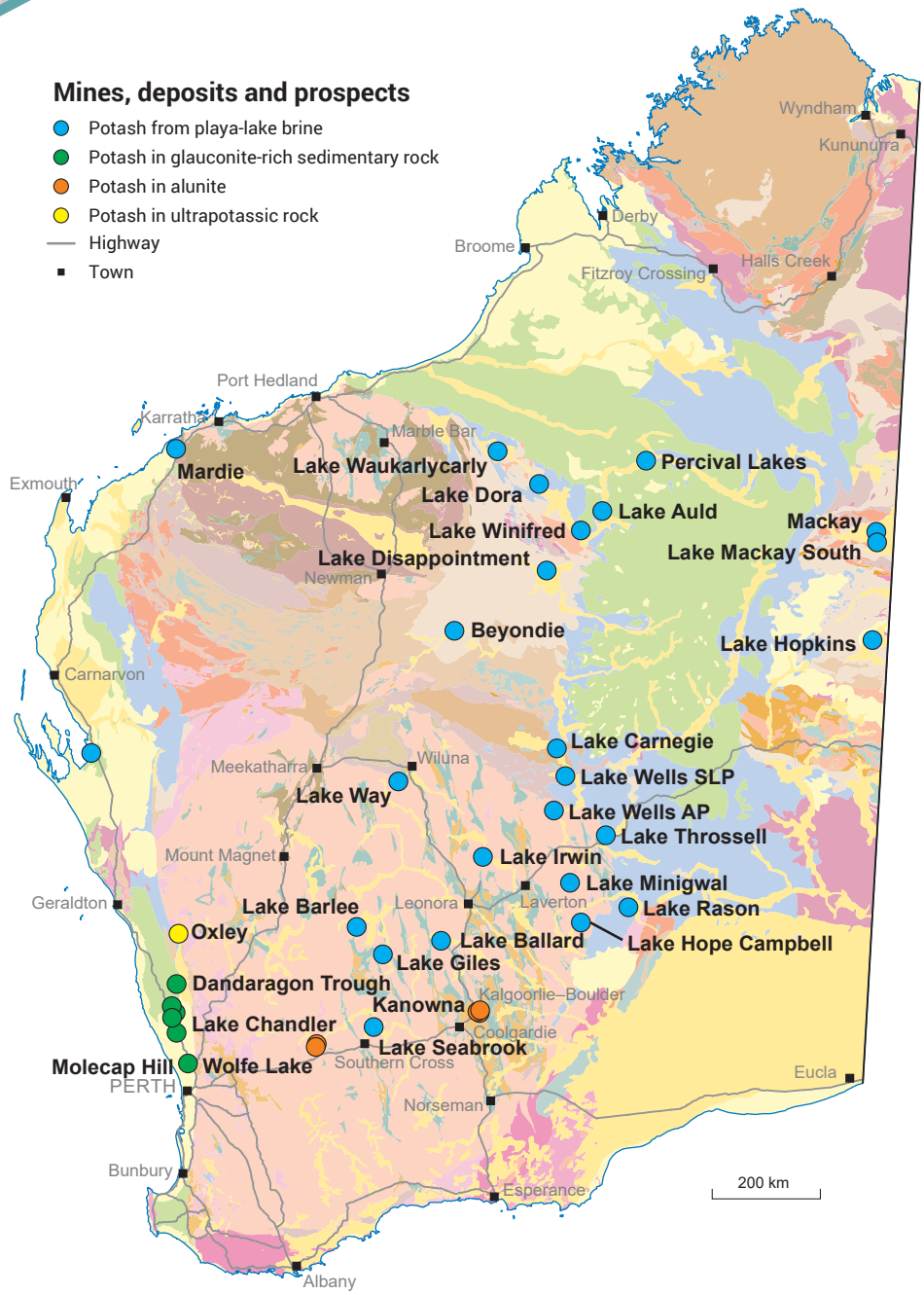
POTASH

INVESTMENT OPPORTUNITIES

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



Western Australia expects first potash production from brine in 2020

- Western Australia is well positioned to take advantage of the current high demand for potash from both domestic and international markets
- Potash is considered a critical mineral, with 90% of the global supply used in fertilizer products
- 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
- Development of SOP projects in Western Australia most recently focuses on playa-lake brine deposits, with several globally significant resources identified, including Beyondie, Lake Disappointment, Lake Wells and Lake Mackay
- Six projects have completed or are working towards completing a feasibility study
- Beyondie is anticipated to be the first to begin commercial SOP production in 2020

$1314 m*	10th	5.0%
Investment projects	Resources world ranking	Royalty rate

(2018 calendar year)

* Includes projects planned, possible, committed or under construction as of September 2019

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

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Potash projects with resources

Resources estimated according to JORC

Project	Status	Owner	Drainable resource SOP (Mt)	Grade SOP (mg/L)	Drainable resource K (Mt)	Grade K (mg/L)
Lake Disappointment	Feasibility study	Reward Minerals Ltd	153	11 350	68.6	5 090
Lake Wells	Pre-feasibility study	Salt Lake Potash Ltd	(85)*	8 740	(38.1)*	3 919
Lake Mackay	Feasibility study	Agrimin Ltd	20.7	8 000	9.3	3 590
Beyondie	Mine proposed	Kalium Lakes Ltd	19.64	12 434	8.8	5 585
Lake Wells	Feasibility study	Australian Potash Ltd	18.1	7 455	8.1	3 343
Lake Way	Pre-feasibility study	Salt Lake Potash Ltd	11.4	15 200	5.1	6 800
Lake Hopkins	Exploration	Sandfire Resources NL	4.5	8 583	2.0	3 849
Carnegie JV	Pre-feasibility study	Kalium Lakes Ltd / BCI Minerals Ltd	0.88	7 724	0.4	3 466

Project	Status	Owner	Ore (Mt)	Av. grade K_2O (%)	Contained K_2O (Mt)
Dandaragan Trough	Feasibility study	Parkway Minerals NL	910.0	3.81	34.7
Oxley	Feasibility study	Centrex Metals Ltd	154.7	8.30	12.8
Lake Chandler	Exploration	ActivEX Ltd	5.8	5.73	0.3

Potash from playa lake brine

Potash in ultrapotassic rock

Potash in glauconite-rich sedimentary rock

Potash in alunite

* In situ resource

Summary of potash resources in Western Australia

- 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
- 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
- Another common source of potash is glauconite in sedimentary greensands. The principle 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 tonnes of crude potash) and Kanowna (production not recorded), mainly during World War II

For more information

Geological Survey of Western Australia www.dmirs.wa.gov.au/gswa

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

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

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