon the current known stratigraphy to evaluate and document mineralisation styles and relate them back to the tectono-stratigraphic genesis of the area.

Drill hole information	• *A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:*
	  • *easting and northing of the drill hole collar*
	  • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  • *dip and azimuth of the hole*
	  • *down hole length and interception depth*
	  • *hole length*
	• *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 has been undertaken in the area.

Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Exploration results with all relevant drillhole information are reported in the body of the text. • No aggregation methods have been used. • Metal equivalent values have not been used.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Any relationships have been discussed within the body of the text.
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.*	• Relevant diagrams have been included within the main body of text.
Balanced Reporting	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and*	• No new information has been withheld.

Criteria	JORC Code explanation	Commentary
	other locations used in Mineral Resource estimation. • *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.*	
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.*	• No other substantive data exists as the program is in its early stages. • All observations are discussed within the body of the text.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further work by ESR will include systematic mapping and sampling along with stratigraphic and structural classification.