

# WESTERN AUSTRALIA

## Selected exploration and mining highlights



Government of Western Australia  
Department of Mines, Industry Regulation and Safety

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Geological Survey of  
Western Australia

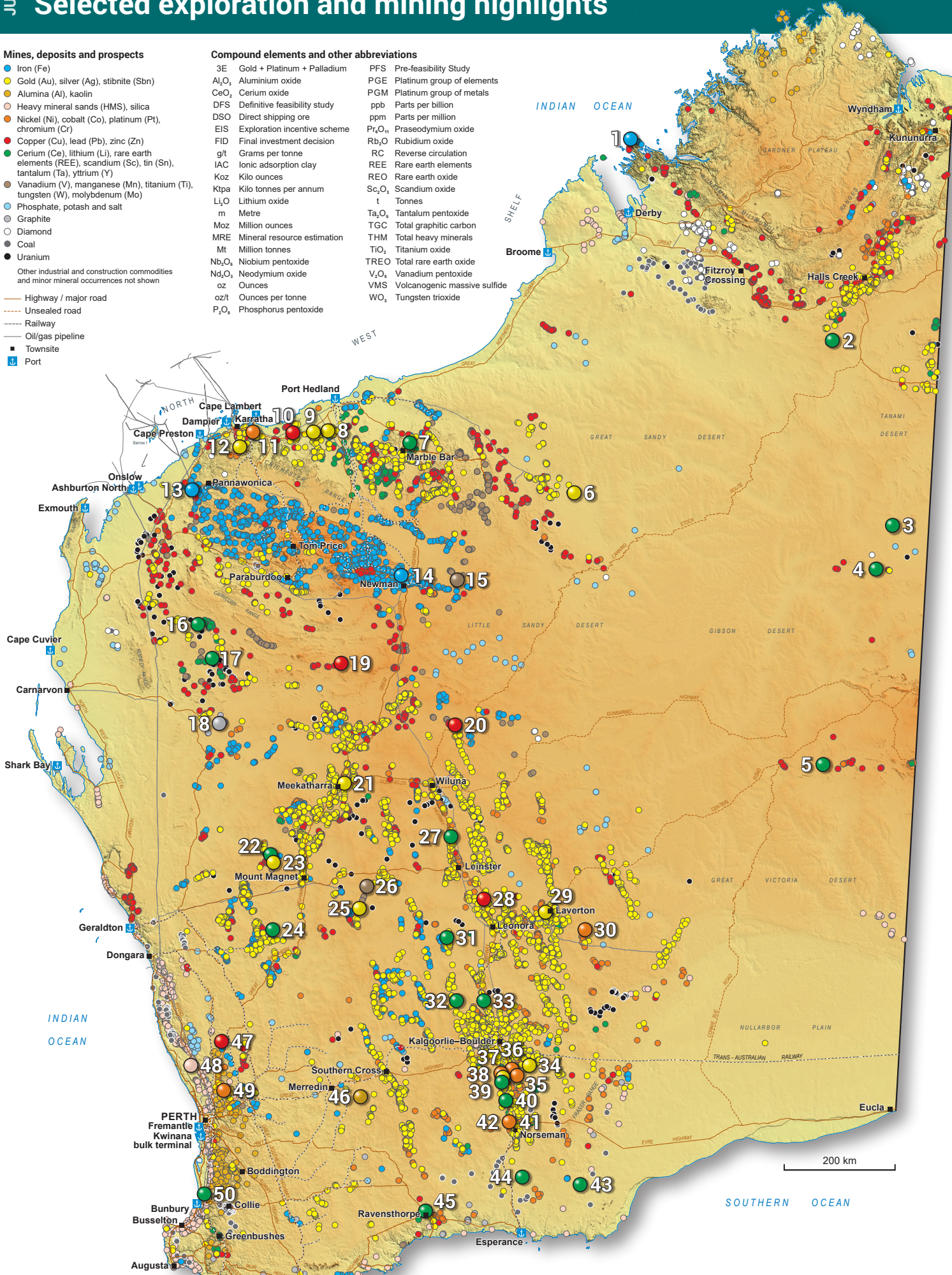


### Mines, deposits and prospects

- Iron (Fe)
- Gold (Au), silver (Ag), stibnite (Sbn)
- Alumina (Al), kaolin
- Heavy mineral sands (HMS), silica
- Nickel (Ni), cobalt (Co), platinum (Pt), chromium (Cr)
- Copper (Cu), lead (Pb), zinc (Zn)
- Cerium (Ce), lithium (Li), rare earth elements (REE), scandium (Sc), tin (Sn), tantalum (Ta), yttrium (Y)
- Vanadium (V), manganese (Mn), titanium (Ti), tungsten (W), molybdenum (Mo)
- Phosphate, potash and salt
- Graphite
- Diamond
- Coal
- Uranium
- Other industrial and construction commodities and minor mineral occurrences not shown
- Highway / major road
- Unsealed road
- Railway
- Oil/gas pipeline
- Townsite
- Port

### Compound elements and other abbreviations

- 3E Gold + Platinum + Palladium
- Al<sub>2</sub>O<sub>3</sub> Aluminium oxide
- Co<sub>2</sub>O<sub>3</sub> Cerium oxide
- DFS Definitive feasibility study
- DSO Direct shipping ore
- EIS Exploration incentive scheme
- FID Final investment decision
- g/t Grams per tonne
- IAC Ionic adsorption clay
- Koz Kilo ounces
- Ktpa Kilo tonnes per annum
- Li<sub>2</sub>O Lithium oxide
- m Metre
- Moz Million ounces
- MRE Mineral resource estimation
- Mt Million tonnes
- Nb<sub>2</sub>O<sub>5</sub> Niobium pentoxide
- Nd<sub>2</sub>O<sub>3</sub> Neodymium oxide
- oz Ounces
- oz/t Ounces per tonne
- P<sub>2</sub>O<sub>5</sub> Phosphorus pentoxide
- PFS Pre-feasibility Study
- PGE Platinum group of elements
- PGM Platinum group of metals
- ppb Parts per billion
- ppm Parts per million
- Pr<sub>2</sub>O<sub>3</sub> Praseodymium oxide
- Rb<sub>2</sub>O Rubidium oxide
- RC Reverse circulation
- REE Rare earth elements
- REO Rare earth oxide
- Sc<sub>2</sub>O<sub>3</sub> Scandium oxide
- t Tonnes
- Ta<sub>2</sub>O<sub>5</sub> Tantalum pentoxide
- TGC Total graphic carbon
- THM Total heavy minerals
- TiO<sub>2</sub> Titanium oxide
- TREO Total rare earth oxide
- V<sub>2</sub>O<sub>5</sub> Vanadium pentoxide
- VMS Volcanogenic massive sulfide
- WO<sub>3</sub> Tungsten trioxide



We respectfully acknowledge Aboriginal peoples as the Traditional Custodians of this land on which we deliver our services to the communities throughout Western Australia. We acknowledge their enduring connection to the lands, waterways and communities and pay our respects to Elders past and present.

<b>EIS</b>	<b>1</b>	<b>Cockatoo Island</b> Iron ore Exploration	A maiden Inferred MRE was announced for <b>Magazine</b> , comprising 24.5 Mt at 34.3% Fe and an Exploration Target for <b>Switch Pit</b> , comprising the <b>Seawall Haematite</b> with 0.38 Mt to 6.6 Mt, grading 66% Fe and the <b>High-Wall Haematite</b> with 0.1 Mt to 1.9 Mt, grading 55 to 65% Fe. The Exploration Target highlights the potential to host DSO Fe mineralization on <b>Cockatoo Island</b> . <i>Pearl Gulf Iron Ltd</i>	
<b>EIS</b>	<b>2</b>	<b>Cummins Range</b> REE Scoping	Assay results from <b>Cummins Range</b> had REE and phosphate drill intercepts with key assay results, including 426.9 m at 0.4% TREO and 4% P <sub>2</sub> O <sub>5</sub> , 406 m at 0.3% TREO and 4% P <sub>2</sub> O <sub>5</sub> . High-grade REE intercepts included 35 m at 1.6% TREO; 11 m at 2.2% TREO and 18% P <sub>2</sub> O <sub>5</sub> . <i>RareX Ltd</i>	
<b>EIS</b>	<b>3</b>	<b>West Arunta</b> Niobium, tantalum Exploration	Niobium mineralization was reported from near-surface weathered zone at <b>Luni</b> with intersections including 19 m at 2% Nb <sub>2</sub> O <sub>5</sub> and 28 m at 1% Nb <sub>2</sub> O <sub>5</sub> . Assays from step-out drilling included 42 m at 2.7% Nb <sub>2</sub> O <sub>5</sub> and 40 m at 1.1% Nb <sub>2</sub> O <sub>5</sub> extending the mineralization. A mineralized zone was observed with 24 m at 2.4% TREO with 10 m at 795 ppm Ta <sub>2</sub> O <sub>5</sub> and 243 ppm Sc <sub>2</sub> O <sub>3</sub> . <i>WA1 Resources Ltd</i>	
<b>EIS</b>	<b>4</b>	<b>Arunta West</b> REE Exploration	Maiden RC drilling around a soil anomaly led to the discovery of the <b>Arunta West</b> prospect, with near-surface and flat-lying REE intersections including 9 m at 1090 ppm TREO, 12 m at 1010 ppm TREO and 15 m at 1130 ppm. <i>Northwest Minerals Ltd</i>	
<b>EIS</b>	<b>5</b>	<b>Mt Squires</b> Gold-molybdenum-REE Exploration	Assays for lanthanum led to the discovery of REE mineralization at <b>Duchess East</b> . The drill program targeted gold mineralization at <b>Duchess West</b> , along with highly anomalous molybdenum mineralization, with lesser copper and lead at <b>Duchess East</b> . REE assay results included 46 m at 7102 ppm TREO with a higher grade zone of 22 m at 12 545 ppm (1.25%) TREO. Drilling also returned significant levels of Sc up to 53 ppm, Mo up to 0.32%, Pb up to 1.2% and Zn up to 838 ppm. <i>Caspian Resources Ltd</i>	
<b>EIS</b>	<b>6</b>	<b>Rudall</b> Gold Exploration	EIS drilling at <b>Ramses</b> intersected 18.25 m at 22 g/t Au, including 1 m at 393 g/t Au. Anomalous copper, silver, bismuth and arsenic assays were recorded, with mineralization remaining open at depth. <i>Greatland Gold PLC</i>	
<b>EIS</b>	<b>7</b>	<b>Marble Bar</b> Lithium Exploration	An updated MRE for the <b>Marble Bar</b> lithium resource saw a 71% increase to 18 Mt at 1% Li <sub>2</sub> O, increasing the overall tonnage and an Indicated Resource for the infill drilling. <i>Global Lithium Resources Ltd</i>	
<b>EIS</b>	<b>8</b>	<b>Mallina</b> Gold Exploration	Hemi MRE is now 236 Mt at 1.3 g/t Au for 9.5 Moz with an Indicated Resource of 166 Mt at 1.3 g/t Au and an Inferred Resource of 71 Mt at 1.2 g/t Au, increasing the <b>Mallina</b> MRE to 278 Mt at 1.3 g/t Au for 11.7 Moz. <i>De Grey Mining Ltd</i>	
<b>EIS</b>	<b>9</b>	<b>Pilbara Gold</b> Gold Pre-feasibility	The <b>Withnell South</b> discovery is within the footwall area south of the old Withnell pits. Multiple new lodges defined over 800 m of strike and 200 m vertical depth are open to the east and at depth. Drilling from <b>Toweranna</b> include 10 m at 13.2 g/t Au, including 2 m at 64.2 g/t Au. Drilling outside of the existing resource has identified 41.5 m at 4.7 g/t Au. <i>De Grey Mining Ltd</i>	
<b>EIS</b>	<b>10</b>	<b>Whim Creek</b> Zinc + copper + lead Feasibility	The <b>Whim Creek</b> DFS reported an Ore Reserves of 4.6 Mt at 1.36% Cu, 2.3% Zn and 0.68% Pb, demonstrating a technically and economically robust polymetallic project in the Pilbara with an average annual concentrate production of ~55 ktpa from <b>Mons Cupri</b> , <b>Whim Creek</b> , <b>Evelyn</b> and <b>Salt Creek</b> . An initial life-of-mine of 8 years is postulated. <i>Anax Metals Ltd</i>	
<b>EIS</b>	<b>11</b>	<b>Andover</b> Nickel Scoping	Maiden MRE for <b>Ridgeline</b> contains 1.3 Mt at 1.11% Ni, 0.46% Cu and 0.05% Co for 14 700 t Ni, 6100 t Cu and 640 t Co at a cut-off grade of 0.5% Ni. The resource comprises an Indicated Resource of 0.4 Mt at 1.13% Ni, 0.48% Cu, 0.05% Co for 4800 t Ni, 2000 t Cu and 200 t Co, and Inferred Resource of 0.9 Mt at 1.11% Ni, 0.45% Cu, 0.05% Co for 9900 t Ni, 4100 t Cu and 400 t Co. <i>Azure Minerals Ltd</i>	
<b>EIS</b>	<b>12</b>	<b>Elizabeth Hill</b> Silver Exploration	High-grade <b>Elizabeth Hill</b> drill results include 42 m at 12.1 oz/t of Ag (377 g/t Ag) and 0.52% Pb, including 13 m at 35.4 oz/t Ag (1102 g/t Ag), 1.11% Pb and 0.48 g/t (Au + Pt + Pd). <i>Alien Metals Ltd</i>	
<b>EIS</b>	<b>13</b>	<b>Yarraloola</b> Iron ore Pre-feasibility	A significant progress to grow the target production rate and mine life at the <b>Robe Mesa</b> deposit was announced with a further 20% increase in the JORC Resource to 45.2 Mt at 56% Fe (calculated) at a 55% Fe cut-off grade. The Indicated Resources now account for 36 Mt or 80% of the total MRE. Further, a 230% increase in Ore Reserves to 27.3 Mt at 55.5% Fe (62.2% Fe calculated). <i>CZR Resources Ltd</i>	
<b>EIS</b>	<b>14</b>	<b>Hancock Ranges</b> Iron ore Scoping	A maiden Ore Reserve estimate for the <b>Hancock Iron Ore Project</b> of 1.9 Mt at 60.2% Fe and a Mining Inventory of 4.2 Mt at 60.5% Fe, inclusive of Reserves was announced. The updated MRE has an Indicated Resource 1.7 Mt at 61% Fe and Inferred Resource 7.4 Mt at 60.1% Fe, with a Global Resource is 9.1 Mt at 60.3% Fe. <i>Alien Metals Ltd</i>	
<b>EIS</b>	<b>15</b>	<b>Oakover/Firefly</b> Manganese Exploration	Updated MRE at the <b>Oakover Project</b> is 105.8 Mt with 33.9 Mt at 9.7% Mn Indicated Resource at <b>Karen</b> and 13.1 Mt at 9.7% Mn Indicated Resource at <b>Jay Eye</b> . The overall Oakover Mineral Resource increased to 176 Mt at 10% Mn. <i>Firebird Metals Ltd</i>	
<b>EIS</b>	<b>16</b>	<b>Mangaroon</b> REE Exploration	Assays received for first pass drilling confirmed the discovery of REE mineralization at the <b>Sabre</b> and <b>Y8</b> ironstones, with intercepts including 7 m at 1.15% TREO. In addition, other critical metal intercepts included phosphate (peak value 17.5% P <sub>2</sub> O <sub>5</sub> ), niobium (peak value 0.43% Nb <sub>2</sub> O <sub>5</sub> ), titanium (peak value 9.8% TiO <sub>2</sub> ) and scandium (peak value 216 ppm Sc). Drilling from the <b>C3</b> carbonatite discovery included 195 m at 0.57% TREO, including 24 m at 1.26% TREO, 4.4% P <sub>2</sub> O <sub>5</sub> , 0.24% Nb <sub>2</sub> O <sub>5</sub> , 4.4% TiO <sub>2</sub> and 100 ppm Sc. Further results from <b>Yin</b> include 23 m at 1.28% TREO, while results from three additional ironstones at <b>Y2</b> and north of the <b>Yin</b> Resource included 17 m at 0.85% TREO. <i>Dreadnought Resources Ltd</i>	
<b>EIS</b>	<b>17</b>	<b>Yinnetharra-Malinda</b> Lithium-tantalum-cesium Exploration	Initial drilling at the <b>M1</b> pegmatite in <b>Yinnetharra</b> intersected 55.6 m at 1.12% Li <sub>2</sub> O; 15 m at 1.36% Li <sub>2</sub> O and 12.4 m at 1.22% Li <sub>2</sub> O. Similar shallow and wide initial intercepts in the <b>M47</b> pegmatite in the <b>Tomahawk</b> prospect returned 35.2 m at 1% Li <sub>2</sub> O; 14.9 m at 1.12% Li <sub>2</sub> O. New assay results from the <b>M47</b> and <b>M42</b> pegmatites include 43 m at 1.22% Li <sub>2</sub> O and 37 m at 0.9% Li <sub>2</sub> O. <i>Delta Lithium Ltd</i>	
<b>EIS</b>	<b>18</b>	<b>Graphite Bull</b> Graphite Exploration	Drilling returned numerous zones of thick and high-grade graphite mineralization, including a newly identified zone at <b>Yalbra</b> . High-grade graphite intersections include 33 m at 18.7% TGC, 32 m at 17.7% TGC and 5 m at 24.8% TGC. <i>Buxton Resources Ltd</i>	
<b>EIS</b>	<b>19</b>	<b>Abra</b> Copper Operating	The first concentrate was produced at the <b>Abra</b> base metals mine in January 2023 as part of the plant commissioning process. The first concentrate shipment of 5019 dry metric tonnes left the port of Geraldton in March 2023. <i>Galena Mining Ltd</i>	
<b>EIS</b>	<b>20</b>	<b>Earaheedy</b> Copper + lead + zinc Exploration	Recent drilling extended the strike length of <b>Tonka-Navajoh</b> to over 11 km and up to 3 km strike with results of 8 m at 5.64% Zn + Pb, including 3 m at 11.94% Zn + Pb at <b>Tonka</b> . Drilling results at <b>Chinook</b> included 80 m at 1.32% Zn + Pb. The Maiden Inferred MRE is 94 Mt at 3.1% Zn + Pb and 4.1 g/t Ag for <b>Chinook</b> , <b>Tonka</b> and <b>Navajoh</b> deposits. <i>Rumble Resources Ltd</i>	
<b>EIS</b>	<b>21</b>	<b>Side Well</b> Gold + copper Exploration	Drilling results at <b>Mulga Bill</b> include 1 m at 3451 g/t Au and 1 m at 2379 g/t Au, along with 6 m at 589.4 g/t Au including 1 m at 3160 g/t Au. Drilling at <b>Ironbank</b> intersected 8 m at 9.9 g/t Au. The recently discovered <b>Eastern Lode</b> at <b>Mulga Bill</b> include up to 175.5 g/t Au. A maiden MRE of 6.19 Mt at 2.6 g/t Au for 518 000 oz Au for both <b>Mulga Bill</b> and <b>Ironbank</b> was reported. <i>Great Boulder Resources Ltd</i>	
<b>EIS</b>	<b>22</b>	<b>King Tamba</b> Lithium-tantalum-rubidium Exploration	A maiden MRE was announced for <b>King Tamba</b> with 5 Mt at 0.14% Rb <sub>2</sub> O with a Li <sub>2</sub> O credit with mineralization starting from near surface highlighted by thick zones of mineralized pegmatites up to 70 m in thickness and mineralization remaining open in all directions. <i>Krakatoa Resources Ltd</i>	
<b>EIS</b>	<b>23</b>	<b>Dalgaranga</b> Gold Exploration	Drilling at <b>Gilbey's North</b> - <b>Never Never</b> returned results of 29.15 m at 11.09 g/t Au, including 9.44 m at 22.26 g/t Au and 19 m at 4.08 g/t Au, including 1 m at 180 g/t Au. An updated MRE of 2.03 Mt at 4.64 g/t Au for 303 100 ounces, comprising 1.10 Mt at 2.45 g/t Au - 'Open Pit' resource and 0.93 Mt at 7.22 g/t Au - 'Underground' resource was reported. <i>Gascoyne Resources Ltd</i>	
<b>EIS</b>	<b>24</b>	<b>Meleya</b> Tungsten, nickel, cobalt, REE Exploration	Results at the <b>Meleya Project</b> shows anomalous assays including 3 m at 0.54% WO <sub>3</sub> and 0.07% Co; 5 m at 0.11% Ni and 0.09% Cr, 6 m at 0.13% REO with 686 ppm Ce, 348 ppm La, 86 ppm Y. Unexpected high levels of Ni, W, Co and REE may relate to zones of potential VMS-style mineralization, hosted within the interpreted greenstone belt or potential skarn-style mineralization. <i>Tempest Minerals Ltd</i>	
<b>EIS</b>	<b>25</b>	<b>Youanmi</b> Gold Exploration	Drilling at <b>Paddy's Lode</b> (previously <b>Youanmi South</b> ) outside the Main Lode corridor returned results of 18 m at 51.96 g/t Au including 10 m at 79.55 g/t Au. <i>Rox Resources Ltd</i>	
<b>EIS</b>	<b>26</b>	<b>Victory Bore</b> Vanadium, titanium, Alumina Scoping	A maiden <b>Victory Bore</b> MRE of Aluminium Oxide in addition to the existing vanadium MRE was reported. The maiden resource estimate of 37.7 Mt at 23.3% Al <sub>2</sub> O <sub>3</sub> for a near surface measured (5.2 Mt at 23.1% Al <sub>2</sub> O <sub>3</sub> ), indicated (11.8 Mt at 23.1% Al <sub>2</sub> O <sub>3</sub> ) and inferred (20.7 Mt at 23.5% Al <sub>2</sub> O <sub>3</sub> ) components is in addition to the existing resource of 234.8 Mt at 0.39% V <sub>2</sub> O <sub>5</sub> . <i>Surefire Resources NL</i>	
<b>EIS</b>	<b>27</b>	<b>Kathleen Valley</b> Lithium-tantalum Operating	Iron Mine Contracting mobilized and commenced openpit operations for the <b>Kathleen's Corner</b> and <b>Mt Mann</b> openpits after a full openpit mining services contract was awarded under a Preliminary Works Agreement. Consequently, the required Total Material Movement rates were rapidly ramped up. <i>Liontown Resources Ltd</i>	
<b>EIS</b>	<b>28</b>	<b>Teutonic Bore - Jaguar</b> Copper + zinc + silver Operating	A new massive sulfide lens, <b>Bacalar</b> , was discovered at <b>Bentley</b> with 15.8 m at 3.7% Cu, 6.06% Zn, 101 g/t Ag; 1.61 g/t Au. Additional high-grade intersections reported at <b>Java Deep</b> include 2.9 m at 2.22% Cu, 11.5% Zn, 343 g/t Ag and 6.57 g/t Au. An updated MRE for the <b>Jaguar Project</b> is 7.2 Mt at 1.1% Cu, 5.8% Zn, 0.5 g/t Au and 68 g/t Ag for 78 kt Cu, 416 kt Zn, 106 koz Au and 15 750 koz Ag of contained metal. <i>Aeris Resources Ltd</i>	
<b>EIS</b>	<b>29</b>	<b>Lady Julie</b> Gold Exploration	Drilling intersections of 96 m at 1.23 g/t Au and 60 m at 3.6 g/t Au contributed towards an updated MRE for <b>Lady Julie</b> and other nearby projects with a combined Inferred and Indicated Resource of 5.88 Mt at 1.68 g/t Au for the <b>Lady Julie Central</b> and the <b>Lady Julie North</b> 4 deposits, and a combined MRE of 13.5 Mt at 1.4 g/t Au totalling 605 000 oz of gold for the whole project area. <i>Magnetic Resources NL</i>	
<b>EIS</b>	<b>30</b>	<b>East Laverton</b> Nickel Exploration	New laterite nickel discovery was reported at <b>Seahorse</b> based on aircore drilling results, intersecting 17 m at 0.92% Ni; 28 m at 0.95% Ni and 28 m at 0.97% Ni, with the highest grade of 2.2% Ni over 1 m. REE mineralization up to 1850 ppm TREO were also reported in the drilling intersections. <i>MTM Critical Minerals Ltd</i>	
<b>EIS</b>	<b>31</b>	<b>Mt Ida</b> Pre-feasibility	Infill drilling at the <b>Mt Ida</b> lithium project from the <b>Sister Sam</b> pegmatite intersected 49.5 m at 1.45% Li <sub>2</sub> O. Further drilling below the existing resource at <b>Sister Sam</b> intersected 90.1 m at 0.95% Li <sub>2</sub> O, including 56.1 m at 1.1% and 22.4 m at 1.52% Li <sub>2</sub> O. Additional testing of exploration targets within the project yielded 44.5 m at 1.2% Li <sub>2</sub> O; 34.9 m at 1.3% Li <sub>2</sub> O. <i>Red Dirt Metals Ltd</i>	
<b>EIS</b>	<b>32</b>	<b>Riverina</b> Lithium Exploration	Based on results from maiden drilling, the discovery of lithium at <b>Federal Flag</b> in the <b>Riverina</b> lithium project was announced. Intersections include 11.1 m at 1.28% Li <sub>2</sub> O in a basal pegmatite. <i>Ora Banda Mining Ltd</i>	
<b>EIS</b>	<b>33</b>	<b>Kalgoorlie Nickel</b> REE Exploration	A REE discovery at the <b>Goongarrie West</b> prospect, based on broad-spaced aircore drilling, intersected 7 m at 3506 ppm TREO and 12 m at 2487 ppm TREO with interpretation of results indicating the system to be an IAC REE occurrence. <i>Ardea Resources Ltd</i>	
<b>EIS</b>	<b>34</b>	<b>Eastern Lefroy</b> Gold + copper Exploration	EIS drilling at <b>Burns</b> confirmed multiple alkali porphyry-styled new zones of gold and copper mineralization, atypical of the Eastern Goldfields and potentially a first of its kind discovery in Western Australia with up to 13.8% Cu. A maiden MRE of 43 Mt at 0.36 g/t Au and 0.14% Cu with silver credits at 0.35 g/t Ag was reported. <i>Lefroy Exploration Ltd</i>	
<b>EIS</b>	<b>35</b>	<b>Kambalda</b> Pre-feasibility	APFS was completed for <b>Baker</b> deposit, based on a Probable Ore Reserve derived from the Indicated category of the <b>Baker</b> MRE of 612 kt averaging 2.86% Ni for 17.5 kt Ni and with with potential contributions from nearby <b>East Trough</b> deposit. <i>Lunnon Metals Ltd</i>	
<b>EIS</b>	<b>36</b>	<b>Beta Hunt</b> Nickel Exploration	An 8% and 2% increase in the Measured and Indicated MRE to 21 100 t Ni and 13 400 t Ni, respectively was reported for the <b>Beta Hunt</b> nickel project. The new MRE includes <b>Beta Central</b> and <b>Beta West</b> , with a Measured and Indicated Mineral Resource of 50 000 t at 2.3% for 160 t Ni and an Inferred Mineral Resource of 5000 t at 3.3% for 150 t Ni. <i>Karara Resources Inc</i>	
<b>EIS</b>	<b>37</b>	<b>Wattle Dam</b> Nickel Exploration	Maiden aircore assay results from the newly discovered <b>Misho</b> prospect intersected 20 m at 0.5% Ni, 492 ppm Cu, 126 ppb PGE (Pt + Pd) and 26 m at 0.32% Ni, 225 ppm Cu, 70 ppb PGE. <i>Maximus Resources Ltd</i>	
<b>EIS</b>	<b>38</b>	<b>Mandilla</b> Gold Exploration	Multiple drilling results from <b>Theia</b> included intersections over 250-g x metres of gold mineralization across several intercepts. Best results include 38.6 m at 2.1 g/t Au, 44.3 m at 1.89 g/t Au, and 57 m at 1.36 g/t Au. <i>Astral Resources NL</i>	
<b>EIS</b>	<b>39</b>	<b>Mt Edwards</b> Lithium Exploration	Initial assays from RC drilling at <b>Faraday</b> intersected lithium-bearing pegmatite with results including 10 m at 0.9% Li <sub>2</sub> O and 18 m at 0.72% Li <sub>2</sub> O. Further drilling yielded results including 10 m at 1.04% Li <sub>2</sub> O; 11 m at 0.77% Li <sub>2</sub> O. A maiden lithium MRE of 481 000 t at 0.59% Li <sub>2</sub> O was announced. <i>Widgie Nickel Ltd</i>	
<b>EIS</b>	<b>40</b>	<b>Dome North</b> Lithium-tantalum Scoping	The updated MRE for <b>Dome North</b> is 11.2 Mt at 1.16% Li <sub>2</sub> O and 57 ppm Ta <sub>2</sub> O <sub>5</sub> with an upgraded Indicated Resource of 8.6 Mt at 1.23% Li <sub>2</sub> O containing 105 000 t, representing an increase of 50%, with 81% of total contained Li. A positive scoping study demonstrated the potential to produce a saleable lithium concentrate and mine optimization modelling with a postulated mine life of 7.3 years. <i>Essential Metals Ltd</i>	
<b>EIS</b>	<b>41</b>	<b>Panton</b> PGE Feasibility	EIS co-funded drilling at <b>Panton</b> outside the known MRE and through the Panton intrusion intersected 22.4 m at 1.5 g/t 3E; 0.21% Ni, 155 ppm Co and 0.04% Cu, along with 36 m at 0.86 g/t PGM 3E, 0.23% Ni, 151 ppm Co, 0.01% Cu. Additional results from drilling surrounding the known resource include 42 m at 1.43 g/t 3E, 0.16% Ni, 125 ppm Co and 0.03% Cu. <i>Future Metals NL</i>	
<b>EIS</b>	<b>42</b>	<b>Mt Thirsty</b> Nickel, PGE Exploration	There was a 146% increase to the MRE for <b>Mt Thirsty</b> , with 66.2 Mt at 0.06% Co, 0.43% Ni and 0.45% Mn, based on drilling from the deeper ultramafic sill horizons, intersecting three mineralized horizons. The Upper (Ni-Co-Mn-Sc) zone intersected 78 m at 0.11% Co, 0.5% Ni, 1.38% Mn and 46.4 g/t Sc; the Lower (Ni) zone with 21.8 m at 0.28% Ni and 49.8 g/t Sc and the Middle (PGE) zone with 9 m at 0.14 g/t 3E, 0.09% Ni and 0.02% Cu. <i>Conico Ltd and Greenstone Resources Ltd</i>	
<b>EIS</b>	<b>43</b>	<b>Splinter Rock</b> REE Exploration	Assay results at <b>Splinter Rock</b> project showed strongest intersections from the <b>Centre Prospect</b> , which included 69 m at 1483 ppm TREO, intersections from the <b>Prop Prospect</b> included 44 m at 821 ppm TREO, while intersections from the <b>Scrum Prospect</b> included 60 m at 761 ppm TREO and intersections from the <b>Flanker Prospect</b> included 43 m at 1217 ppm TREO. <i>OD6 Metals Ltd</i>	
<b>EIS</b>	<b>44</b>	<b>Circle Valley</b> Gold, silver, REE Exploration	Assay results from <b>Circle Valley</b> returned 12 m at 4276 ppm TREO and 16 m at 1814 ppm TREO. A maiden MRE of 98 Mt at 890 ppm TREO, containing 21 560 t of NdPr metal at a high NdPr to TREO ratio of 25%, along with a discrete high-grade subset (~1 km <sup>2</sup> ) of 13 Mt at 1440 ppm TREO, within an optimized pit shell and above a 430 ppm TREO minus Ce <sub>2</sub> O <sub>3</sub> cutoff was reported. <i>Meeka Metals Ltd</i>	
<b>EIS</b>	<b>45</b>	<b>Mt Cattlin</b> Lithium-tantalum-cesium Operating	MRE for the <b>Mt Cattlin</b> operation was updated to 12.8 Mt at 1.3% Li <sub>2</sub> O and 179 ppm Ta <sub>2</sub> O <sub>5</sub> , refining the lithium grade with 92% of the total resource tonnage in the Indicated category. Based on the review of the MRE, the Ore Reserve tonnage also increased by 34% to 7.8 Mt at 1.2% Li <sub>2</sub> O and 130 ppm Ta <sub>2</sub> O <sub>5</sub> . <i>Alilkem Ltd</i>	
<b>EIS</b>	<b>46</b>	<b>Noombenberry</b> Kaolin-halloysite Exploration	The updated MRE at the <b>Cloud Nine</b> kaolin-halloysite project increased by 33% to 280 Mt of kaolinized granite, which included 70 Mt Indicated and 210 Mt Inferred Resource. <i>Latin Resources Ltd</i>	
<b>EIS</b>	<b>47</b>	<b>Moora</b> Gold + copper Exploration	A new copper-gold zone was defined at <b>Mynt</b> with assays up to 2.8% Cu and 4.2 g/t Au. First diamond hole at <b>Mynt</b> intersected 36 m at 1% Cu and 0.4 g/t Au including 18 m at 1.6% Cu and 0.8 g/t Au. <i>Minerals 260 Ltd</i>	
<b>EIS</b>	<b>48</b>	<b>Bidaminna</b> HMS Pre-feasibility	The updated MRE for <b>Bidaminna</b> increased by 7% to 109 Mt, with an associated increase in grade to 2.5% THM (a 15% increase on the previous MRE) and the THM content increased to 2.8 Mt. <i>Image Resources Ltd</i>	
<b>EIS</b>	<b>49</b>	<b>Julimar</b> Nickel, PGE Scoping	Updated openpit and underground MRE for the <b>Gonneville</b> deposit over a strike extent of ~1.9 km, from surface to a depth of ~800 m to now 560 Mt at 0.88 g/t 3E (Pd + Pt + Au), 0.16% Ni, 0.09% Cu, 0.015% Co, containing 16 Moz 3E, 860 kt Ni, 520 kt Cu, 83 kt Co. <i>Chalice Mining Ltd</i>	
<b>EIS</b>	<b>50</b>	<b>Greenbushes</b> Lithium-tantalum-tin Operating	A FID to build <b>Kemerton</b> trains II/IV was reached by Albemarle as part of a plan to expand global lithium conversion capacity. Construction has started. Currently, <b>Kemerton I</b> is operating and producing lithium hydroxide, <b>Kemerton II</b> is progressing through commissioning. <b>Meishan</b> construction is progressing on schedule with mechanical completion expected in 2024. To leverage world-class spodumene resources, the construction of the <b>Greenbushes</b> CGP3 is also progressing. <i>Albemarle Corporation</i>	

For more information, contact: [mindex@dmirs.wa.gov.au](mailto:mindex@dmirs.wa.gov.au)



# WESTERN AUSTRALIA – THE WORLD’S PREMIER MINING STATE

## Fees, securities and minimum expenditures<sup>#</sup>

Licence/ lease	Maximum area	Term	Application fee	Rent	Security	Minimum annual expenditure*
Prospecting licence	200 ha	Four years (then four-year extension)	\$434	\$4 per ha Min: \$37	\$5k each	\$40 per ha Min: \$2k
Special prospecting licence for gold	10 ha (maximum)	Min three months (then three-month extension up to four years)	\$434	\$37	\$5k each	\$2k
Exploration licence	70 blocks normally (200 blocks in greenfields areas)	Five years (then two-year extension)	1 Block \$457 >1 Block \$1743	Per block Years 1–3: \$161 Years 4–5: \$289 Years 6–7: \$395 Years 8+: \$747	\$5k each	Years 1–3 ≤20 blocks Min: \$10–20k >20 blocks \$1k per block
Mining lease minerals dissolved in brine	Not applicable	21 years renewable	N/A	Years 1–5 \$3 per ha	\$5k each	\$100 per ha Min: \$5k if <5 ha, otherwise \$10k
Mining lease	Not applicable	21 years renewable	\$638	\$26 per ha	\$5k each	\$100 per ha Min: \$5k if <5 ha, otherwise \$10k
General purpose lease	10 ha or larger with Minister's approval	21 years renewable	\$638	\$24 per ha	\$5k each	Covenant in lieu
Miscellaneous licence	Not applicable	21 years renewable	\$638	\$24 per ha	\$5k each	Covenant in lieu

<sup>#</sup> <https://www.dmp.wa.gov.au/Documents/Minerals/Minerals-Feesandcharges.pdf>

ha = hectare (100 × 100 m)

\* includes rent payments

Block = approx. 3 km<sup>2</sup>

## Examples of royalty rates

The full list of royalty rates is in Regulation 86 of the Mining Regulations, 1981 or the relevant State Agreement

Limestone (construction/metallurgical)	\$0.73 – \$1.17 per tonne
Coal	7.5%, if exported
Bauxite	7.5%
Copper	5% (concentrate); 2.5% (metal)
Nickel in concentrate	\$ royalty = 2.5 × D × f/100 D: percentage Ni in concentrate f: Ni metal price per tonne
Lithium minerals	5%
Iron ore (DSO) fines/lump	7.5%
Beneficiated iron ore and magnetite	5%
Gold (2500 oz exempt)	2.5% of metal value
Zircon concentrate	5% of sales value

Tonnage-based rates     Sales value-based rates

DSO = Direct shipping ore

AUG 2023

## Geoscience and resource information

All free via ([www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au))

- Maps and reports ([www.dmirs.wa.gov.au/ebookshop](http://www.dmirs.wa.gov.au/ebookshop))
- Live databases of mineral deposits ([www.dmirs.wa.gov.au/minedex](http://www.dmirs.wa.gov.au/minedex))
- Mineral exploration reports ([www.dmirs.wa.gov.au/wamex](http://www.dmirs.wa.gov.au/wamex))
- Download maps and databases (<https://dasc.dmirs.wa.gov.au>)
- Online GIS facility ([www.dmirs.wa.gov.au/geoview](http://www.dmirs.wa.gov.au/geoview))
- Geophysical data and images ([www.dmirs.wa.gov.au/geophysics](http://www.dmirs.wa.gov.au/geophysics))
- Geochemical data

## Exploration and mining licence information

All free via ([www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au))

- Online map service (TENGRAPH Web) continuously updated showing location of all licences and applications
- Full ownership and other data for all licences available via online system, Mineral Titles Online (MTO)
- Transparent licence system where all licence information can be viewed by anyone
- Explortion and mining licence information

## Comprehensive and well-known mining legislation

Free download of Mining Act and Regulations from ([www.legislation.wa.gov.au](http://www.legislation.wa.gov.au))

This site also has current copies of all other Western Australian legislation

- Titles are for 'all' minerals\*
- First in time application system
- Security of tenure when moving from exploration to mining title
- Mining title can be granted at pre-feasibility stage
- Annual exploration expenditure commitments
- Annual 'rental' fee for licence
- Annual reporting of activities

## Exploration licences

- Graticular system used based on a 'block' that is one minute of latitude × one minute of longitude
- Maximum number of blocks:
- in greenfields areas: 200
- in non-greenfields areas: 70
- If after five years the licence is extended, 40% of the area must be surrendered at end of 6th year

## Mining lease applications

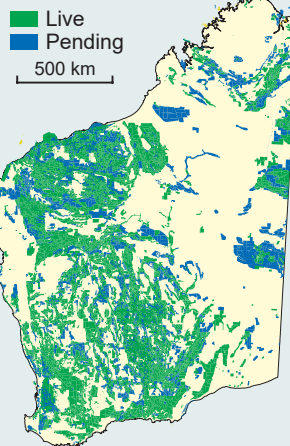
There are two ways to submit applications:

- 'Mining proposal' involving environmental assessment before grant
- Mineralisation Report and Supporting Statement, or Resource Report and Supporting Statement. Mining proposal and environmental assessment submitted for approval at later date.

\* Legislation gives Ministerial discretion to restrict minerals or refuse in public interest.

Rules of procedural fairness apply.

## MINING TENEMENTS



as at August 2023

## Taxes and mining royalties

Mining tax

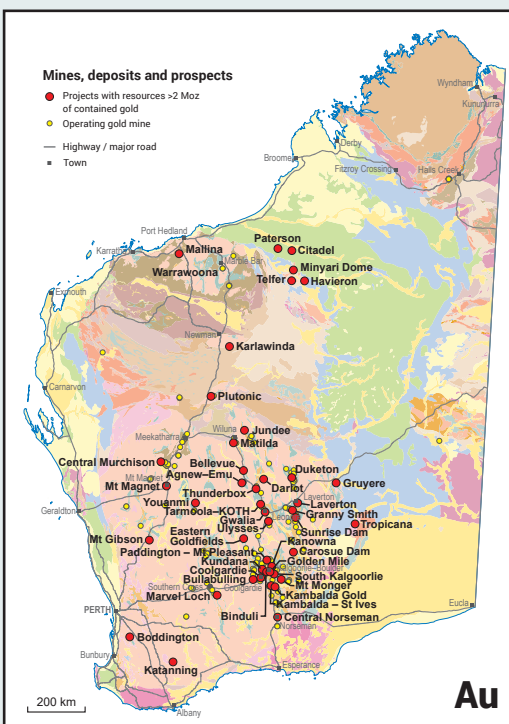
- Normal company tax rate ranges between 27.5 and 30% on profit
- Goods and services tax of 10%

Royalties on production

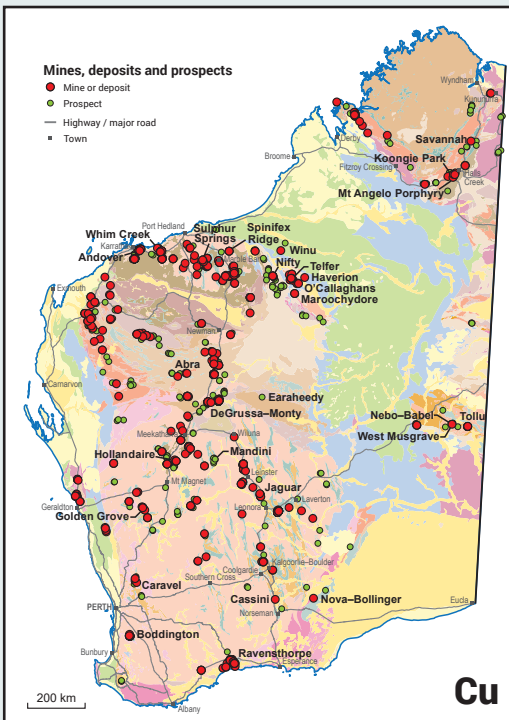
- The Mining Act and Regulations or the various State Agreement Acts set out royalty provisions and royalty rates
- The amount of royalty paid is a deduction for income tax assessment
- The amount of royalty paid can be reduced by allowable costs involved in transporting the mineral to the purchaser

Royalties are levied on the basis of:

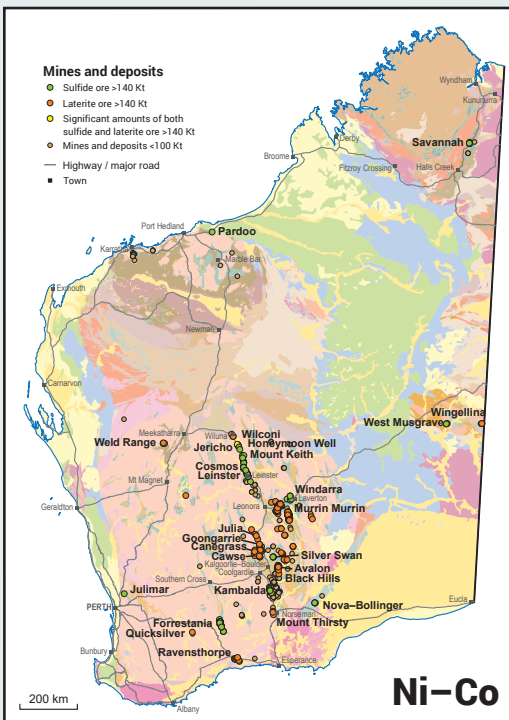
- Tonnage (rock, gravel, limestone)
- Sales value (most metals, gems, diamonds)



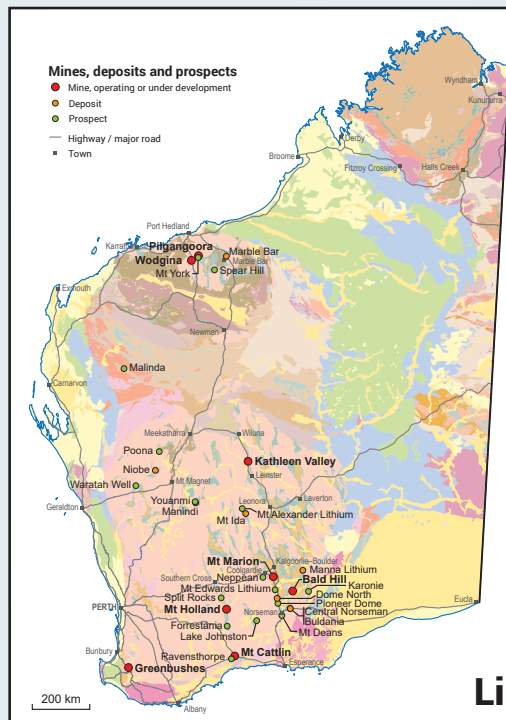
Au



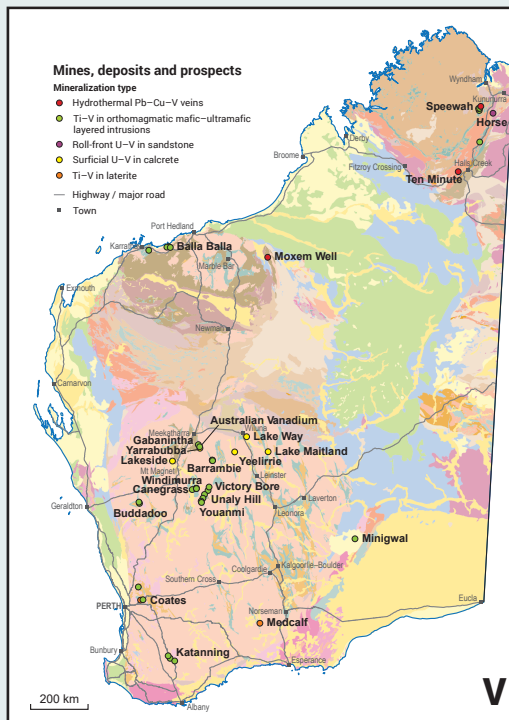
Cu



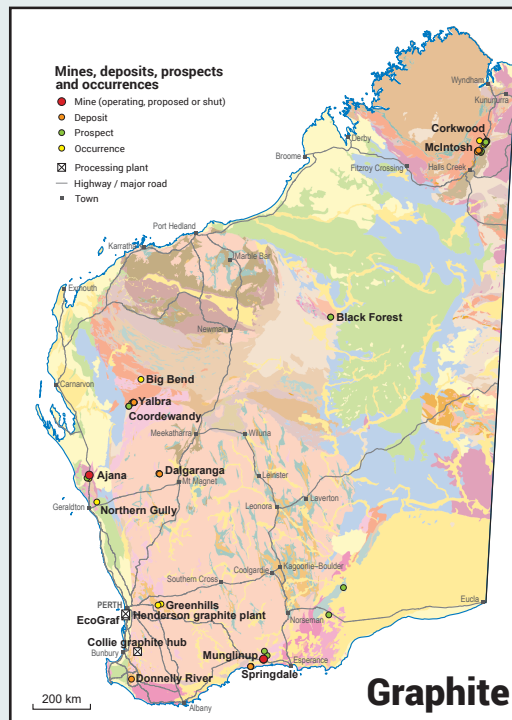
Ni–Co



Li



V



Graphite



REE

Department of Mines,  
Industry Regulation and Safety  
(the principal mineral industry regulator)  
**[www.dmirs.wa.gov.au](http://www.dmirs.wa.gov.au)**

Department of Jobs, Tourism, Science and Innovation  
(coordinates the development of major resource  
and infrastructure projects)  
**[www.jtsi.wa.gov.au](http://www.jtsi.wa.gov.au)**

Western Australian State Law Publisher  
(free downloads of WA legislation)  
**[www.legislation.wa.gov.au](http://www.legislation.wa.gov.au)**

Department of Foreign Affairs and Trade  
**[www.dfat.gov.au](http://www.dfat.gov.au)**

Australian Tax Office  
**[www.ato.gov.au](http://www.ato.gov.au)**

Austrade  
(Australian Trade Commission)  
**[www.austrade.gov.au](http://www.austrade.gov.au)**