

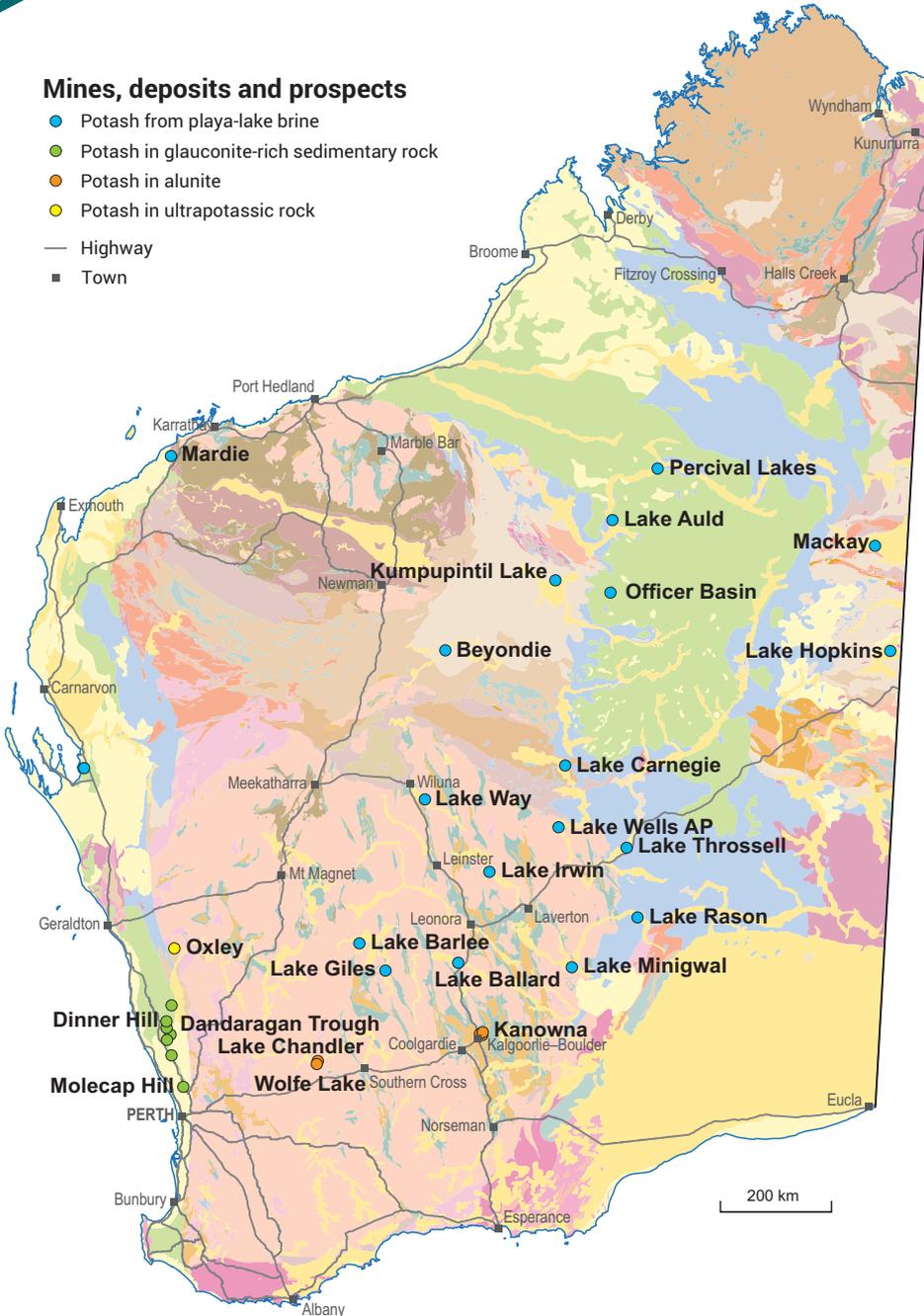
POTASH

INVESTMENT OPPORTUNITIES

WORLD-CLASS RESOURCE PROVINCE | SECURE INVESTMENT LOCATION
WORLD-LEADING GEOSCIENTIFIC DATA | GLOBAL MINING SERVICES INDUSTRY

Mines, deposits and prospects

- Potash from playa-lake brine
- Potash in glauconite-rich sedimentary rock
- Potash in alunite
- Potash in ultrapotassic rock
- Highway
- Town



First shipment of potash from brine from the Beyondie project

- Commercial sales from the Beyondie SOP plant commenced in July 2022
- Western Australia is well positioned to take advantage of the current high demand for potash from both domestic and international markets
- The two most common forms of potash are:
 - Sulfate of Potash (SOP) – potassium sulfate (K_2SO_4)
 - Muriate of Potash (MOP) – potassium chloride (KCl)
- SOP is a premium potash fertilizer unlike MOP which can be harmful to plants. SOP is used primarily on high-value crops, usually leafy plants, fruits and vegetables
- Western Australia has eight brine potash projects with resources all planning to produce SOP by pumping potassium-rich brine into ponds with potassium salts crystallizing by solar evaporation, then harvesting and processing
- Development of SOP projects in Western Australia most recently focuses on playa-lake brine deposits, with several globally significant resources identified including Beyondie, Lake Way, Kumpupintil Lake, Lake Wells and Mackay
- Major works have begun at the Mardie Salt + Potash Project which will produce 5.35 Mtpa of NaCl and 140 ktpa of SOP from seawater
- New discovery at Lake Throssell, with SOP grades up to 14 500 mg/L and a Maiden Resource Estimate recently announced
- The strategic importance of developing these large-scale brine projects is recognized by the State Government, which in 2019, introduced a concessionary rental rate for mining leases (deriving minerals from brine) to reduce the fixed cost imposed by government to a level more comparable with other conventional mining operations

418
Full-time
employees



\$2104 m*
Investment
projects



5.0%
Royalty
rate



(2021–22 financial year)

* Includes projects planned, possible, committed or under construction as of September 2022



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

dmi.rs.wa.gov.au

Geological Survey of
Western Australia



Potash resources ranked by drainable resources of SOP(Mt)

Resources estimated according to JORC 2012

| Project | Status | Owner | Drainable resource SOP (Mt) | Grade SOP (mg/L) | Drainable resource K (Mt) | Grade K (mg/L) |
|------------------|-------------------|-------------------------------|-----------------------------|------------------|---------------------------|----------------|
| Kumpupintil Lake | Feasibility | Reward Minerals | 153.00 | 11 350 | 68.6 | 5 090 |
| Mackay | Feasibility | Agrimim | 123.40 | 7 326 | 55.3 | 3 285 |
| Beyondie | Operating | Kalium Lakes | 33.47 | 13 516 | 15.0 | 6 061 |
| Lake Wells | Feasibility | Australian Potash | 18.10 | 7 455 | 8.1 | 3 343 |
| Lake Throssell | Scoping | Trigg Mining | 14.40 | 10 400 | 6.4 | 4 666 |
| Lake Way | Under development | Salt Lake Potash ¹ | 9.83 | 11 910 | 4.4 | 5 340 |
| Lake Rason | Exploration | Trigg Mining | 6.47 | 5 220 | 2.9 | 2 341 |
| Carnegie | Exploration | Kalium Lakes | 2.20 | 8 700 | 1.0 | 3 901 |
| Lake Hopkins | Inactive | | 4.50 | 8 583 | 2.0 | 3 849 |

¹Went into voluntary administration in 2021

| Project | Status | Owner | Resources (Mt) | Av. grade K ₂ O (%) | Contained K ₂ O (Mt) |
|----------------|-------------|------------------------|----------------|--------------------------------|---------------------------------|
| Dinner Hill | Inactive | | 910.0 | 3.81 | 34.7 |
| Oxley | Feasibility | Centrex Metals | 154.7 | 8.30 | 12.8 |
| Lake Chandler* | Exploration | Lake Chandler Minerals | 5.8 | 5.73 | 0.3 |
| Cadoux Kaolin | Feasibility | FYI Resources | 11.3 | 1.01 | 0.1 |

Resource estimates have been rounded
* Compliant with JORC 2004

Spatial and resource estimates data sourced from
WA Mines and Mineral Deposit database (MINEDEX)

- Potash from playa-lake brine
- Potash in glauconite-rich sedimentary rock
- Potash associated with alumina
- Potash in ultrapotassic rock
- Potash in alunite

Potash resources in Western Australia

- Another common source of potash is glauconite in sedimentary greensands. The principal resource is within the Perth Basin (Dandaragan Trough potash – phosphate project)
- Additional potash resources are associated with alunite at Lake Chandler
- An unusual potassium resource occurs in feldspar in Proterozoic ultrapotassic microsyenite at Oxley in the Moora Basin. The proposed product is potassium nitrate (KNO)
- Historical production of potash in Western Australia targeted alunite-rich clay deposits at Lake Chandler (9218 t of crude potash) and Kanowna (production not recorded), carried out mainly during World War II



Grader and header operating at the Beyondie SOP project
(Image courtesy of Kalium Lakes Ltd and the Northern Australian Infrastructure Fund)

For more information

MINEDEX is a spatial and textual database of mining and exploration activity

MINEDEX www.dmirs.wa.gov.au/minedex

GeoVIEW.WA is a free GIS-based spatial viewer

GeoVIEW.WA www.dmirs.wa.gov.au/geoview

Contact us

Sarah Sargent, Mineral Investment Specialist
Geological Survey and Resource Strategy Division

Email: minerals.investors@dmirs.wa.gov.au

Tel: +61 8 9222 3890

The DMIRS MINEDEX, Statistics, and Geoscience and Titles Information teams have contributed to the production of this flyer



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

February 2023

Geological Survey of
Western Australia

