

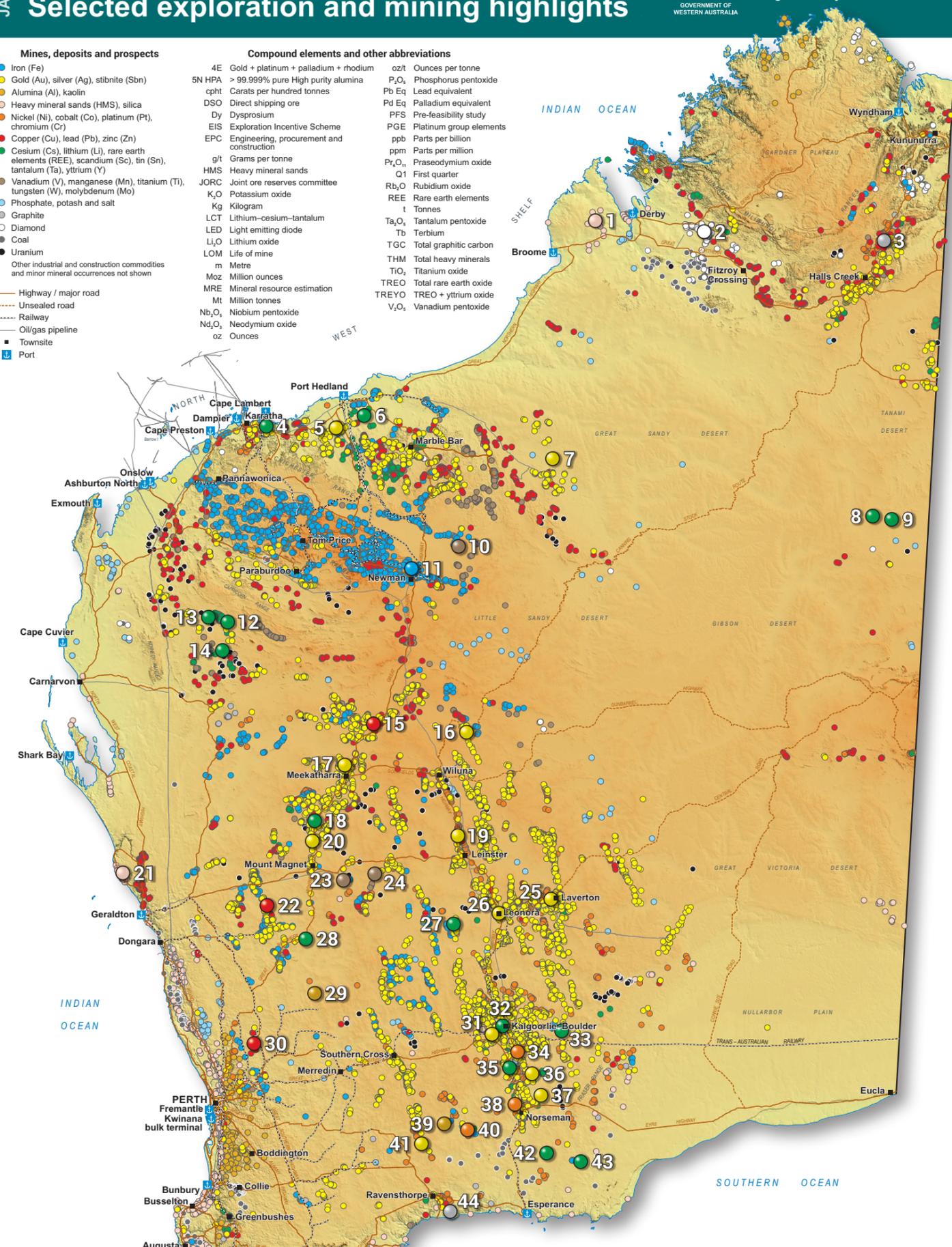
WESTERN AUSTRALIA

Selected exploration and mining highlights



- 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)
 - Cesium (Cs), 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**
- | | |
|--|--|
| 4E Gold + platinum + palladium + rhodium | oz/t Ounces per tonne |
| 5N HPA > 99.999% pure High purity alumina | P ₂ O ₅ Phosphorus pentoxide |
| cpht Carats per hundred tonnes | Pb Eq Lead equivalent |
| DSO Direct shipping ore | Pd Eq Palladium equivalent |
| Dy Dysprosium | PFS Pre-feasibility study |
| EIS Exploration Incentive Scheme | PGE Platinum group elements |
| EPC Engineering, procurement and construction | ppb Parts per billion |
| g/t Grams per tonne | ppm Parts per million |
| HMS Heavy mineral sands | Pr ₂ O ₅ Praseodymium oxide |
| JORC Joint ore reserves committee | Q1 First quarter |
| K ₂ O Potassium oxide | Rb ₂ O Rubidium oxide |
| Kg Kilogram | REE Rare earth elements |
| LCT Lithium-cesium-tantalum | t Tonnes |
| LED Light emitting diode | Ta ₂ O ₅ Tantalum pentoxide |
| Li ₂ O Lithium oxide | Tb Terbium |
| LOM Life of mine | TGC Total graphitic carbon |
| m Metre | THM Total heavy minerals |
| Moz Million ounces | TiO ₂ Titanium oxide |
| MRE Mineral resource estimation | TREO Total rare earth oxide |
| Mt Million tonnes | TREYO TREO + yttrium oxide |
| Nb ₂ O ₅ Niobium pentoxide | V ₂ O ₅ Vanadium pentoxide |
| Nd ₂ O ₃ Neodymium oxide | |
| oz Ounces | |



1	Thunderbird HMS Operating	First ore has been produced at the Thunderbird mineral sands project ahead of schedule, with first delivery of HMS products expected in the Q1 2024. <i>Sheffield Resources Ltd</i>	
2	Ellendale Diamond Exploration	Maiden inferred MRE for the E9 Main Lights stockpile situated at the Ellendale 9 mine comprised 5.2 Mt at 1.26 cpht for 66 277 carats. <i>Gibb River Diamonds Ltd</i>	
3	McIntosh Graphite Feasibility	Drilling confirmed an extension to the Emperor target with significant assays including 107 m at 3.6% TGC and a 250 m at 3.9% graphite zone. Assay results from the Sturgeon target include 94 m at 4.5% TGC. <i>Green Critical Minerals Ltd</i>	
4	Andover Lithium Exploration	Broad zones of high-grade lithium were intersected at the AP0011 pegmatite including 165.2 m at 1.33% Li ₂ O. Results from the AP0003/AP0004 pegmatite include 37 m at 1.22% Li ₂ O and the AP0005 pegmatite include 14.2 m at 1.03% Li ₂ O. High-grade zones were intersected in the AP0016 pegmatite in Target Area 2 including 23.7 m at 1.51% Li ₂ O, while AP0012 pegmatite intersected 39.5 m at 1.06% Li ₂ O. <i>Azure Minerals Ltd</i>	
5	Hemi Gold Feasibility	An updated Mineral Resource for the Hemi project of 255 Mt at 1.3 g/t Au for 10.5 Moz Au was released. The global resource, including the regional deposits, increased to 296 Mt at 1.3 g/t Au for 12.7 Moz Au. <i>De Grey Mining Ltd</i>	
6	Tabba Tabba - Strelley Lithium + tantalum Exploration	Maiden drilling confirmed two high-grade lithium discoveries within the northern Hutt and central Leia pegmatites. Best results from the Leia pegmatites include 180 m at 1.1% Li ₂ O and 85 m at 1.5% Li ₂ O, while best results from the Hutt pegmatites include 16 m at 1.3% Li ₂ O and 21 m at 1.1% Li ₂ O. <i>Wildcat Resources Ltd</i>	
7	Minyari Dome Gold Pre-feasibility	A near-surface, high-grade gold discovery at the GEO-01 prospect returned results including 68 m at 1.4 g/t Au and 48 m at 1.3 g/t Au and 0.05% Cu. Additionally, two EIS co-funded holes at GEO-01 returned intersections including 62 m at 0.8 g/t Au and 18 m at 1.3 g/t Au, as well as 70 m at 0.64 g/t Au and 0.03% Cu. <i>Antipa Minerals Ltd</i>	
8	West Arunta Niobium + tantalum Exploration	Drilling results at P2 , include 18 m at 0.6% Nb ₂ O ₅ and 114 m at 0.5% Nb ₂ O ₅ , extending the niobium mineralization a further 1 km east. Assays returned from drilling at Luni included 114 m at 0.7% Nb ₂ O ₅ and 37 m at 2.3% Nb ₂ O ₅ . <i>WA1 Resources Ltd</i>	
9	Aileron REE + niobium Exploration	Maiden drilling intersected near-surface, high-grade niobium-REE mineralization at the Emily target with assay results including 130 m at 0.7% Nb ₂ O ₅ and 0.23% TREO. Broad-scale, near-surface mineralization was intersected in the Crean carbonate complex with results including 282 m at 0.54% Nb ₂ O ₅ and 0.17% TREO. <i>Encounter Resources Ltd</i>	
10	Pickering Creek Manganese Exploration	Mineral resources have been updated across the Balfour South, Pickering and Flanagan Bore deposits. The global resource now comprises 314 Mt at 10.5% Mn containing 33.1 Mt of manganese. <i>Black Canyon Ltd</i>	
11	Hancock Iron Feasibility	Assay results received from diamond drilling at the Sirius deposit have confirmed exceptional DSO grades with significant results including 52.8 m at 60.9% Fe and 61.2 m at 60.8% Fe. <i>Alien Metals Ltd</i>	
12	Lyons REE Exploration	Co-funded EIS drilling at Lyons intersected new REE mineralized ironstones and carbonatites. Drill intersections at the LI01 carbonate outer halo include 174 m at 0.14% TREO and 1.04% P ₂ O ₅ , while drill intersections at the LI03 carbonate rim include 7 m at 0.16% TREO and 121 m at 0.11% TREO and 0.82% P ₂ O ₅ . A maiden inferred MRE of 0.99 Mt at 0.32% TREO was reported for the Lyons 11, 12 and 13 prospects. <i>Lanthanein Resources Ltd</i>	
13	Mangaroo REE Exploration	Drilling at C3 has defined a large zone of anomalous REE and niobium mineralization, including a high-grade niobium zone within C3 with intercepts including 113 m at 1.13% TREO 2.6 kg/t Nd ₂ O ₃ +Pr ₂ O ₃ , and 59 m at 0.61% Nb ₂ O ₅ in the high-grade zone. The maiden MRE for the C3 deposit defined an inferred resource of 10.84 Mt at 1% TREO. <i>Dreadnought Resources Ltd</i>	
14	Yinnetharra-Malinda Lithium + tantalum Exploration	A maiden MRE of 25.7 Mt at 1% Li ₂ O was reported for the Malinda prospect. Selected new drill intercepts from M1 pegmatites include 15 m at 1.5% Li ₂ O and 90 ppm Ta ₂ O ₅ , while assays from the M36 pegmatite included 29 m at 1.5% Li ₂ O. A first pass metallurgical test program undertaken for the M1 pegmatites indicated a Li ₂ O concentrate recovery of 77% at 6.3% Li ₂ O. <i>Delta Lithium Ltd</i>	
15	Morck Well Zinc + lead + manganese Exploration	Significant base metal and manganese mineralization was intersected by drilling at the McLean Well prospect, with assay results including 74 m at 12.9% Mn and 35 m at 1.05% Zn. <i>Auris Minerals Ltd</i>	
16	Horse Well Gold Exploration	Recent discoveries at the Horse Well project include the Marwari and Konik prospects. Drilling assay results from Marwari include 31 m at 5.6 g/t Au and from Konik 58 m at 1.7 g/t Au. <i>Strickland Metals Ltd</i>	
17	Golden Gully Gold Scoping	Results from the South Eastern orebody at the Crown Prince prospect, delivered high-grade gold mineralization with intercepts including 2 m at 910.38 g/t Au, 6.4 m at 26.39 g/t Au, and 16 m at 36.86 g/t Au. Results from the Main orebody had intercepts including 40 m at 16.22 g/t Au and 34 m at 11.11 g/t Au. <i>Ora Gold Ltd</i>	
18	North Stanmore REE Exploration	A maiden inferred MRE for the North Stanmore project comprised 250 Mt of REE-bearing sapphirite at 520 ppm TREYO for 130 000 t of contained TREYO and significant ratios of Dy and Tb totalling 3.6% TREYO. <i>Victory Metals Ltd</i>	
19	Bellevue Gold Operating	First gold bar poured from a toll treating program of Bellevue material was achieved. The gold bar produced in the first smelt weighed 8.3 kg. Further, infill drilling at Bellevue returned results including 18.4 m at 52.9 g/t Au and 4 m at 35.6 g/t Au. <i>Bellevue Gold Ltd</i>	
20	Cue-Moyagee Gold Pre feasibility	Drilling of the Twilight, Velvet and Starlight lodes at Break of Day deposit, and at the White Heat deposit intersected significant mineralization. Intersections at Break of Day include 18 m at 71.0 g/t Au and 19 m at 112.0 g/t Au, while intersections at White Heat include 3 m at 378.0 g/t Au and 10 m at 34.4 g/t Au. <i>Musgrave Minerals Ltd</i>	
21	Port Gregory Garnet + ilmenite + rutile + zircon Scoping	MRE for the Port Gregory garnet project was updated to 166 Mt at 4% THM at a 2% THM cut-off grade. The THM comprises a garnet fraction of 89% for 5.9 Mt contained garnet. <i>Heavy Minerals Ltd</i>	
22	Golden Grove Copper + lead + zinc + gold Operating	Drilling, to upgrade resource confidence at Cervantes , intersected 36.9 m at 18.4% Zn, 0.8% Cu, 1.4% Pb, 103 g/t Ag, 1.2 g/t Au and 40.9 m at 2.3% Cu, 11 g/t Ag, 0.2 g/t Au. <i>29Metals Ltd</i>	
23	Canegrass Vanadium + titanium + magnetite Exploration	An updated MRE of 146 Mt at 0.7% V ₂ O ₅ , 31.8% Fe and 6.6% TiO ₂ for 2.2 billion pounds of V ₂ O ₅ , representing a 103% increase in contained V ₂ O ₅ for the Canegrass project was reported. A maiden estimate for copper, nickel and cobalt comprised 146 Mt at 0.066% Cu, 0.062% Ni and 0.016% Co was also reported. <i>Viking Mines Ltd</i>	
24	Victory Bore Vanadium + titanium + magnetite Pre-feasibility	The completed Victory Bore PFS includes an updated MRE of 465 Mt at 0.3% V ₂ O ₅ , 5.1% TiO ₂ and 17.7% Fe and a maiden Probable Ore Reserve of 93 Mt at 0.35% V ₂ O ₅ , 5.2% TiO ₂ and 19.8% Fe. <i>Surefire Resources NL</i>	
25	Lady Julie Gold Exploration	Drilling results from Lady Julie North 4 included 220 m at 1.51 g/t Au, 45 m at 2.65 g/t Au and 42.25 m at 2.84 g/t Au. <i>Magnetic Resources NL</i>	
26	Gwalia-Leonora Gold Operating	Drilling results returned from the Gwalia underground mine confirmed the presence of a consistent high-grade core that included intercepts of 21.2 m at 24.1 g/t Au and 3.3 m at 53.8 g/t Au from the South West Branch lode, and 5.1 m at 36 g/t Au from the South Gwalia Series lode. <i>Genesis Minerals Ltd</i>	
27	Mt Ida Lithium + tantalum Exploration	The updated MRE for lithium at Mt Ida resulted in a combined inferred and indicated resource of 14.6 Mt at 1.2% Li ₂ O, with a 136% increase in indicated resource to 7.8 Mt at 1.3% Li ₂ O, a 21% increase in the global contained Li ₂ O to 180 000 t, and a 98% increase in the MRE for Sister Sam to 9.3 Mt at 1.3% Li ₂ O. <i>Delta Lithium Ltd</i>	
28	Mt Edon Rubidium + cesium Exploration	Drilling across nine targets at Mt Edon intersected high-grade rubidium with assays including 40 m at 0.26% Rb ₂ O. Follow up drilling delivered another 14 intersections containing grades in excess of 1.05% Rb ₂ O + Li ₂ O of varying widths, and up to 535 ppm cesium. <i>Everest Metals Corporation Ltd</i>	
29	Tampu Kaolin Scoping	Results of the Scoping Study for production of HPA using high-quality kaolin as feedstock at the Tampu project included an estimated 58-year LOM utilising the 24.7 Mt mineral resource. Initial testing produced 5N HPA, potentially suitable for the battery and LED markets. <i>Corella Resources Ltd</i>	
30	Caravel Copper + gold Feasibility	Mineral resource for the Caravel copper project was updated to 1.276 Billion tonnes at 0.24% Cu, 47 ppm Mo, 22 ppb Au and 1.1 ppm Ag for 3032 600 t of contained copper, 60 600 t of contained molybdenum, 0.8951 Moz of contained gold and 46.3 Moz of contained silver. Drilling results from the Dasher and Bindi deposits include 96 m at 0.41% Cu and 74 m at 0.25% Cu respectively. <i>Caravel Minerals Ltd</i>	
31	Coolgardie Gold Operating	Gold production resumed at the Coolgardie Gold Operations with commissioning of the Three Mile Hill plant, which produced its first three gold doré bars weighing 15 kg in the first gold smelt. <i>Focus Minerals Ltd</i>	
32	Mt Weld REE Under Development	Kalgoorlie Rare Earths Processing Facility , Australia's first value-added REE processing facility, achieved first feed of material from Mt Weld marking the end of the completion of the kiln and other commissioning activities. <i>Lynas Rare Earths Ltd</i>	
33	Cardunia Rocks REE + lithium Exploration	Discovery of a bedrock REE-hosted mineralized system at Cardunia Rocks was announced with standout drilling results including 11 m at 2.72% TREO, and 11 m at 1.05% TREO. Resource expansion drilling extended the strike of known lithium mineralization at Manna Northeastern Extension by ~500 m with significant intercepts including 11 m at 1.95% Li ₂ O, and 13 m at 1.73% Li ₂ O. <i>Global Lithium Resources Ltd</i>	
34	Kambalda Nickel Pre-feasibility	A maiden MRE for the Silver Lake Hanging Wall deposit, now renamed the 25H deposit, comprised 824 000 t at 1.7% nickel for 13 800 contained nickel tonnes. <i>Lunnon Metals Ltd</i>	
35	Mt Edwards Lithium Exploration	An updated MRE for the Faraday-Trainline lithium deposits saw a 375% increase to 1.96 Mt at 0.69% Li ₂ O with a high-grade, near surface zone of 373 kt at 1% Li ₂ O. <i>Widgie Nickel Ltd</i>	
36	GBF Paris Gold Exploration	Assay results from the Paris prospect revealed high-grade gold mineralized zones with best intercepts including 35 m at 14.12 g/t Au. <i>Torque Metals Ltd</i>	
37	Jeffreys Find Gold Operating	Toll milling and processing of the first ore parcel from the Jeffreys Find gold mine was completed with an initial parcel of approximately 36 000 t of ore being processed. Five doré bars were dispatched to Perth Mint for final refining. <i>Auric Mining Ltd</i>	
38	Norseman Nickel + cobalt + PGE Exploration	A maiden Indicated and Inferred MRE for the Callisto Pd-Pt-Au-Rh-Ni-Cu sulfide deposit comprised of 17.5 Mt at 1.04 g/t 4E, 0.2% Ni, 0.16% Cu for 585 000 oz 4E, 35 kt Ni and 28 kt Cu of contained metal. Approximately 8 Mt (46%) of the total resource is classified within the Indicated category with a 2.5 g/t PdEq grade. <i>Galileo Mining Ltd</i>	
39	Lake Hope / Playa One HPA + potash Scoping	Positive scoping study results based on realistic production and capital expenditure estimates for the Lake Hope HPA project indicated that the project could be one of the lowest-cost producers of HPA globally, with a steady-state production of 10 000 t per annum following a two-year ramp-up. <i>Impact Minerals Ltd</i>	
40	Lake Johnston Nickel + lithium Exploration	Maiden aircore assay results from the Burmeister prospect yielded numerous intercepts of up to 3.23% Ni, including 13 m at 1.12% Ni and 6 m at 1.27% Ni. Aircore drilling of the Burmeister lithium soil anomaly also intersected spodumene bearing pegmatite with high grades up to 2.28% Li ₂ O, including 9 m at 1.35% Li ₂ O and 9 m at 1.62% Li ₂ O. <i>TG Metals Ltd</i>	
41	Kat Gap Gold Operating	After the recent commissioning of the plant, the first batch of ore was processed at Kat Gap , resulting in the maiden production of gold concentrate. <i>Classic Minerals Ltd</i>	
42	Cowalinya REE Exploration	An updated MRE for the Cowalinya project saw a five-fold increase to 159 Mt at 870 ppm TREO. <i>Heavy Rare Earths Ltd</i>	
43	Splinter Rock REE Exploration	A maiden inferred MRE of 344 Mt at 1308 ppm TREO was announced for Splinter Rock , and includes inferred resources for the Centre, Scrum, Flanker and Prop prospects. EIS funded phase 3 drilling at the Centre prospect intersected 58 m at 2060 ppm TREO. <i>OD6 Metals Ltd</i>	
44	Springdale Graphite Scoping	Assay results from RC drilling at the recently discovered Springdale Central prospect included 12 m at 22.6% TGC and 10 m at 20.9% TGC. Based on the updated drilling results, the global Springdale graphite MRE was revised to 49.3 Mt at 6.5% TGC at a 2% TGC cut off. <i>International Graphite Ltd</i>	

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.

For more information, contact: minedex@demirs.wa.gov.au

WESTERN AUSTRALIA – THE WORLD’S PREMIER MINING STATE

Fees, securities and minimum expenditures*

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

* <https://www.dmp.wa.gov.au/Documents/Minerals/Minerals-Feesandcharges.pdf>
* includes rent payments

ha = hectare (100 × 100 m)
Block = approx. 3 km²

Geoscience and resource information

All free via (www.demirs.wa.gov.au)

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

Exploration and mining licence information

All free via (www.demirs.wa.gov.au)

- Online map service (TENGRAPH Web — www.demirs.wa.gov.au/tengraph) 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) (www.demirs.wa.gov.au/mineraltitlesonline)
- Transparent licence system where all licence information can be viewed by anyone
- Exploration and mining licence information

Comprehensive and well-known mining legislation

Free download of Mining Act and Regulations from (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
- Mineralization 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 June 2024

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)

Examples of royalty rates

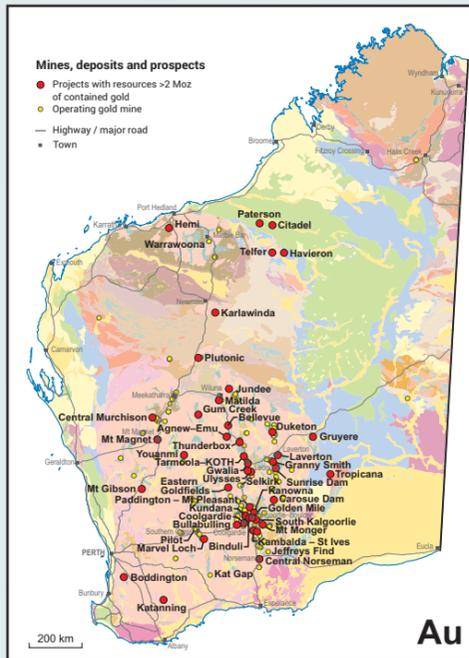
The full list of royalty rates is in Regulation 86 of the Mining Regulations, 1981 or the relevant State Agreement

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

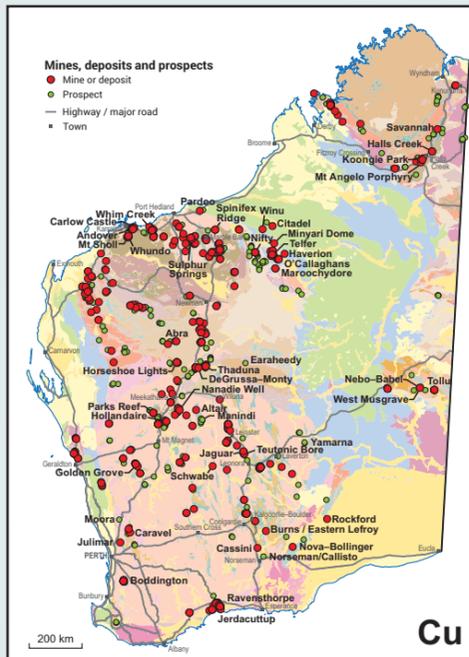
■ Tonnage-based rates ■ Sales value-based rates

DSO = Direct shipping ore

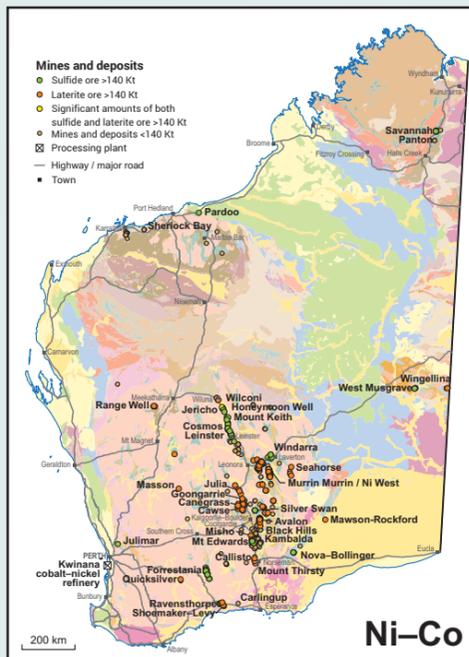
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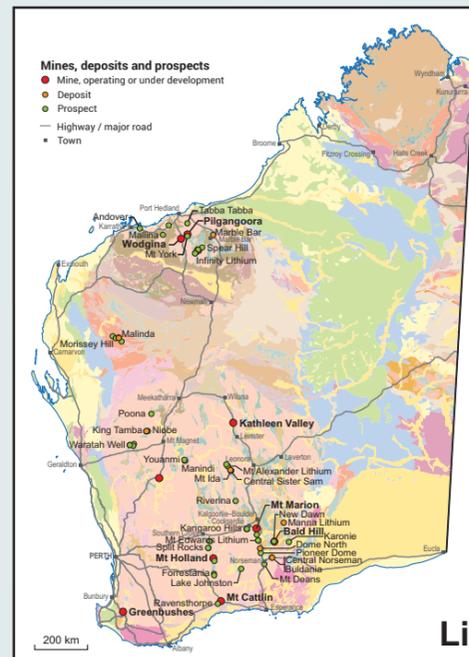
Au



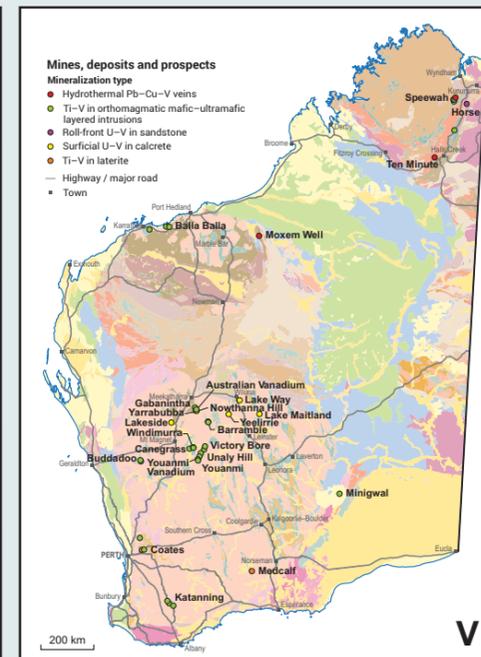
Cu



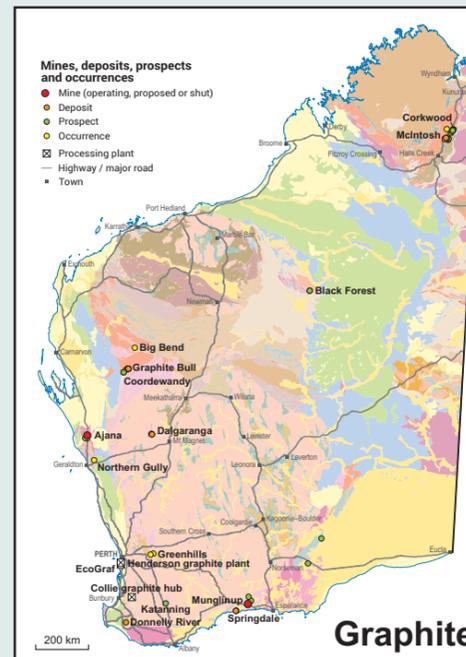
Ni-Co



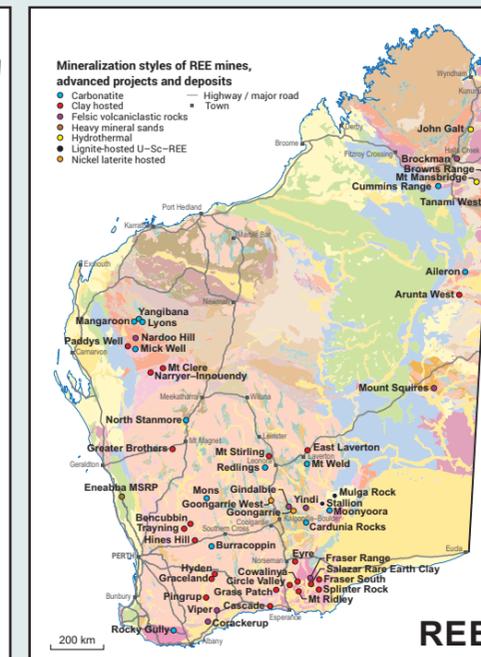
Li



V



Graphite



REE

Department of Energy, Mines, Industry Regulation and Safety (the principal mineral industry regulator)
www.demirs.wa.gov.au

Department of Jobs, Tourism, Science and Innovation (coordinates the development of major resource and infrastructure projects)
www.jtsi.wa.gov.au

Western Australian State Law Publisher (free downloads of WA legislation)
www.legislation.wa.gov.au

Department of Foreign Affairs and Trade
www.dfat.gov.au

Australian Tax Office
www.ato.gov.au

Austrade (Australian Trade Commission)
www.austrade.gov.au