VULCAN ENERGY

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Future phase pipeline: Mannheim resources growth

76% increase in lithium brine resource estimate
Maiden geothermal energy resource estimate
Scoping study in progress for future phase of production

Vulcan Energy (Vulcan, ASX: VUL, FSE: VUL, the Company[1]) is pleased to announce that following a 3D seismic survey, it has successfully completed an updated lithium brine Resource estimation, together with a maiden geothermal energy Resource estimation, for the Mannheim licence area of Germany's Upper Rhine Valley Brine Field (URVBF).

Key highlights

- The lithium brine Resource estimation update for the Mannheim sector estimates the total lithium brine Resource (Indicated and Inferred) has increased from 1,833kt LCE @ 153 mg/Li to 3,225kt LCE @ 155 mg/Li, which is an increase of 1,392kt LCE[2]
- A large-scale in place maiden geothermal Resource of 2,848 PJ (Indicated) and 10,539 PJ (Inferred) has also been estimated for the Mannheim sector of which 171 PJ (Indicated) and 377 PJ (Inferred) are considered recoverable. The Company intends to continue to complete geothermal energy Resource estimations under the Australian Geothermal Reporting Code for all its development areas within the URVBF, to better assist with investors' understanding of the scale of the URVBF geothermal potential
- Mannheim is one of a number of areas the Company is progressing within the URVBF to potentially develop as a future phase of integrated lithium and renewable energy production in addition to the Company's Phase One Lionheart development
- Vulcan is progressing a Scoping Study for the Mannheim licence which is located 40km to the northeast of Phase One. The study will look to add further production in addition to the Phase One integrated lithium and geothermal renewable energy development including expansion of the downstream lithium hydroxide monohydrate (LHM) facility in Industrie-Park Höchst
- It is envisaged Vulcan will deliver baseload geothermal heat from the Mannheim region geothermal resource to the district heating network of MVV Energie AG (MVV), one of Germany's leading energy companies, while simultaneously extracting sustainable lithium for EV battery production. Negotiations with MVV to revise the current heat offtake agreement are ongoing to take into account an updated development

[1] Vulcan Group refers to Vulcan and one or more of its subsidiaries.
[2] This consists of the Indicated Resource increasing from 288kt LCE @ 153 mg/Li to 820kt LCE @ 155 mg/Li and the Inferred Resource increasing from 1,545kt LCE @ 153 mg/Li to 2,405kt LCE @ 155 mg/Li.

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- Harnessing natural heat to produce lithium from sub-surface brines and to power conversion to battery-quality material, the Company is building a local, low-cost source of sustainable lithium for European electric vehicle batteries. Phase One of the Project has recently been identified as a Strategic Project under the European Commission's Critical Raw Materials Act (CRMA), reflecting the Project's alignment with the objectives of the CRMA: to secure a sustainable supply chain for critical raw materials, including lithium, across Europe.

Vulcan Energy Managing Director and CEO, Cris Moreno, commented: "The completion of the lithium brine Resource update, together with our first geothermal energy Resource estimate, is yet another step forward in advancing our pipeline of integrated lithium and renewable energy project development in the Upper Rhine Valley Brine Field beyond our Phase One development.

"This further validates our strategy to replicate the current phase into future phases by utilising the URVBF bordering Germany and France. The URVBF is the largest lithium Resource in Europe, as well as one of the highest quality brine geothermal resources, and therefore a significant asset for Europe's energy and critical raw materials security."

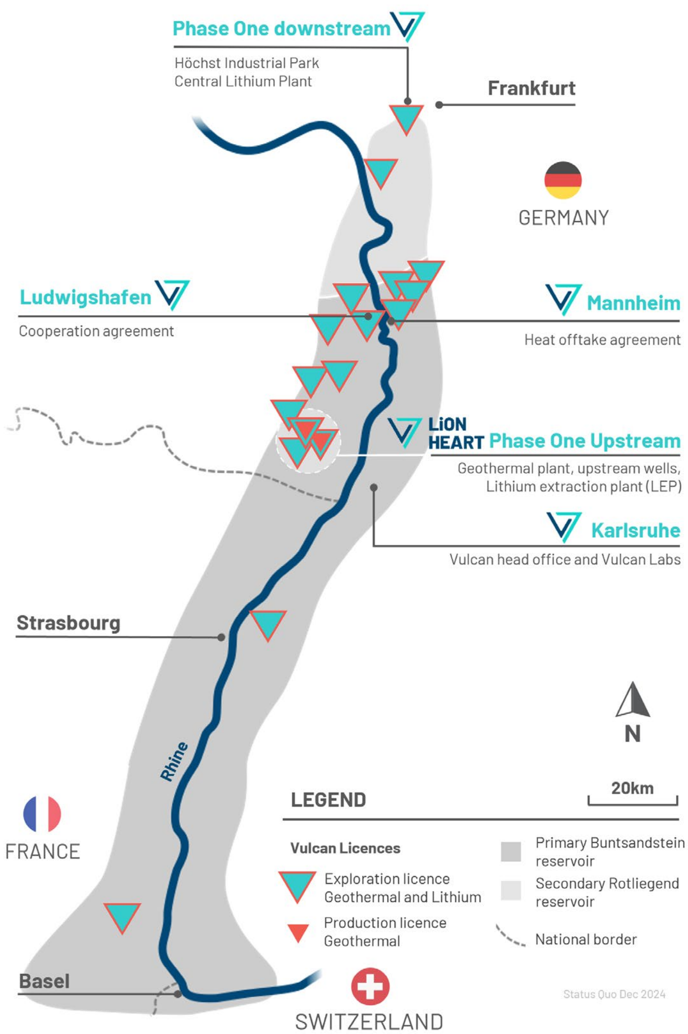

Figure 1: Overview of the Vulcan Group Upper Rhine Valley Brine Field

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Background

This lithium brine Resource estimation update, and maiden geothermal energy Resource estimation, both for the Mannheim region of Germany's URVBF, is based on a Competent Person's Report prepared by GLJ Ltd as Competent Person (CP) for the Company (Report).

Lithium Mineral Resource Estimation update – Mannheim, Germany

The Mineral Resource Estimation for the Indicated Resource classification is 820 kt LCE and for the Inferred Resource classification is 2,405 kt LCE for the Mannheim licence per Table 1. In accordance with the JORC code the checklist of assessment and reporting criteria as applicable for the Report is contained in the JORC Table in Annexure 2. The Lithium Mineral Resource Estimations are in line with and build on previous work, with increased confidence in the Mannheim area where Vulcan Group has performed additional exploration activities, gathered and analysed further data, and advanced the lithium extraction technology project at Phase One that is the basis for the Mannheim future development.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Inferred Mineral Resources have a lower level of confidence associated with their estimation than Indicated Mineral Resources, but it is reasonably expected that with further exploration most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources. Indicated Mineral Resources are sufficiently well defined to allow application of modifying factors to support mineral extraction planning and economic evaluations of the deposit.

It is the opinion of the CP that the methods utilised to estimate the lithium Mineral Resources followed accepted industry practices and utilised a thorough approach and are deemed to have reasonable prospects for economic extraction with application of modifying factors.

Table 1: Summary of Lithium Mineral Resource Estimation for Vulcan Group Mannheim licence area

Licence	Reservoir	Classification	GRV	Average NTG	Average Phie	Average Lithium	Elemental Lithium in Place	LCE
			km^3	%	%	mg/L	kt	kt
Mannheim	BST	**Indicated**	11	90	10	155	154	820
	BST, MUS, BM	**Inferred**	41	83	8	155	452	2,405

Note 1: Mineral Resources are not Ore Reserves and do not have demonstrated economic viability. Note 2: The weights are reported in metric tonnes (1,000 kg or 2,204.6 lbs). Numbers may not add up due to rounding of the resource value percentages. Note 3: Reservoir abbreviations: MUS – Muschelkalk Formation, BST – Buntsandstein Group; BM - Variscan Basement. Note 4: To describe the resource in terms of industry standard, a conversion factor of 5.323 is used to convert elemental Li to Li_2CO_3, or LCE. Note 5: NTG and Phie averages have been weighted to the thickness of the reservoir. Note 6: GRV refers to gross rock volume, also known as the aquifer volume. Note 7: Mineral Resources are considered to have reasonable prospects for eventual economic extraction under current and forecast lithium market pricing with application of Vulcan Group's A-DLE processing. Note 8: The values shown are an approximation and with globalised rounding of values in the presented summary table as per JORC guidelines, cannot be multiplied through to achieve the Mineral Resource Estimated volumes shown above. Note 9: The Company's combined URVBF Mineral Resource Estimate is contained on page 141 of its 2024 Annual Report. See also the Competent Person Statement at the end of this announcement.

The previously reported Mineral Resource Estimation for Mannheim was made up of Indicated Resources of 288 kt LCE and Inferred Resources of 1,545 kt LCE based on average lithium concentration of 153 mg/L. The upgrading of volumes is associated with a slight revision to the lithium concentration to be consistent with available data, and increased Gross Rock Volume and adjustment to NTG for Inferred based on newly acquired and processed 3D seismic and updated geological modelling. There has been no change to the remainder of the Company's Mineral Resource, which is contained on page 142 of Vulcan's 2024 Annual Report.[3]

Geothermal Resource Estimation – Mannheim, Germany

The report provides an initial reporting of Geothermal Resources for Vulcan Group's Mannheim licence area, which are within the Vulcan Group licences in the URVBF. The Geothermal Resource Estimation is being publicly disclosed in accordance with the Geothermal Reporting Code and the Assessment and Reporting criteria are listed in the Geothermal Code Table in Annexure 1. The Geothermal Resources Estimation presented in the report was completed in accordance with the Geothermal Reporting Code. In the opinion of the Competent Person (CP), the Mannheim licence area has a reasonable prospect for eventual economic extraction based on aquifer geometry, delineation of fault zones using newly acquired and re-interpreted seismic data, brine volume, porosity, and heat flow.

Geothermal Resources are not Geothermal Reserves and may not be economically recoverable with existing technology and prevailing market conditions. Geothermal Resources are not an inventory of all heated areas drilled or sampled, regardless of Base or Cut-Off Temperature, likely dimensions, location or extent. It is a realistic inventory of those geothermal plays which, under assumed and justifiable technical and economic conditions, might, in whole or in part, be developed.

Table 2: Summary of Geothermal Resource Estimation for the Mannheim licence area

Licence	Classification	Thermal Energy in Place	Recoverable Thermal Energy
		PJ	PJ
Mannheim Licence Area			
Mannheim	Indicated	2,848	171
	Inferred	10,539	377

Overview

Vulcan Energy is a producer of geothermal renewable heat and power in the Upper Rhine Valley of Germany and holds geothermal and lithium licences in an area referred to as the Upper Rhine Valley Brine Field ("URVBF") or in some cases referred to as the Upper Rhine Graben Brine Field ("URGBF"). The URVBF is a geothermally hot and deep subsurface brine field which is enriched in lithium. It is strategically located in the heart of the European electric vehicle ("EV") market, providing close access to the EV supply chain, and the infrastructure supporting the automobile industry. The Vulcan Group is progressing an integrated commercial scale lithium co-production with renewable geothermal heat and power as part of their phased development of the URVBF starting with the Project Phase One Lionheart ("Lionheart" or "Phase One"). This Project proposes to provide geothermal renewable electricity and heat to local communities, as well as the production of battery-quality lithium in the form of lithium hydroxide monohydrate ("LHM").

In November 2023, Vulcan Group completed a Bridging Engineering Study ("Bridging Study" or "BES") on the Phase One commercial development. Pursuant to the Bridging Study, Phase One includes the construction of a geothermal plant and a lithium extraction plant ("LEP"), and a central lithium plant ("CLP") with a production target capacity of approximately 24,000 metric tonnes per annum ("tpa") of lithium monohydrate ("LHM"), along with over 275 gigawatt hours ("GWh") per annum ("GWh/a") of renewable power production capacity and over 560 GWh/a of renewable heat production capacity. Vulcan Group intends to develop

[3] See also the Competent Person Statement in this announcement.

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further phases across its licence areas, as the Company plans to grow production in a staged, modular fashion, however the development of any further expansion beyond Phase One remains subject to the availability of funding, and the exact timing is still to be defined.

Vulcan Group has built a large team that includes scientists, geoscientists, engineers and commercial specialists in the fields of lithium chemicals, subsurface characterisation, field development and geothermal renewable energy. Vulcan Group has binding lithium offtake agreements with some of the largest cathode, battery, and automakers in the world. As a company whose business model for the Project combines a carbon neutral extraction process with renewable energy generation, Vulcan Group has Environment, Social and Governance ("ESG") considerations deeply embedded in its corporate strategy.

Vulcan Group has previously reported Lithium Mineral Resources and Ore Reserves in accordance with Joint Ore Reserves Committee Code ("JORC") of the Australasian Institute of Mining and Metallurgy (2012) for licences in the URVBF. The last Competent Person Report was published December 17, 2024, on the ASX as part of the Prospectus for Regulated Market of FSE (Prime Standard), referred to as the "Prospectus CPR 12-2024" in this announcement. The content in the report is based on much of the content of the last CPR, and where information is the same, the report will reference to the Prospectus CPR 12-2024 in lieu of repeating the information.

The report provides the reporting of Geothermal Resource estimation for the Mannheim licence area, in accordance with the Australian Code for Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves, ("Geothermal Reporting Code" or "GRC"), Second Edition (2010), developed by the Joint Committee of the Australian Geothermal Energy Group ("AGEG") and the Australian Geothermal Energy Association ("AGEA") as well as the supporting Geothermal Lexicon for Resources and Reserves Definition and Reporting ("Geothermal Lexicon"), Edition 2, compiled by Lawless, J. for The Geothermal Code Committee. Additionally, due to newly acquired data in the Mannheim licence area, there is an update provided on Lithium Mineral Resource estimation for the Mannheim licence in this announcement.

Geothermal Resource Estimation is reported for the Mannheim licence, which is part of a future phase of development, described as Mannheim Sector or Mannheim licence area in the report.

Phase One of the Project plans for a central surface facility for geothermal energy and lithium extraction, where the integrated facilities are referred to as the geothermal and lithium extraction plant ("**GLEP**"), which will be fed from a number of multi-well pads. Lithium extraction and processing will be conducted in two stages, starting at the GLEP and proceeding to a CLP processing facility at Hoechst, near Frankfurt. The battery grade product LHM will be produced and sold from the CLP.

The Mannheim licence area, as reported in this study, has been granted an exploration licence. In the Prospectus CPR 12-2024 there is further detail on the other licences that the Vulcan Group holds within the URVBF. Figure 2 shows the location of the Lionheart and Mannheim licence areas. There are currently no operating geothermal facilities in the Mannheim licence area. The Vulcan Group plans a similar development to the Phase One Project which has been described in the Prospectus CPR 12-2024, for lithium co-production with geothermal power and heat at Mannheim in the future as part of a different Phase.

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Listing Rule 5.8 Requirements - Mineral Resources

Listing Rule 5.8.1 Item	Location in announcement
• geology and geological interpretation	Pages 66, 71, 77, 78.
• sampling and sub-sampling techniques;	Pages 63, 64, 65 & 66.
• drilling techniques;	Page 62, 63, 67, 72 & 75.
• the criteria used for classification, including drill and data spacing and distribution. This includes separately identifying the drill spacing used to classify each category of + mineral resources (inferred, indicated and measured) where estimates for more than one category of +mineral resource are reported;	Pages 64, 65, 66, 67, 78, 79, 83 & 84.
• sample analysis method;	Pages 62, 63, 64, 65, 66 & 68.
• estimation methodology;	Pages 9, 78 – 86.
• cut-off grade(s), including the basis for the selected cut-off grade(s); and	Pages 65, 66, 74, 75, 79 - 81.
• mining and metallurgical methods and parameters, and other material modifying factors considered to date	Pages 81 - 83.

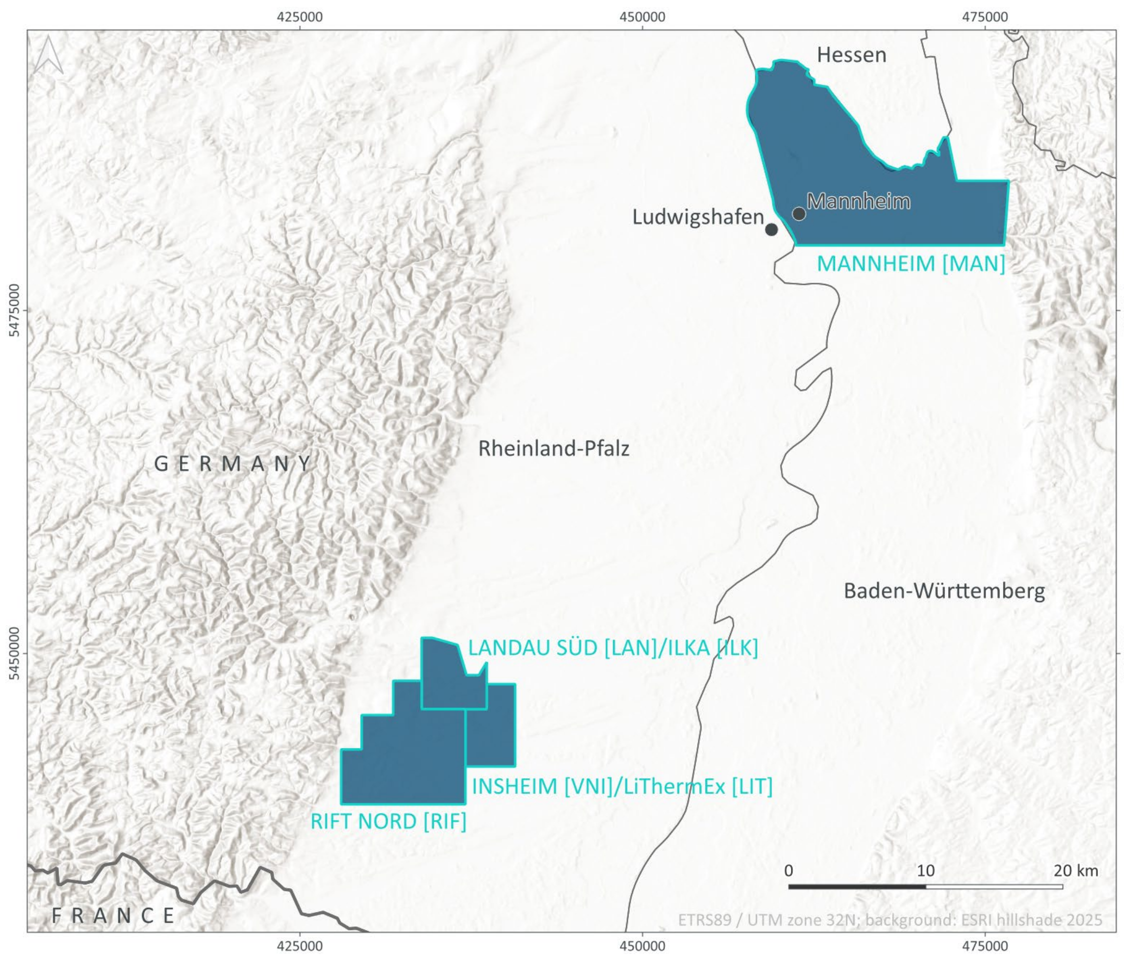

Figure 2: Geothermal and Lithium Licences for Mannheim and Lionheart cluster

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Geology and exploration

The Upper Rhine Graben ("**URG**") regional geology and lithium system are fully described in the previous report Prospectus CPR 12-2024. In this study, the content provides updates as applicable, and content related to geothermal characterization for the Mannheim licence area. Since the publication of the previous report Prospectus CPR 12-2024, interpretations from the reprocessed and merged Weinheim 3D and Mannheim 3D seismic data have been integrated into the geologic model, providing updated mapping of geologic formations and faults over the Mannheim licence area. In the sections below, the Mannheim geologic model, URG geothermal system, and predicted reservoir temperatures for the Mannheim licence are described.

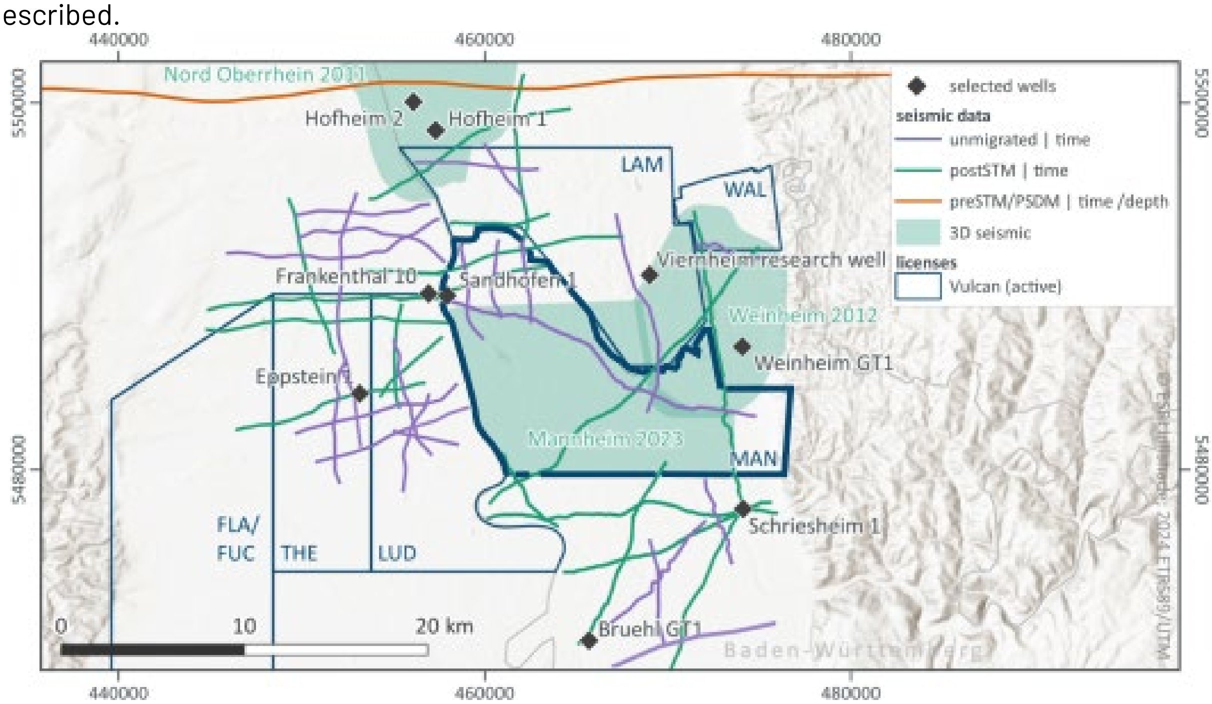

Figure 3: Mannheim licence 2D and 3D seismic coverage

The targeted reservoir at Mannheim is composed of Middle and Lower Buntsandstein along with fault damage zones ("**FDZ**") that cut through the upper 100 m of crystalline basement, Rotliegend (where present), Buntsandstein, and Muschelkalk. The Rotliegend is interpreted to not be present in the Mannheim area based on seismic interpretation. Lithology and sedimentology of the Buntsandstein and the Muschelkalk is essentially the same as in Lionheart, except that the Muschelkalk in the Mannheim licence area is interpreted to have been closer to surface during Early Tertiary and therefore potentially prone to karstification. The Muschelkalk is also interpreted to only be present in the western and southern parts of the Mannheim license, due to Early Tertiary erosion.

Petrophysical data from various sources, including public datasets and proprietary datasets purchased by Vulcan, were integrated as part of the Bridging Study to assess regional reservoir quality. Porosity and permeability estimates were derived from offset wells, including Brühl GT1, Offenbach GT1, Kraichgau 1002, Soultz EPS-1, Landau, Römerberg, and Appenhofen-1. The data includes well log data, core plug data (in-house and published), reports on hydraulic tests, and published ranges and mean values.

Data availability varies between the different stratigraphic units with the largest data set being available for the Buntsandstein formation, which represents the primary target reservoir. Due to differences observed between outcrop and subsurface rock properties, subsurface datasets were prioritized for reservoir quality assessment. Core measurements from seven wells in the URG basin (Appenhofen-1, five Römerberg oil wells, and one Landau well) were used to evaluate porosity and permeability within the Buntsandstein.

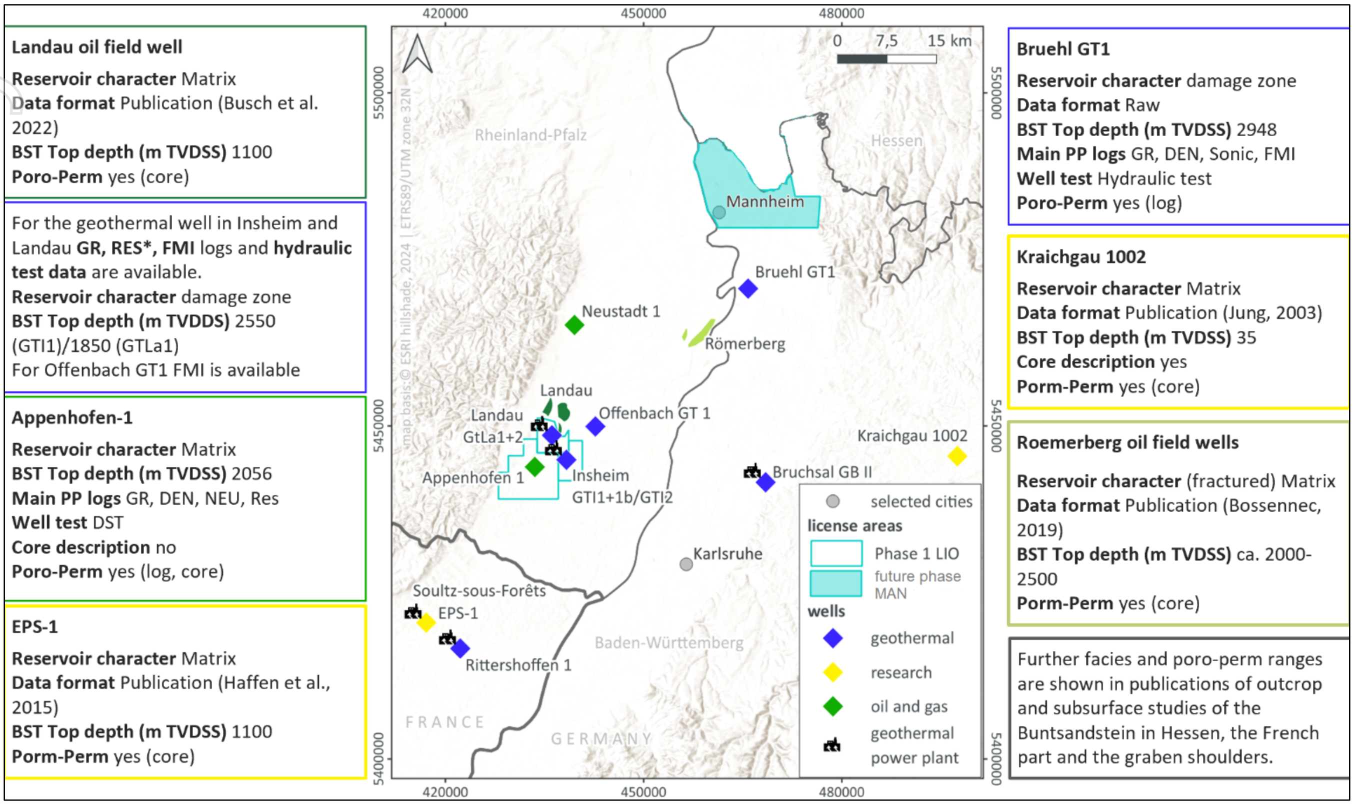

Figure 4: Well data availability for the Buntsandstein interval on a regional scale showing the Lionheart and Mannheim licence areas.

Effective porosity, defined as the interconnected pore space that contributes to significant fluid flow, was established based on permeability thresholds. Using results from producing and previously producing geothermal and hydrocarbon wells in the URG (Appenhofen-1, Landau 207 and 211, Römerberg oil field wells), effective porosity was defined as porosity associated with a permeability greater than 0.02 mD. This threshold aligns with the Canadian Oil and Gas Evaluation Handbook (COGEH, 2005) and the theoretical framework provided by Nelson (1994). The table below presents a porosity-permeability crossplot for

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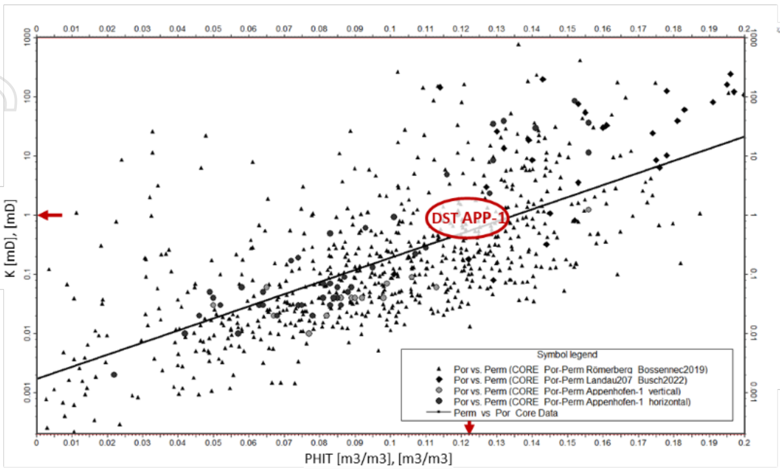
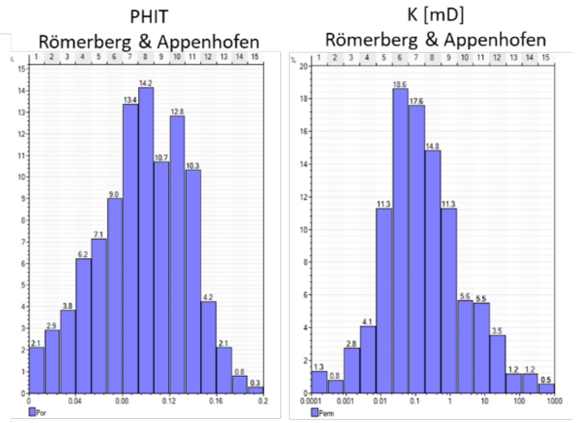
Buntsandstein core data, highlighting a positive correlation and supporting an effective porosity cutoff of approximately 5%.





	PHIT [%]	K [mD]
Min	0.3	0.0001
Max	22	766
Mean (Arithm.)	9.7	7.3
Median	10	0.1
Std. dev.	4.0	43.5

Figure 5: (Left to right) Overall porosity-permeability relationship of the compiled core data (Landau oil field (1 well), Römerberg (5 wells), and Appenhofen-1); and histograms of the core porosity and permeability data from Appenhofen-1 and the Römerberg wells.

For the Mannheim licence, structural and geocellular models have been created from well and seismic data, following the methodology as previously described in the Prospectus CPR 12-2024.

Mannheim geology

Top Buntsandstein is mapped to be between 3.2 km and 4.2 km depth, which is significantly deeper than in the Lionheart project area reflecting the Mannheim licence's location within the "Heidelberger Loch" or "Heidelberger Basin", where the thickest Pliocene and Quaternary sedimentary fill within the entire URG is observed. The Eastern Rhine Graben bounding fault intersects the licence area in a roughly N-S direction and is itself not considered a target but instead marks the Eastern boundary of the static geological model area. The Buntsandstein thickness map shows the effect of Early Tertiary erosion in the northwest edge of the licence.

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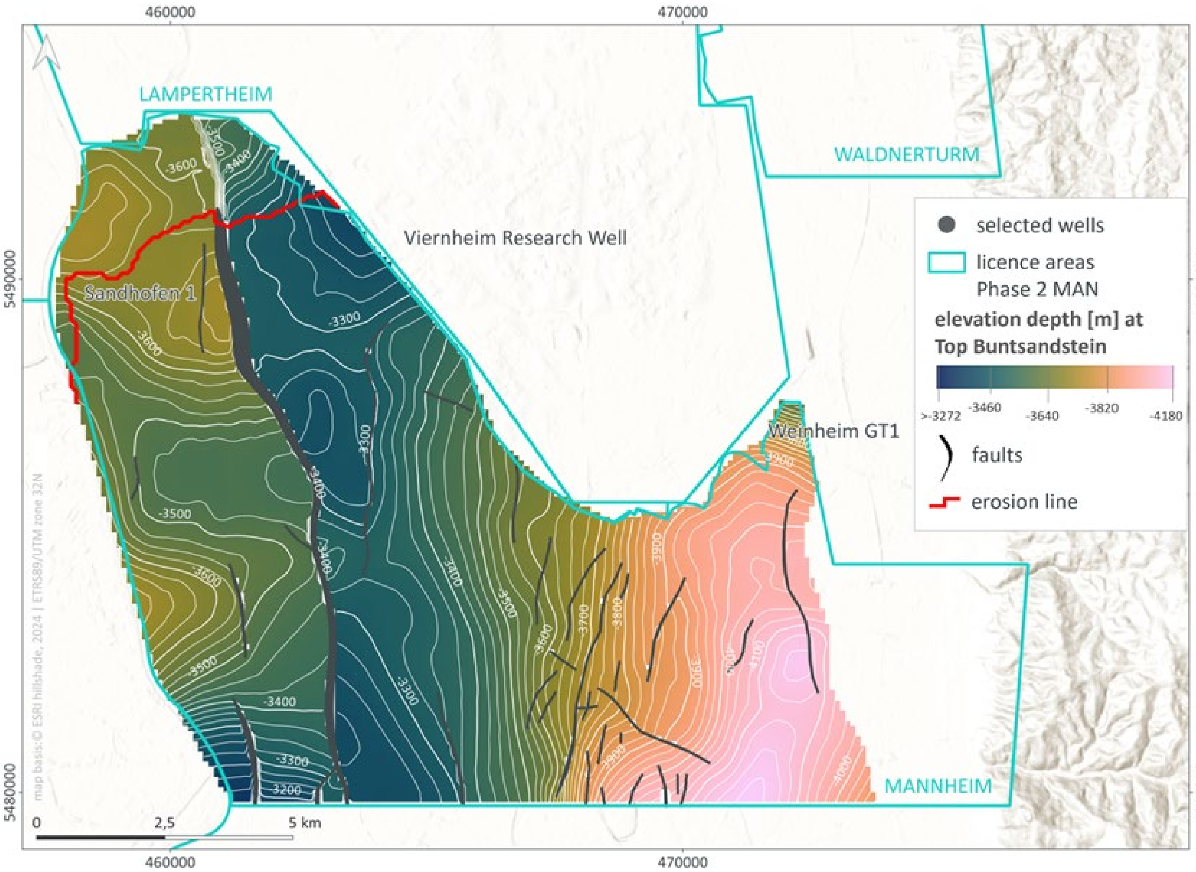

Figure 6: Structure map of top Buntsandstein from the Mannheim (MAN) static model shows the area is structurally divided in two areas, separated by a prominent fault.

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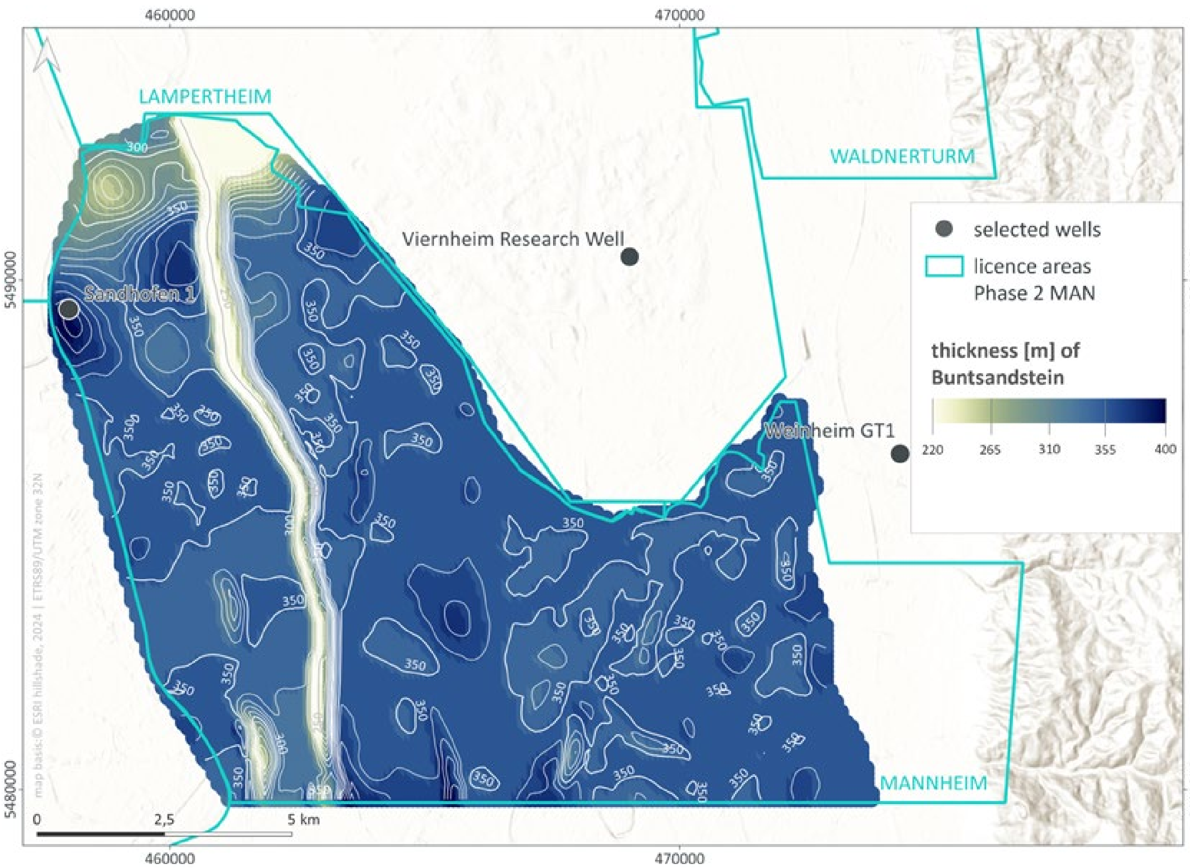

Figure 7: Buntsandstein reservoir thickness map for the Mannheim (MAN) licence showing a thinning towards the northwest due to Early Tertiary erosion.

The geothermal well Brühl GT1 is currently the main and nearest reference well available for the evaluation of the Mannheim licence. The well has been drilled into a fault zone within the Buntsandstein. The production and injection tests showed that the heavily fractured fault zone encountered in the Middle Buntsandstein is highly permeable. During a production test, a total of 1,000 m^3 of thermal fluid was produced by a natural artesian outflow at a flow rate of approximately 50-70 l/s. No production pump was required, and the pressure drop at reservoir depth was approximately 2.5-2.8 bar. This roughly corresponds with a productivity index of 15-25 l/s*bar. With a standard Line Shaft Pump (LSP) as used in Vulcan's current projects, a production in excess of 100l/s would be expected from the Brühl well. The evaluation of the injection test resulted in an injectivity index of 5-10 l/s*bar. The well Brühl GT1 flow tests were at very high rates, and this well showed no induced seismicity during the test.

The new 3D seismic and updated interpretation, combined with results from nearby wells, indicates the presence of Muschelkalk, Buntsandstein, and basement units within the Mannheim licence. The data also suggests that reservoir quality is similar to that observed in the Lionheart area and is modelled from the seismic data to extend northward into Mannheim. The interpretation of the reservoir and the corresponding volumetric estimate will be further refined when the first wells are drilled within the license area.

URG geothermal system

The URG represents a non-magmatic, fault-controlled geothermal system situated in an extensional tectonic setting (Moeck, 2014). As a Cenozoic continental rift with significant lithospheric thinning, up to 25% compared to surrounding regions (Brun et al. 1992), the URG experiences elevated heat flow and

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geothermal gradients relative to much of Central Europe. This unique geodynamic environment forms the basis for a convection-dominated geothermal play.

Geothermal and lithium-enriched fluids in the URG are primarily driven by deep-seated convection through active fault zones, where frequent natural seismicity helps maintain fracture permeability. The primary heat source is a combination of elevated radiogenic heat production in the mica-rich granitic Variscan basement and enhanced heat flow due to crustal thinning. Temperature anomalies across the basin are further influenced by the low thermal conductivity of overlying clay-rich Keuper and Tertiary sediments, which act as thermal blankets and regional top seals. These formations not only cap convection cells but also mark the transition from conductive to convective heat flow regimes, as observed in temperature-depth profiles of regional geothermal wells. According to Freymark et al. (2017) the median geothermal gradient in the central to northern part of the URG is 48 K/km modelled at 3,000 m depth and 41 K/km at 5,000 m depth.

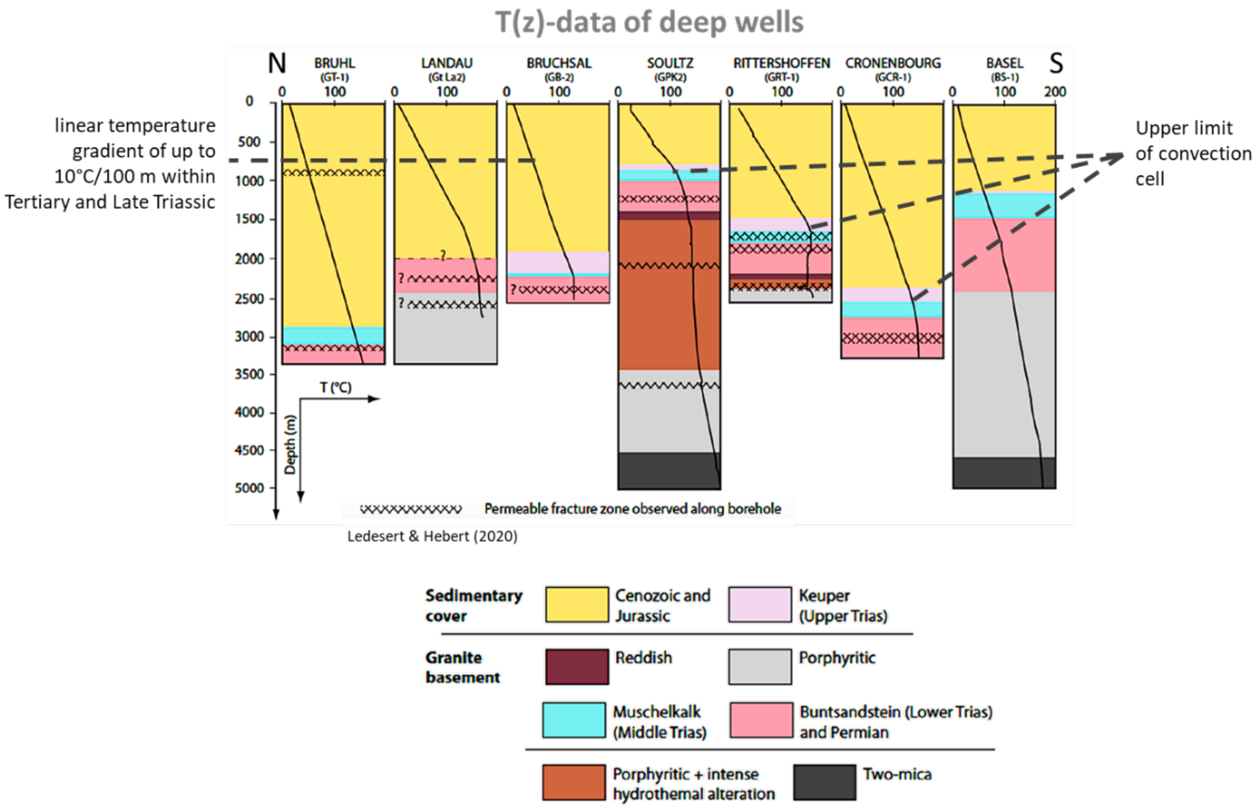

Figure 8: Temperature versus depth plot for wells across the Upper Rhine Graben show that the convection cells are capped by a regional shale (Keuper or lower Tertiary), which acts as a top seal (modified after Ledesert & Hebert, 2020). The change of slope in geothermal gradient indicates change from conductive to convective heat flow regime.

The Buntsandstein formation functions as a key geothermal reservoir due to its high fracture permeability and matrix porosity, capable of storing and conducting hot lithium-rich fluids. Confinement of these fluids is achieved by the overlying regional seals, while meteoric recharge supports fluid budgets and drives fluid-rock interactions. The regional variation in predicted reservoir temperature at the top of the Buntsandstein formation is shown.

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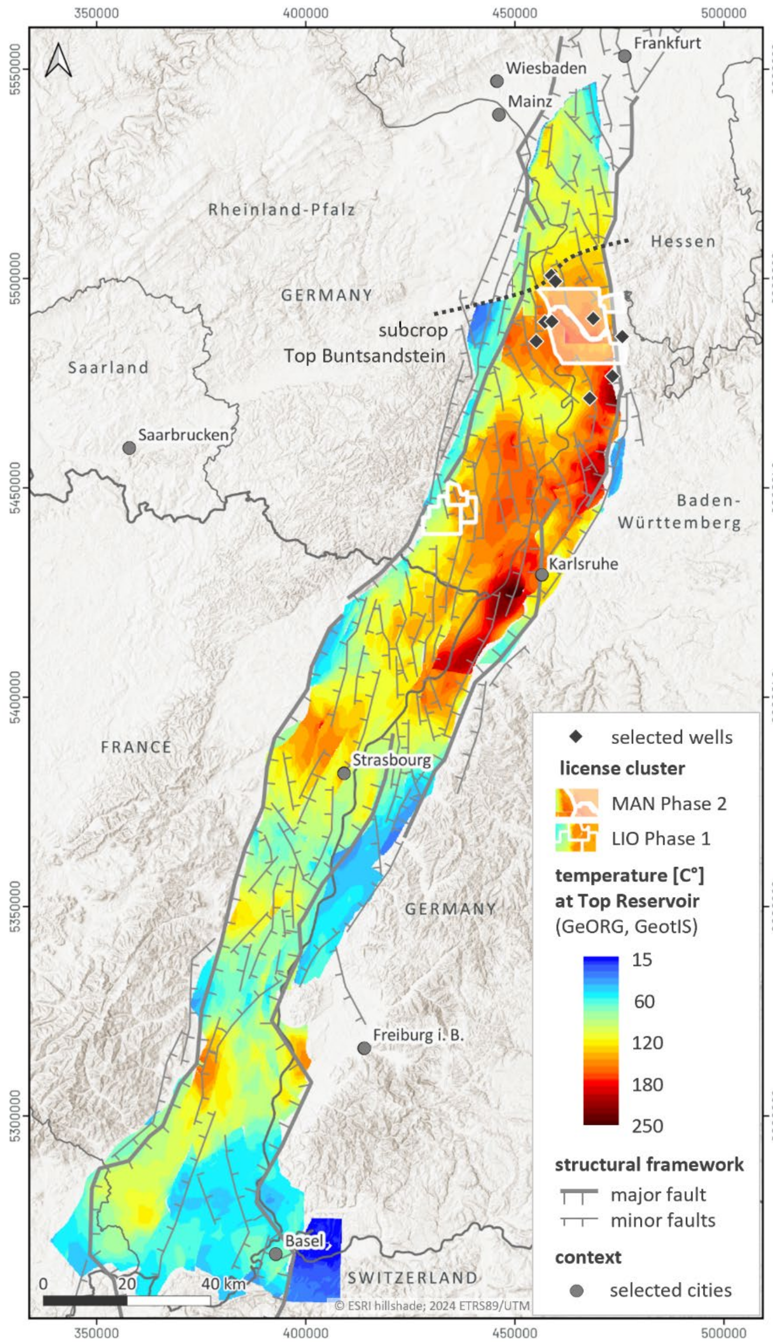

Figure 9: Temperature map of the URG along the Top Buntsandstein (south of dashed line) based on the GeORG model, north of dashed line along Top Rotliegend based on GeotIS model. Diamonds show locations of available key wells.

Mannheim geothermal temperatures

The Permo-Triassic strata and Variscan basement are the focus of the geothermal resource model for the Mannheim licence. The only in-field temperature measurement is from the well Sandhofen 1 on the western edge of the licence area. However, this well TD is 1292 m within the Miocene, which is shallower than the target reservoirs. The nearest offset well encountering Buntsandstein is Brühl GT1, approximately 10 km south of Mannheim licence area, which shows temperatures between 150-160 °C in the Buntsandstein section at 3.0-3.3 km depth. A regional model is available from the geological survey (GeORG model) that is based on kriging of all available well data across the URG. The GeORG model suggests temperatures in the

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order of 170 °C for the Top Buntsandstein at 3.7 km depth in the Mannheim area but does not specifically model the impact of heat convection along faults.

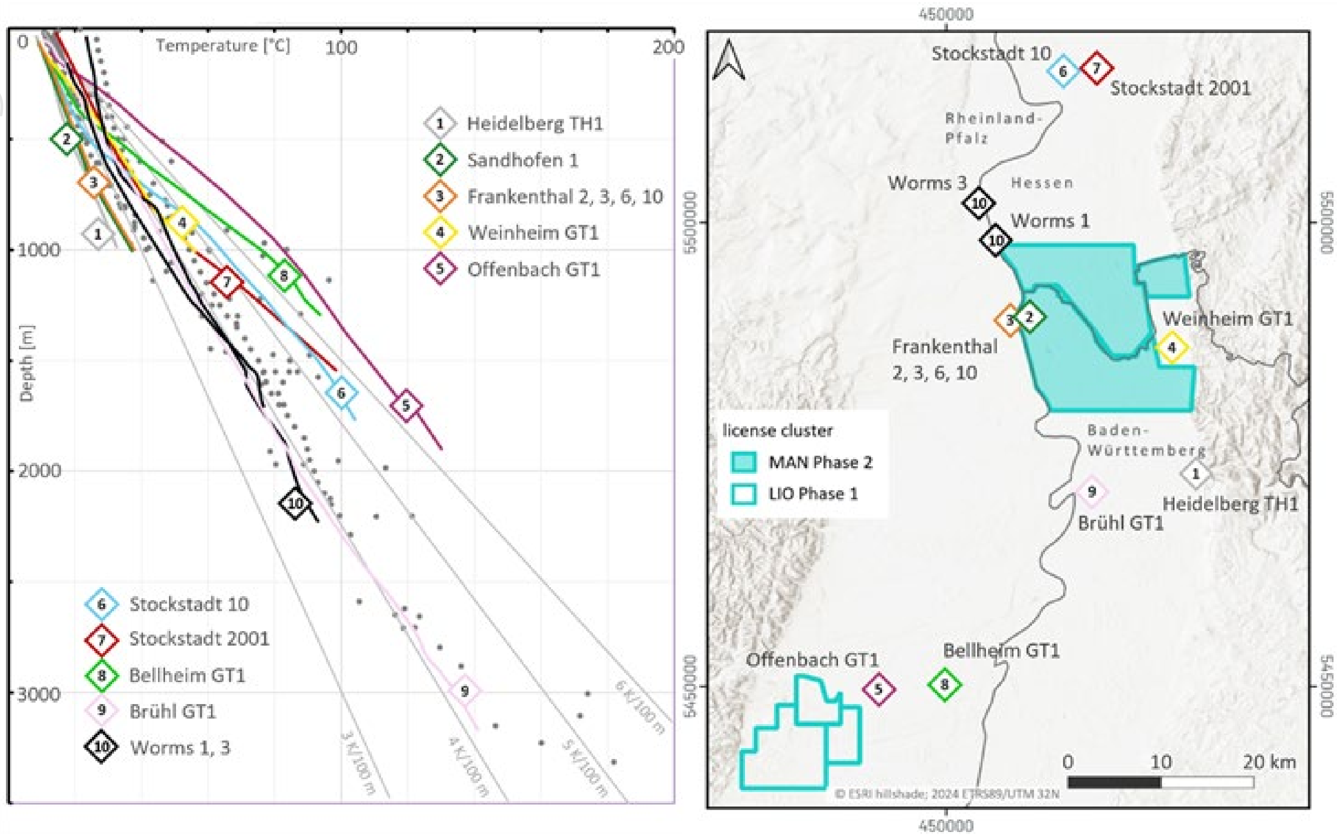

Figure 10: Left: Plotted temperature profiles (lines) and BHT data (points) from surrounding offset wells for Mannheim licence area (temperature data from GeotIS). Right: Locations of wells with temperature profiles relative to the Mannheim licence area

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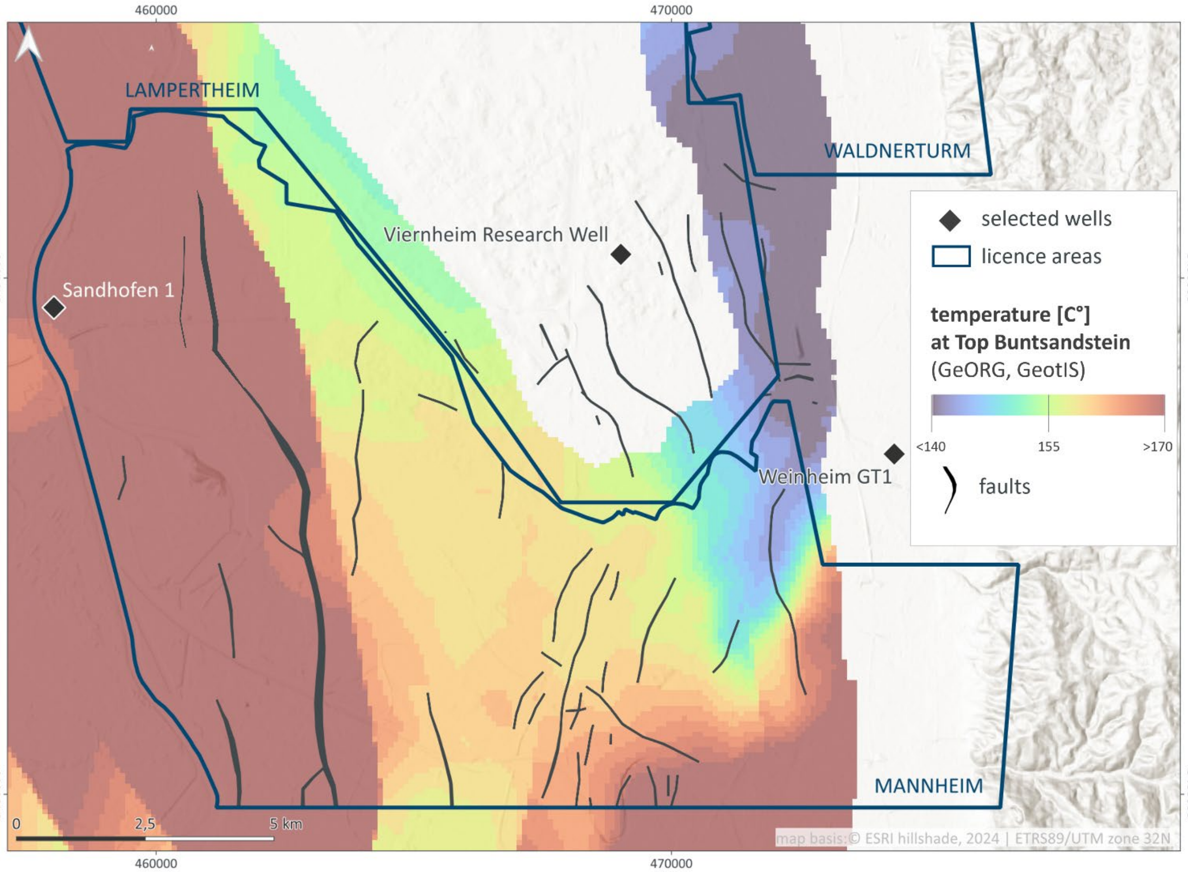

Figure 11: Temperature prognosis at top Buntsandstein in the Mannheim licence by the GeORG model.

Geothermal Resources Estimation

An updated Geothermal Resources Estimation is provided for the Mannheim sector only. While Vulcan Group holds additional licences in the URVBF, geothermal resource estimates for those areas will be provided in future reports. This represents the first formal reporting of Geothermal Resource Estimation for the Vulcan Group within the licence area, since lithium Mineral Resource Estimation has been the primary focus to date, in line with JORC and ASX requirements. Going forward, Vulcan will seek to update both Geothermal and Lithium Resource Estimations across the URVBF.

It is important to note that Geothermal Resources are not Geothermal Reserves, and their economic recoverability under current technology and market conditions is not assured. Geothermal Resources are not a catalogue of all heated areas drilled or sampled, regardless of temperature cut-offs, dimensions, or extent. Rather, they represent a realistic and technically justified inventory of geothermal plays that may be partially or fully developed under assumed technical and economic conditions. Geothermal Resources are classified in accordance with the Geothermal Reporting Code into three confidence levels: Inferred, Indicated, and Measured.

Inferred Geothermal Resources are based on geological, geochemical, and geophysical evidence, with assumptions made about the extent and capacity to deliver geothermal energy. These resources have a lower level of confidence than Indicated Resources, but it is reasonably expected that further exploration could upgrade many Inferred Resources to Indicated status.

Indicated Geothermal Resources are supported by sufficient direct measurements, such as temperature and formation thickness, that allow for the estimation of Recoverable Thermal Energy with a reasonable

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level of confidence. The data are adequate to apply modifying factors for preliminary project planning and economic evaluation.

Measured Geothermal Resources are defined by high-confidence direct measurements and testing of drilled rock and/or fluids, where well deliverability has been demonstrated. The spatial distribution of data confirms continuity in temperature and fluid chemistry. The quality, amount, and distribution of information are sufficient to estimate Recoverable Thermal Energy within close limits, such that any variation would be unlikely to significantly affect economic viability. The geology and heat source are well understood, enabling the application of technical and economic parameters for project evaluation. There are no Measured Geothermal Resources reported for Mannheim at this time.

Geothermal Resources Estimation methodology

The methodology used to estimate the geothermal resources follows guidelines as outlined in the Geothermal Lexicon. The reported values of in-place and recoverable thermal energy are derived from deterministic calculations using mean values for key input parameters (e.g. porosity, rock and fluid densities, specific heat capacities, and reservoir temperature). These inputs represent the best available interpretations from geoscientific data and modelling, but no stochastic or probabilistic uncertainty analysis (e.g. Monte Carlo simulation) was conducted. As such, the reported values should not be interpreted as P50 estimates but rather as indicative central estimates based on current knowledge.

The geothermal resource assessment utilises a comprehensive data set that includes 3D seismic, 2D seismic, geological well data (including temperature measurements, core samples, outcrop data, depositional environment interpretations), and production data from currently producing wells in the Lionheart license area, outside the license area in Mannheim. The volumetric heat in-place is estimated using the following equation:

$$Q = GRV \cdot \left(\rho_r \cdot C_{pr} \cdot (1 - \phi \cdot NTG) + \rho_f \cdot C_{pf} \cdot \phi \cdot NTG\right) \cdot \left(T_{res} - T_{rej}\right) \quad (1)$$

Where Q is the heat in place, GRV is the geothermal reservoir Gross Rock Volume, ρ_r is the particle density for rock, ρ_f is the density of the fluid, C_{pr} is the specific heat capacity for rock, C_{pf} if the specific heat capacity of the fluid, ϕ is the effective porosity adjusted for NTG, the Net To Gross ratio, T_{res} is the average reservoir temperature, and T_{rej} is the rejection temperature.

The rock and fluid input parameters have been defined according to the Bridging Study. Geologically for Mannheim, the geothermal resource bulk rock volume includes the middle and lower Buntsandstein host rock matrix, fault damage zones of the Permo-Triassic sediments (i.e. Muschelkalk, Buntsandstein, and Rotliegend where present), and fault damage zones in the upper 100 meters of the Variscan basement. The North-South striking fault planes that are associated with fault permeability are interpreted from 2D and 3D seismic data and the associated fault damage zones were modeled to uniformly include 200 meters on either side of each fault. Gross rock volumes for the host rock matrix and fault damage zones were extracted from 3D static models. The derivation of NTG and porosity inputs to the resource calculations was supported by a compilation of publicly available and proprietary porosity and permeability data for the Rotliegend, Buntsandstein, and Muschelkalk units (fault damage zones and host rock matrix). For the Buntsandstein matrix reservoir, NTG has been defined using a 5% total porosity cutoff. The rock properties (i.e. density and porosity) were determined from the petrophysical evaluation of well logs in the region of the zones of interest, supplemented with core and plug data where available. The rock specific heat capacities for each formation are from the GeORG report (GeORG, 2013 and Bär, 2012) and are corrected for reservoir temperature following Vosteen and Schellschmidt (2003) as described in Bär (2012).

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Average reservoir temperature estimation is described above. The rejection temperature is assumed to be 65 °C, which is in line with the planned reinjection temperature for the ORC facility design for Phase One. This is defined as the Base Temperature as outlined in the Geothermal Lexicon and can also be referred to as the rejection temperature for the report. This Base temperature is the lowest temperature that could be reached in the reservoir using the currently assumed design parameters for power and heat production. The Cut-off temperature is assumed to be 100 °C based on the minimum temperature for economic reservoir fluid temperature for commercial energy extraction for district heating. This parameter is based on the Phase One design for power and heat production.

Dynamic flow and analytical reservoir simulations assuming a project lifetime of 50 years, along with production data from currently producing wells (i.e. Insheim), have been used to estimate recovery factors. The recovery factor is defined to be the fraction of heat in-place that can be carried by fluid to the production wellhead. Recoverable thermal energy is calculated using the following equation:

$$Q_R = Q \cdot R \tag{2}$$

Where Q_R is the recoverable thermal energy and R is the recovery factor.
The Geothermal Resource Estimation for the Mannheim license area is classified into Indicated and Inferred Geothermal Resources. As described above, the estimation methodology follows the formulas presented above. As described in previous reports, the fault damage zones are modelled with a 200-meter half-width. The GRV for the host rock matrix of the Middle and Lower Buntsandstein accounts for Early Tertiary erosion, particularly in the northwestern portion of the volume. The following parameters were used uniformly across all classifications and license areas in the Mannheim resource estimation:

- Rock density: 2,650 kg/m^3
- Water density: 978 kg/m^3
- Water specific heat capacity: 3,755–3,850 J/kg·K
- Initial reservoir temperature: 170 °C
- Re-injection (or rejection) temperature: 65 °C.

The rock specific heat capacity was originally adapted from Bär (2012) and corrected for reservoir temperature according to Vosteen and Schellschmidt (2003). Fluid properties are assumed to closely resemble those at Insheim GTI2. Fluid density and specific heat capacity were corrected for in-situ reservoir conditions using an average reservoir temperature of 170 °C. A Base temperature of 65 °C was adopted, reflective of proven power plant technology and district heating design. This may vary in future if a different plan design is implemented but is a reasonable assumption for the report.

Reservoir modelling was based on both 2D and newly acquired 3D seismic data. However, no in-field deep wells currently intersect the target reservoir formations, and thus well ties could not be performed. The nearest deep well that intersects the Buntsandstein is Brühl GT1.

Due to the absence of direct well control within the geothermal reservoir interval in the license itself, Geothermal Resource classifications are based on geologic interpretation. The nearby Brühl well has demonstrated productivity in the fault damage zones of the Middle and Lower Buntsandstein, supporting the classification of this interval as Indicated Geothermal Resources. Other geologic units interpreted to be present, but lacking direct evidence of productivity, are classified as Inferred Geothermal Resources. These include the Middle and Lower Buntsandstein host rock matrix and the fault damage zones associated with the Muschelkalk, Upper Buntsandstein, and the top 100 meters of the Variscan basement across the

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Mannheim license area. The average initial reservoir temperature across the entire license area and for both Geothermal Resource classes is 170 °C.

Recovery factors for geothermal energy represent the recovery from both rock and fluids, unlike recovery of lithium which is only from the fluid. The recovery factors describe the fraction of the stored heat which can be economically extracted in terms of economically recoverable energy rather than energy in place. The recovery factor takes into consideration heat losses in the pipe, efficiency factors of the technology utilized to produce the energy, a project lifetime that is assumed to be 50 years for Geothermal Resource Estimation for the report, and the base temperature or in this case, reinjection temperature of 65 °C. Typical recovery factors vary substantially dependent on the rock type, permeability, porosity, recovery process, fracture widths, and flow rates. Recovery factors can range from 3-25% and even higher, depending on the methodology and project type and location, as described in the Geothermal Lexicon.

Recovery factors used in the Geothermal Resource Estimates for the Mannheim licence area was derived using a combination of site-specific data and validated modelling approaches. This has been applied for the Lionheart development, where dynamic simulation incorporating tracer tests were conducted based on the planned well configuration. This provided a robust model of the expected long-term thermal recovery under active production and has been adapted for Mannheim development in the report.

To complement these results, production data from the Insheim geothermal plant were analysed to benchmark fluid and thermal performance under similar geologic and operational conditions. In addition, analytical 1D convective and conductive heat transport models were applied to estimate recovery potential from both fault damage zones and the host rock matrix.

Based on the modelled results, the following geothermal recovery factors were assigned for the Mannheim licence area:

- Fault Damage Zones (across all stratigraphy): 6%
- Matrix Rock (Middle and Lower Buntsandstein only): 3%

The total geothermal recovery factor applied to each classified geothermal resource estimate depends on the volumetric ratio between the FDZ and matrix rock within each unit. This methodology results in differing overall recovery factors across license areas and geothermal resource classifications, which are applied to the estimated thermal energy in place to calculate recoverable thermal energy. These assumptions are considered conservative and reflect current best practice in geothermal resource evaluation.

The summary of Geothermal Resource Estimated Recoverable Thermal Energy is shown below for the Mannheim licence area

Table 3: Summary of Geothermal Resource Estimation for Vulcan Group Mannheim licence area

Licence	Reservoir	Classification	Gross Rock Volume	Average Porosity	Rock Specific Heat Capacity	Initial Reservoir Temperature	Thermal Energy in Place	Recoverable Thermal Energy
			km^3	%	J/kg-K	°C	PJ	PJ
Mannheim Licence Area								
Mannheim	BST	**Indicated**	11	10	882	170	2,848	171
	BST, MUS, BM	**Inferred**	41	8	887	170	10,539	377

Note 1: Geothermal Resources are not Geothermal Reserves and do not have demonstrated economic viability. Note 2: The Recoverable Energy is reported in PetaJoules. Numbers may not add up due to rounding of the resource value percentages. Note 3: Reservoir abbreviations: MUS – Muschelkalk Formation, BST – Buntsandstein Group; BM - Variscan Basement. Note 4: NTG and Phie averages have been weighted to the thickness of the reservoir. Note 5: GRV refers to gross rock volume, also known as the aquifer volume. Note 6: Geothermal Resources are considered to have reasonable prospects for eventual economic extraction with application of modifying factors.

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Lithium Mineral Resource update – Mannheim

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Inferred Mineral Resources have a lower level of confidence associated with their estimation than Indicated Mineral Resources, but it is reasonably expected that with further exploration most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources. Indicated Mineral Resources are sufficiently well defined to allow application of modifying factors to support mineral extraction planning and economic evaluations of the deposit.

The report only provides an update of the Lithium Mineral Resource estimate for the Vulcan Group's Mannheim licence area. This is done in accordance with the JORC code. Mineral Resources have been previously reported for the Mannheim licence area as referenced in the Prospectus CPR 12-2024.

Vulcan Group has collected and analysed the brine chemistry through the progression of the Phase One project since 2019, which includes data from operating wells within the Phase One licence area and from off location wells within the URVBF. This geochemical data has been consistently acquired and verified to determine concentration of the lithium within the brine. Samples have been verified independently and are consistent with the averages used in the mineral resource estimates across the field.

For the Mannheim licence area, the lithium concentration has been determined using data from a Brühl GT1 well sample which was taken during a production test in 2013. The Brühl well is owned and operated by a third party and Vulcan Group does not have access for further sampling. Aliquots of the 2013 sample were provided to Vulcan and were archived, and analysed in 2019, as part of a wider sampling and analysis program at that time. Results were recognized as being influenced by dilution, consistent with the use of freshwater during production testing and with loss of drilling fluids. Vulcan conducted an assessment and interpretation of the results based on reservoir temperature estimates using geothermometers developed for geothermal brines. These calculations resulted in an estimate of original lithium content (i.e. before dilution) of 155 mg/L with an error range of +/-3 mg/L, which was identified as a potentially conservative correction. The calculated lithium value of 153 mg/L was used as the lithium grade in the previous Mineral Resource Estimation for Mannheim. The Vulcan Group has provided clarifying documentation for the sample analysis results that confirms and supports the update of the estimated lithium content to 155 mg/L. The CP has reviewed these interpretations and considers the resource grade to be conservative to realistic at 155 mg/L.

The updated Lithium Mineral Resource estimate for the Mannheim licence is underpinned by a new 3D seismic survey that was acquired in early 2023 and which covers much of the Mannheim licence area. The seismic data has since been processed and interpreted together with the existing 3D Weinheim seismic survey and tied via legacy 2D lines with regional offset wells.

The resultant new subsurface model confirms previous findings about the general structural setup and the general prospectivity of the area but now has a higher certainty than the previous model that was based on sparse 2D seismic data only. As a further consequence of the improved seismic data quality and coverage, additional fault zones were interpreted, and reservoir units were mapped out in more detail and split-out in more sub-units. This resulted in a slight increase in the overall estimated Mineral Resource Estimation for the Mannheim licence area. The increased certainty in fault orientations, extent, and configuration resulted

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in an upgraded classification from Inferred to Indicated Mineral Resources for the fault damage zone associated with the Buntsandstein.

As there is no well data available within the Mannheim license itself, as the references wells are located in other licenses in the URVBF, and no dedicated Field Development Plan exists for Mannheim, no Measured Mineral Resources or Ore Reserves are currently attributed to Mannheim. Estimated Mineral resources are summarised below.

Table 4: Summary of Lithium Mineral Resource Estimation for Vulcan Group Mannheim licence area.

Licence	Reservoir	Classification	GRV	Average NTG	Average Phie	Average Lithium	Elemental Lithium in Place	LCE
			km^3	%	%	mg/L	kt	kt
Mannheim	BST	**Indicated**	11	90	10	155	154	820
	BST, MUS, BM	**Inferred**	41	83	8	155	452	2,405

Note 1: Mineral Resources are not Ore Reserves and do not have demonstrated economic viability. Note 2: The weights are reported in metric tonnes (1,000 kg or 2,204.6 lbs). Numbers may not add up due to rounding of the resource value percentages. Note 3: Reservoir abbreviations: MUS – Muschelkalk Formation, BST – Buntsandstein Group; BM – Variscan Basement. Note 4: To describe the resource in terms of industry standard, a conversion factor of 5.323 is used to convert elemental Li to Li_2CO_3, on LCE. Note 5: NTG and Phie averages have been weighted to the thickness of the reservoir. Note 6: GRV refers to gross rock volume, also known as the aquifer volume. Note 7: Mineral Resources are considered to have reasonable prospects for eventual economic extraction under current and forecast lithium market pricing with application of Vulcan Group's A-DLE processing. Note 8: The values shown are an approximation and with globalised rounding of values in the presented summary table as per JORC guidelines, cannot be multiplied through to achieve the Mineral Resource Estimated volumes shown above.

The previously reported Mineral Resource Estimation for Mannheim was made up of Indicated Resources of 288 kt LCE and Inferred Resources of 1545 kt LCE based on average lithium concentration of 153 mg/L. The upgrading of volumes is associated with a slight revision to the lithium concentration to be consistent with available data, and increased Gross Rock Volume and adjustment to NTG for Inferred based on newly acquired and processed 3D seismic and updated geological modelling.

Competent Person's statement

The information in this document that relates to Geothermal Resources is based on and fairly represents, information that was reviewed, overseen, and compiled by Mike Livingstone, P.Geo., who is a full-time employee of GLJ Ltd. and deemed to be a 'Competent Person'. Mr. Livingstone is a member as a Professional Geoscientist of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), a 'Recognised Professional Organisation' included in a list that is posted on the ASX website from time to time. Mr. Livingstone has sufficient experience which is relevant to the style and type of geothermal play under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the Second Edition (2010) of the 'Australian Code for Reporting Exploration Results, Geothermal Resources and Geothermal Reserves'. Mr. Livingstone has consented in writing to the inclusion in the document of the matters relating to Geothermal Resources based on his information in the form and context in which it appears.

The information in this document that relates to Lithium Mineral Resources is based on and fairly represents, information that was reviewed, overseen, and compiled by Mike Livingstone, P.Geo., who is a full-time employee of GLJ Ltd. and deemed to be a 'Competent Person'. Mr. Livingstone is a member as a Professional Geoscientist of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), a 'Recognised Professional Organisation' included in a list that is posted on the ASX website from time to time. Mr. Livingstone has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code for the reporting of Lithium Mineral Resources. Mr. Livingstone consents to the disclosure of the technical information as it relates to the Lithium Mineral Resources information in this document in the form and context in which it appears.

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The information in this announcement that relates to estimates of Mineral Resources (other than the update to the Mannheim region of the URVBF as contained in this announcement) and Ore Reserves is extracted from the following ASX announcement: "Zero Carbon Lithium™ Project Phase One Bridging Engineering Study" released on 16 November 2023, which is available to view on Vulcan's website at https://v-er.eu. Vulcan confirms, that:

a) in respect of any estimates of Mineral Resources (other than the update to the Mannheim region of the URVBF as contained in this announcement) and Ore Reserves included in this announcement:
   i. it is not aware of any new information or data that materially affects the information included in the original market announcement, and that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed; and
   ii. the form and context in which the Competent Persons' findings are presented in this announcement have not been materially modified from the original market announcement; and

all material assumptions underpinning the production targets (and the forecast financial information derived from such production targets) included in this announcement continue to apply and have not materially changed.

Financing and economic consideration

For the Phase One Lionheart development as a template for future phase development, Vulcan has already received 879m EUR in conditional debt commitments from commercial and development banks, and a Board-approved 500m EUR financing envelope from the EIB. Vulcan has also received approval for 100m EUR in grant funding for the geothermal part of the project and is expecting an indication of approval on further public funding shortly. Vulcan is aiming to finalise its full financing package for Phase One Lionheart, and commence construction, in H2 2025. For the Mannheim development, the project is at a much earlier stage. Vulcan is aiming to fund the project in the next development stage through a combination of heating and geothermal related government grants, as well as project level investment from strategic and infrastructure type investors. Discussions are currently ongoing.

For the Mannheim sector, in April 2022, Vulcan Energie Ressourcen GmbH entered into a heat supply agreement with MVV Grüne Wärme GmbH. The agreement covers an expected heat quantity of 240 GWh/a over a period of 20 years, starting at the end of 2026. If no termination is given with a one-year notice period, the contract will automatically extend for an additional five years. This arrangement enables the exclusive supply of heat to the MVV. The contract is currently being negotiated to reflect a changed market and updated project timeline since this contract was originally signed.

Vulcan is carrying out a high level, internal Scoping Study to develop a similar project to Phase One. It has selected four drill site options, each of which could contain multiple production and re-injection wells. Three sites were considered to host two doublets (four wells), and one site was considered to have the potential of one doublet (two wells). For these well sites and corresponding pipelines, 20 to 40% public grant funding is expected to be available, through the BEW (heating networks) grant scheme operated by the German Federal Government. It should also be noted that the new German Coalition government has committed to further upsizing the funds being made available to this scheme. OPEX costs are expected to be broadly in line with Vulcan's Phase One project. A Lithium Extraction Plant (LEP) could be built to produce lithium chloride concentrate from the wells, in a similar manner to Phase One, and could be transported to Vulcan's CLP, which has been sized to allow for two more trains of production to be built beyond Phase One. Key considerations for the next phase of development include the sizing of the brine and therefore heat production, since production beyond the capacity of local customers' ability to take the heat in lowest demand periods in Summer would necessitate the building of an ORC plant to generate power, but would also enable more lithium production. This will be progressed, subject to a positive outcome from the

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Scoping Study, in a Pre-Feasibility Study as part of a next phase of development, alongside updated heat demand profiles from MVV.

As this is an internally completed Scoping Study, it will not be subject to external Competent Person (CP) review, however, such a review is planned as part of the upcoming Pre-Feasibility Study.

Summary of risks and uncertainties

Herein is a summary of key risks and uncertainties that relate to the estimation of Geothermal Resources and Mineral Resources for Mannheim.

Geological

- Reservoir connectivity may be influenced by currently unidentified features, such as baffles and barriers, high permeability zones and the impact and geometries of fault/fracture zones which can impact brine flow rate estimates. This is mitigated by flexibility in the field development plan.
- Whilst data from wells in the vicinity is available, no deep wells are available so far in the Mannheim license itself. There is a risk that the geologic interpretation for the Mannheim area might be different when data from new wells is gathered. This will be mitigated by allowing for flexibility in the yet to be drafted field development plan.

Technical/ operational

- Drilling issues with downhole collision as multiple wells and side-tracks are drilled from the same pad. This is mitigated with measurement while drilling and specialised tools and control systems to manage the drilling.
- Scaling and corrosion are risks that can affect the operating equipment including wells, piping, and vessels. There is historical knowledge from the operating facilities and mitigation is planned utilizing inhibitor chemicals and maintenance operating plans that manage the risk.
- Transport activities could lead to accidents, which is mitigated with proper training and staffing for driver selection and having an emergency response plan prepared.

Geothermal

- Producing temperature may suffer from depletion within the reservoir and be lower than the minimum operating temperatures for the ORC plant or for district heating.
- Since the district heating network operates with feed-in temperatures of 100 to 120°C, temperature depletion is seen as a very-low risk.

Economic

- Failure of product to meet on-spec lithium requirements can lead to loss in revenues. This is mitigated with communication with offtake holders to manage delivery schedules, and to identify buyers for off-spec product, as well as achieving qualification through Vulcan's existing qualification plants that are operational.
- Change in market conditions that impacts the price negatively or impacts market demand is considered with a low likelihood and mitigated by Vulcan's existing lithium offtake contracts and relationships.
- Change in facility and infrastructure equipment supply that can impact costs and schedule.

Environmental

- There is potential risk associated with induced seismicity caused by injection of brine, which is mitigated with injection control, monitoring systems and passive seismic monitoring.

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- Risk of hazardous gas or fluid release to air or surface. This is being mitigated with Hazard and Operability ("HAZOP") and Layers of Protection Analysis ("LOPA") studies and engineering design considerations, plus maintaining emergency response plans, having spill containment, and ensuring safe operating procedures are in place.

Political/regulatory

- Changes in regulations and permitting may impact Project schedule, design specifications, and cost. This can be mitigated through communication and advocacy with levels of government and regulatory authorities to be aware of upcoming changes. It is also mitigated by the recent designation of the Project as a Strategic Project by the EU.

The Company has identified Project risks and conducted risk assessments for all aspects of the Project. Through this process they have identified mitigations and management processes and identified which activities may still carry residual risks even after mitigation and management. Vulcan Group has plans to monitor and manage risks and uncertainties as the Project progresses through design, construction, commissioning, operations, and decommissioning.

Competent Person's Cautionary statements

The report is based on the material assumptions outlined within and based on the Bridging Engineering Study (BES) report in November 2023 and updated CPR from the Prospectus released in December 2024 for the Phase One Lionheart project, and on newly acquired 3D seismic data for Mannheim. Although GLJ considers all of the material assumptions to be based on reasonable grounds as provided by Vulcan Group, there is no certainty that they will prove to be correct or that the range of outcomes indicated in the report will be achieved.

To achieve the range of outcomes indicated in the report, additional funding will be required. Investors should note that is no certainty that Vulcan Group will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that Vulcan Group could pursue other financing strategies such as a partial sale or joint venture ("JV") of the Project. If it does, this could materially reduce the Company's proportionate ownership of the Project.

Vulcan Group has carried out a Bridging Engineering Study (BES) for Phase One, the results of which were announced to the ASX in November 2023 and updated in the Prospectus CPR 12-2024. This document may include certain information relating to the BES. The BES is based on material assumptions outlined in the BES announcement. The report uses the results of the BES combined with the newly acquired seismic data as a basis to report Geothermal Resources for Mannheim and combined with newly acquired 3D seismic data to update Mineral Resources for Mannheim, estimated in accordance with the Geothermal Code and the JORC Code. While Vulcan considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the BES will be achieved. This document includes information relating to a future phase of development at Mannheim, which is yet to have a defined field development plan and requires further exploration activities. This announcement may also include certain information relating to a potential future phase of development, Vulcan has not yet carried out a definitive feasibility study for this future phase of development.

The Geothermal Resource Estimate classification criteria used for Mannheim are based on the quality of the data available and the CP confidence level in the integration of all the data by Vulcan Group's multi-disciplinary team. This team includes geophysicists, geologists, reservoir engineers with experience from

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the oil and gas industry, hydrogeologists, geothermal specialists, with relevant experience in the Permo-Triassic brine geology, and hydrogeology. Some important points to support the assigned Geothermal Resource Estimate classifications for Mannheim include: 1) a greater level of confidence in the subsurface geological modelling because of Vulcan Group's acquisition of 2D and 3D seismic data, as well as static and dynamic modelling of the Permo-Triassic strata calibrated to available well data, 2) ongoing production data from two producing geothermal wells in the Phase One sector at Insheim (i.e. production since 2012) and Landau (i.e. production since 2007), and 3) the acquisition of new well test data during a recent production well workover to serve as reference for future Mannheim geothermal plants.

The Mineral Resource Estimate classification criteria used for Mannheim are based on the quality of the data available and the CP confidence level in the integration of all the data by Vulcan Group's multi-disciplinary team. The updated volumes reflect a slight revision to the lithium concentration from 153 mg/L to 155mg/L and increased Gross Rock Volume and adjustment to NTG for Inferred based on newly acquired and processed 3D seismic and updated geological modelling.

Vulcan Group has completed extensive brine sampling, geothermal production operations monitoring, and data interpretation that are adequate to support the disclosure of Geothermal Resource Estimates. In the opinion of the CPs, the Mannheim licence for geothermal lithium projects have reasonable prospects for eventual economic extraction based on aquifer geometry, delineation of fault zones using new 3D seismic data, brine volume, brine composition, hydrogeological characterisation, porosity, fluid flow, geothermal assessment, optimisation of field development plan, and historical geothermal operations. The CP Mike Livingstone, P.Geo. takes responsibility for this statement.

Forward-looking statements

Some of the statements appearing in the report may be in the nature of forward-looking statements. Such forward-looking statements include details of the proposed production plant, production targets, estimated Geothermal Resources, and Mineral Resources, expected future market for geothermal power and heat, thermal recovery rates, future demand for lithium products, planned strategies, corporate objectives, lithium recovery rates, projected flow rates, capital and operating costs, permits and approvals, levies, the Project development timeline and exchange rates, among others.

GLJ and Vulcan Group do not undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in the report. To the maximum extent permitted by law, none of Vulcan Group; nor its directors, employees, advisors or agents, nor GLJ, nor any other person, accepts any liability for any loss arising from the use of the information contained in the report.

You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in the report reflect views held only as at the date of the report. The report is not an offer, invitation or recommendation to subscribe for, or purchase securities by Vulcan Group. Nor does the report constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance, and achievements to differ materially from any future results, performance, or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and

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demand for production inputs, the speculative nature of exploration and Project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which Vulcan Group operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on Vulcan Group and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company's business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company's control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events, or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements, or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company.
Statements regarding plans with respect to the Company's geothermal and mineral properties may contain forward-looking statements in relation to future matters that can only be made where the Company has a reasonable basis for making those statements. The report has been prepared based on the Bridging Study which is in compliance with the JORC Code 2012 Edition, Geothermal Code and the current ASX listing rules.

Investment risks

An investment in the Company is subject to both known and unknown risks, some of which are beyond the control of Vulcan Group, see also the risks contained in the Bridging Study (announcement on "Positive Zero Carbon Lithium Project Bridging Study Results") and the Bridging Study Presentation (announcement on "Bridging Engineering Study Results - Presentation") released to the ASX on 16 November 2023 ("**Previous Disclosures**"), risks contained in the "Equity Raise Presentation" and "Information Memorandum" released to the ASX on 11 December 2024, and risks contained in the Prospectus dated on or around 17 December 2024. These factors may include, but are not limited to, changes in commodity and renewable energy prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs lithium, the speculative nature of exploration and Project development (including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves), political and social risks, changes.

Vulcan Group does not guarantee any particular rate of return or its performance, nor does it guarantee any particular tax treatment. Prospective investors should have regard to the risks in the Previous Disclosures, particularly the May 2023 Prospectus, which have not materially changed, when making their investment decision, and should make their own enquires and investigations regarding all information in this document, including, but not limited to, the assumptions, uncertainties and contingencies that may affect Vulcan Group 's future operations, and the impact that different future outcomes may have on Vulcan Group. There is no guarantee that any investment in the Company will make a return on the capital invested, that dividends will be paid on any fully paid ordinary shares in the Company, or that there will be an increase in the value of the Company in the future. Accordingly, an investment in Vulcan Group and the Company's shares should be considered highly speculative, and potential investors should consult their professional advisers before deciding whether to invest in Vulcan Group.

Financial data

All monetary values expressed as "$" or "A$" in this document are in Australian dollars, unless stated otherwise. All monetary values expressed as EUR or € in this document are in Euros, unless stated

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otherwise. All monetary values expressed as "US$" in this document are in US dollars, unless stated otherwise.

In addition, readers should be aware that financial data in this document includes "non-IFRS financial information" under ASIC Regulatory Guide 230 'Disclosing non-IFRS financial information' published by ASIC and also 'non-GAAP financial measures' within the meaning of Regulation G under the U.S. Securities Exchange Act of 1934.

The non-IFRS financial measures do not have standardised meanings prescribed by Australian Accounting Standards and, therefore, may not be comparable to similarly titled measures presented by other entities, nor should they be construed as an alternative to other financial measures determined in accordance with Australian Accounting Standards. Although Vulcan Group believes the non-IFRS financial information (and non-IFRS financial measures) provide useful information to readers of this document, readers are cautioned not to place any undue reliance on any non-IFRS financial information (or non-IFRS financial measures).

Similarly, non-GAAP financial measures do not have a standardised meaning prescribed by Australian Accounting Standards or International Financial Reporting Standards and therefore may not be comparable to similarly titled measures presented by other entities, nor should they be construed as an alternative to other financial measures determined in accordance with Australian Accounting Standards or International Financial Reporting Standards. Although Vulcan Group believes that these non-GAAP financial measures provide useful information to readers of this document, readers are cautioned not to place undue reliance on any such measures.

Industry data

Certain market and industry data used in connection with or referenced in this document may have been obtained from public filings, research, surveys or studies made or conducted by third parties, including as published in industry-specific or general publications. Neither Vulcan Group nor its advisers, nor their respective representatives, have independently verified any such market or industry data. To the maximum extent permitted by law, each of these persons expressly disclaims any responsibility or liability in connection with such data.

Effect of rounding

A number of figures, amounts, percentages, estimates, calculations of value and fractions in this document are subject to the effect of rounding. Accordingly, the actual calculation of these figures may differ from the figures set out in this document.

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About Vulcan Energy

Vulcan Energy (ASX: VUL, FSE: VUL) is building the world's first carbon neutral, integrated lithium and renewable energy business to decarbonise battery production. Vulcan's Lionheart Project, located in the Upper Rhine Valley Brine Field bordering Germany and France, is the largest lithium resource in Europe[4] and a tier-one lithium project globally. Harnessing natural heat to produce lithium from sub-surface brines and to power conversion to battery grade material and using its in-house industry-leading technology VULSORB®, Vulcan is building a local, low-cost source of sustainable lithium for European electric vehicle batteries. For more information, please go to https://v-er.eu/

<ENDS>

For and on behalf of the Board

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Please contact Vulcan's Legal Counsel Germany, Dr Meinhard Grodde, for matters relating to the Frankfurt Stock Exchange listing on mgrodde@v-er.eu.

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[4] On a lithium carbonate equivalent (LCE) basis, according to public information, as estimated and reported in accordance with the JORC Code 2012. See Appendix 4 of Vulcan's Equity Raise Presentation dated 11 December 2024 for comparison information.

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1. ANNEXURE 1 - GEOTHERMAL CODE TABLE – MANNHEIM

Geothermal Assessment and Reporting Criteria Table

Pre-Drilling Exploration Technical Data

Parameter	Consideration Description	Commentary

Geological Maps and interpretation	• Nature and quality of available mapping (e.g. scale, completeness, age, authors, 2D, 3D etc.) including basis for interpretation and any implications for likely Geothermal Resource types
	• Description of any relevant Geothermal Plays previously recorded in the vicinity or same geological province
		• The Vulcan Group Mannheim licence is part of a future Phase of development within the Upper Rhine Valley Brine Field (URVBF) licences held by the Vulcan Group.
		• The Insheim and Landau licence areas to the south of the Mannheim licence have existing operating geothermal wells. The Geothermal Play in the URVBF, centred around the Lionheart area, is well understood based on over a decade of historical geothermal brine production.
		• The addition and reinterpretation of new and existing 2D and 3D seismic data increased the Geothermal Resources CP's confidence level in the subsurface 3D geological models that supported Geothermal Resource Estimation.
		• Using the seismic profiles, subsurface stratigraphic horizons were correlated throughout the Mannheim licence. The marker horizons were validated against formation tops and / or wireline logs from nearby wells outside of the licence area (e.g. Brühl Gt1 and Eppstein 1).
		• The fault/fracture zones were distinguished in the seismic profiles. The vertical displacement of the fault zones on the seismic profiles enabled definition of the activity level of the fault zone, with many interpreted to be active. The fault zones were picked only where they could be positively identified in the seismic lines and the faults were correlated in consideration of their offset, dip angle and depth.
		• A subsurface 3D geological model was constructed by Vulcan Group, to outline the Permo-Triassic aquifers and fault domains underlying the URVBF. Below is a description of the seismic surveys that were used to construct these models:
		  ○ Migrated and unmigrated legacy 2D seismic data sets cross and extend outside of the Mannheim licence.
		  ○ The Vulcan Group produced the Mannheim 3D survey in 2023. The survey extends over the Mannheim, Lampertheim and Waldnerturm licences and was processed together with the legacy 2012 Weinheim 3D survey and used for detailed stratigraphic mapping.

Parameter	Consideration Description	Commentary
		○ The GeORG Project provided an extensive interpreted 2D seismic grid across the URG which complemented interpretation. • The orientation of the Permo-Triassic strata in Mannheim is generally flat-lying and increasingly eroded towards the Northern part of the area. High-angle faults have created a complex horst and graben structural environment. However, the Permo-Triassic strata are generally laterally continuous, despite being locally offset by rift-related faulting. It is noted that the Permo-Triassic strata have been mapped for approximately 250 km along the north-northeast strike length of the entire URVBF.
Data Location and spacing	• Adequacy of base maps • Methodology and quality of sample location (e.g. GPS etc.) • Datum and projection used along with any relevant parameters (locations should be reported using recognised co-ordinate systems and not local grids wherever possible) • Spacing of available data points • Extent of data interpolation/extrapolation including explanation of techniques applied	• The grid system used is UTM WGS84 zone 32N. • The surface Digital Elevation Model used in the three-dimensional model was acquired from JPL's Shuttle Radar Topography Mission (SRTM) dataset; the 1 arc-second gridded topography product provides a nominal 30 m ground coverage. • The subsurface lithological information is from existing wells within the Insheim and Landau licences, and from geothermal wells within the URVBF but outside of Vulcan's license areas including at Vendenheim and Brühl. These well locations are supplemented with extensive 2D seismic data and 3D seismic data. • Vulcan Group has operating geothermal wells within the Insheim and Landau licence areas that form the core of the URVBF. Existing production/re-injection wells are located within 10m of each other on the surface at each site, and within 2km of each other at the target depth. The Landau and Insheim production wells, as well as Appenhofen well, are approximately 5km apart on the surface. For Mannheim, there are no in-field wells available that intersect the intervals of interest in the Mesozoic.
Evidence for past or present water/rock interaction	• Location and description of observed hydrothermal alteration and mineralisation	• Intense hydrothermal alteration was observed in Rotliegend (Permian) rhyolitic tuffs encountered by the well Trebur GT1 in the Northern URG. • Fracture mineralization due to hydrothermal fluid circulation is observed and expected (e.g. Soultz EPS1, Römerberg oil field, Waldhambach, Cleebourg outcrop).
Hydrology	• Nature and quality of near-surface hydrological data and the basis for interpretation including indicators of deeper hydrology	• Several hot and mineralized springs are known along the boundary fault system of the Upper Rhine Graben (URG). These include natural springs, such as those in Baden-Baden (with temperatures reaching up to 69 °C), as well as artificially tapped fluids from deep wellbores, like at the Weinheim/Miramar spa, where aquifer temperatures reach 65 °C.

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Parameter	Consideration Description	Commentary
		• Most of these hot springs originate from relatively shallow, meteoric water that infiltrates to moderate depths. Due to their shorter residence times in the basement rocks of the graben shoulders, these waters typically have lower concentrations of lithium and other dissolved solutes. For example, the thermal waters in Baden-Baden have a total dissolved solids (TDS) concentration of about 3 g/l, in contrast to the much more concentrated deep brines found within the URG, which have TDS values ranging from 100 to 130 g/l. • In a few locations along the boundary fault, deep saline brines also rise to the surface, where they become diluted by near-surface groundwater. This mixing can lead to salinities that render the groundwater unsuitable for drinking water production. A key example is near Trebur, in the northern URG, where the upper groundwater aquifer contains mixed water with a TDS of 6.7 g/l, equivalent to the salinity of the Baltic Sea. • At Weinheim, rising brines with a TDS of approximately 110 g/l infiltrate laterally into high-permeability Miocene sand lenses. Clay-rich layers above these sands prevent the fluid from reaching the shallow groundwater, helping to isolate the mineralized brine. • Another notable case is the Odenwaldquelle spring, located south of Heppenheim. Here, mineralized water with a TDS of about 1.5 g/l is extracted from protected wells 80–200 meters deep in Oligocene marine sands. Originally, brine from the boundary fault spread laterally into these sands, but it is now heavily diluted by meteoric water from the overlying shallow aquifer, which consists of granite wash. Thanks to this dilution, the water from the Odenwaldquelle is suitable for sale as mineralized drinking water. • In general, near-surface groundwater in the URG is not affected by natural salinity from deep brines, but rather by anthropogenic pollutants, such as nitrate from fertilizers. Therefore, groundwater production often relies on deeper aquifers. • With few exceptions (such as at major neo-tectonically active faults), the calcium-bicarbonate-dominated shallow aquifers (TDS: 0.3 to 1.0 g/l) are well separated from the deep NaCl-dominated brines (TDS: 100 to 130 g/l) by over 2,000 meters of sediment, including clay-rich layers from the Tertiary and Upper Triassic.

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Parameter	Consideration Description	Commentary
		• The deep brines in question, which are incorporated into this resource estimation, are completely separated from groundwaters by an impermeable clay layer.
Sampling techniques	• Nature and appropriateness of geological, geochemical or fluid sampling procedures including collection, steps taken to ensure samples are representative, sample identification and preservation	• The Vulcan Group has access to existing operating deep geothermal wells with proven drilling information, fluid sampling, and sample collection. • Within the Lionheart area, geothermal wells access hot brine from the Permo-Carboniferous Rotliegend Group (where present), Lower Triassic Buntsandstein Group, and the Middle Triassic Muschelkalk Group, (collectively, Permo-Triassic) sandstone and carbonate aquifers/reservoirs overlying the granitic basement, as well as the upper 100 m of the basement itself. • Vulcan Group regularly collects brine samples from the open hole reservoir section from Landau and Insheim geothermal wells which can be sampled at the wellhead, (the hot side of the geothermal production circuit) or downstream of the heat exchanger (the cold side of the geothermal production circuit) prior to reinjection of the brine back down into the aquifer. Brine samples taken at or near the wellhead require a cooling device (e.g., flow-through cooler operating with cold freshwater). No special equipment is required on the cold side of the production circuit.
Analytical Techniques	• Identification and experience of analytical laboratory • Nature, quality and appropriateness of laboratory techniques and related quality control procedures (e.g. in determination of petrographic, geochemical, fluid or gas analysis, physical rock properties, isotope, age data etc.) • The level of analytical uncertainty and whether acceptable levels of accuracy and precision are considered to have been established	• Rock densities from measurements and calculation based on mineral content (pure density, without pore volume). • Reservoir-temperature-corrected rock specific heat capacities from Bär, 2012 (calculated from lambda at 20°C); corrected to expected reservoir temperature according to formula from Vosteen & Schellschmidt (2003, in Bär 2012). • Water properties at reservoir temperature from PETher (2017) project. • Where available, data from existing producing wells for temperature and geochemical analysis. • The analytical uncertainty for the data used for the Geothermal Resource Estimation is considered low as standard laboratory techniques were used.
Temperature measurement and geothermometry	• Nature and quality of available surface temperature data (e.g. ambient, 1m probe, aerial infra-red scans, existing shallow wells etc.)	• Temperature measurements have been performed in approximately 1000 wells throughout the URG so far. Most measurements are collected in the Geophysics Information System (Fachinformationssystem Geophysik: FIS Geophysik) of the Leibniz-Institute for Applied Geophysics (LIAG) (Kühne 2006). Different measuring

Parameter	Consideration Description	Commentary
	• Nature, quality and appropriateness of techniques used to determine temperatures from fluid or rock chemical geothermometry, including source of fluids, level of uncertainty in measurement and key assumptions made • Nature of thermal features used to determine temperature and their relation to chemical sampling	techniques were applied to generate these data. This results in significant quality variations. The most reliable results are provided by undisturbed temperature logs, where the thermal field reached equilibrium after drilling. However, disturbed temperature logs or bottom-hole temperature measurements are also common, and temperature data were acquired during production tests and hydrochemical analyses. • Typically, temperature measurements in boreholes are carried out immediately after drilling operations stopped and are hence affected by a cooling effect from the mud circulation. This effect was corrected within an uncertainty margin of ±8 K.
Temperature Gradient	• Nature, quality and appropriateness of calculations used to determine temperature gradient including the nature and source of surface temperature data and the associated level of uncertainty • Depth intervals of determined gradients	• Subsurface temperatures show a positive heat anomaly in the entire URG. The median geothermal gradient in the central to northern part of the URG is 48 K/km modelled at 3,000 m depth and 41 K/km at 5,000 m depth. This general trend of increased gradients in the shallower part of the basin followed by lower gradients at greater depth is explained by a thermal blanketing effect due to the clay rich sediments of the Keuper, Jurassic and/or Tertiary. They disrupt and curtail the high convective heat transport in the Mesozoic and Palaeozoic units below. This effect can be observed in temperature profiles of almost all geothermal wells in the URG. • Local geological processes such as erosion, uplift or paleoclimate are not relevant in the region of the URG.

Thermal conductivity (K)	• Whether determined analytically, modelled or assigned
	• Where determined analytically, identification and experience of analytical laboratory and nature, quality and appropriateness of analyses used (e.g. number and frequency of samples, technique used to determine K, type of samples (e.g. core etc.), sample preparation (e.g. sample dimension, polish etc.) and analytical specifications (e.g. orientation of samples, wet or dry analysis, temperature at which K was determined etc.)
		• Analytical values of thermal conductivity of URG rocks are derived from the GeORG report (2013) and Bär (2012).
		  • Thermal conductivity has not been utilized as an input value for the current resource estimation for Mannheim.
		  • Thermal conductivity will be an important factor in future hydrothermal simulation modelling.

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Parameter	Consideration Description	Commentary
	• Where modelled, the nature, quality and appropriateness of the model used, the source and quality of input parameters, corrections applied and/or key assumptions made • Where assigned, the basis for interpretation including key assumptions and data sources • The estimated level of uncertainty	
Heat Flow	• Whether based upon measured or assumed parameters • Where based on measured data, the nature and quality of the measurements (temperature and thermal conductivity), including characteristics of any thermal features from which they were derived, frequency and distribution of the samples, method/s used for depth matching temperature and thermal conductivity data, assumptions made and any evidence of temporal change • Where reliant upon assumed or assigned data, then the basis for interpretation, including key assumptions and data sources • In all cases nature, quality and appropriateness of the model/s used (e.g.1D, 2D or 3D modelling), corrections applied, and key assumptions made regarding physical conditions, vertical heat flow, topographic models etc. • The estimated uncertainty including key assumptions made	• The temperature in the subsurface of the URG is controlled by conductive and convective heat transport. Fluid flow and convective heat transport occur predominantly along active fault zones that are associated with high fracture permeability. Hence upwelling of deep groundwater is the main reason for localised thermal anomalies. • Three main factors were identified that can significantly influence the subsurface temperature field: ○ The relatively low thermal conductivity of clay-rich sediments in the Tertiary and/or Keuper (regional seals) (Zhang 1993; Wangen 1995; Freymark et al. 2017) ○ Regionally different heat flows from the pre-Tertiary subsurface, especially the radiogenic heat production rate of the crystalline basement (Freymark et al. 2017) ○ Convective heat transport via fault zones (e.g. Koltzer et al. 2019; Bächler et al. 2003; Guillou-Frottier et al. 2013, 2020) • Due to the complexity of interacting factors influencing the temperature field, heat flow is expected to be very heterogeneous. The uncertainty in heat flow on a small scale is expected to be substantial and will be estimated as soon as sufficient in-field temperature measurements are available.

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Parameter	Consideration Description	Commentary
Heat generation determination	• Basis for the identification of significant sources of subsurface heat generation • Nature, quality and appropriateness of model used to calculate heat generation capacity and the level of uncertainty in the results	• Radiogenic heat generation – main contributor, temperature anomalies due to thermal blanketing, radiogenic heat; heat from mantle; radiogenic heat depending on basement mineralogy and thermal blanketing. • Heat generation processes have been discussed and modelled in Freymark et al. (2017). Vulcan did not perform a separate modelling of heat generation processes and currently refers to the published model by Freymark et al. (2017).
Geophysical techniques	• Nature, quality and appropriateness of any geophysical techniques used to describe or define geothermal anomalies including uncertainty and key assumptions made before, during and after interpretation, modelling, calibration of rock properties especially with drill hole data, contractors used and available survey parameters (e.g. resistivity, seismic, gravity, magnetic, MT) for both regional and local surveys	• The 3D geological model was constructed by the Vulcan Group using its recent Mannheim/Weinheim 3D PSDM seismic data, in a geophysical and structural sense, and tied to nearby wells outside of the Mannheim licence area via legacy 2D seismic lines. • Key stratigraphic markers such as top and base reservoir were correlated via its unique seismic character and geometries. Isochrone/isochore mapping was used to quality control the interpretations and to avoid unrealistic models. Fault zones were picked only where they could be positively identified in the seismic data and were correlated in consideration of their offset, dip angle and depth. Where possible, basic seismic attributes such as coherency and local structural azimuth or dip were used to validate the interpretations. • Tertiary marker horizons were validated against wireline logs and check shot data from the acquired Eppstein 1 well data drilled adjacent to the Mannheim area. • The 2022/2023 new 3D seismic data broadly confirmed the previous in-house interpretation based on existing 2D seismic data and further enhanced the confidence in the local stratigraphic record.
Data integrity and verification	• Measures taken to ensure data have not been corrupted between initial collection and use in models/calculations • Data validation process • The verification of significant results by application of alternative techniques and/or independent personnel	• A review of compiled data was conducted by the Geothermal Resource CP who, to the best of their knowledge, can confirm the data was generated with proper procedures, has been accurately transcribed from the original source and is suitable for use in the Geothermal Resource Estimations. • 3D geological models were prepared for the Vulcan Group licences, with the use of extensive 2D seismic data and 3D data. These data were interpreted by Vulcan Group and represented in modelling software Petrel. Interpreted features included picks for the upper and lower surfaces of the Muschelkalk Formation, Buntsandstein Group and Rotliegend Group where present), plus fault locations. Model representations were checked by the Geothermal Resources CP (GLJ). In the opinion

Parameter	Consideration Description	Commentary
		of the Geothermal Resources CP, these geological representations, and the seismic data used to develop them are reasonable and appropriate for Resource Estimation. • Numerous hydrodynamic property studies and data were compiled from throughout the URVBF by Vulcan Group, to support the selection of appropriate values for Effective Porosity (Phie) and Net to Gross ratio (NTG) to use in Geothermal Resource Estimation. In the opinion of the CP, these studies, and the Geothermal Resource Estimation parameters that were derived them, are reasonable and appropriate.

And Tenement, Environment and Infrastructure Data

Parameter	Consideration Description	Commentary
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 licence to operate in the area.	• The Vulcan group retains within the URVBF 16 licence areas on the German side (14 exploration licence areas and two production licence areas). • Insheim, Landau-Sued and Rift Nord licences are referred to as Vulcan Group's Phase One Lionheart Project area. The Mannheim license is referred to as "Mannheim" or the "Mannheim sector". • The exploration license for geothermal, brine and lithium in the license field Mannheim is held by the company Vulcan Energy Resources Europe Pty Ltd. It was first issued by the Mining Authority of Baden-Württemberg on June 18, 2019 (Ref. No.: 97-4715-1022.11-1682/1/27). By letter dated September 27, 2021 (Ref. No.: 97-4715-1022.11-1682/6), the Mining Authority extended the exploration license in accordance with Section 7 (1) of the German Federal Mining Act (BBergG). By letter dated June 6, 2024 (Ref. No.: RPF97-4715-63/6/25), the license was extended once again upon application dated February 29, 2024. The exploration license is limited in duration until June 30, 2027. • An Exploration Licence is issued pursuant to the German Federal Mining Act (Bundesberggesetz: BBergG) which defines freely mineable Mineral Resources as property of the state that is administered by state authorities. Accordingly, state permits are required for exploration and extraction. Vulcan Group requires both an Exploration Licence and an Extraction Licence or Mining Proprietorship to ultimately produce from its holdings.

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Parameter	Consideration Description	Commentary
		• Any future geothermal brine production from any site would also require granting of a Production Licence plus completion of an operating plan and planning approval procedure that comply with the Act on the Assessment of Environmental Impacts. • An Exploration Licence is granted for a maximum of five years and can be extended by a further three years under certain conditions. If exploration has not commenced within one year of the licence being granted, the licence may be revoked. The same result may apply if exploration is interrupted for more than one year. The Exploration Licence is merely a legal title for the exploration of Mineral Resources in the granted area and is not sufficient to carry out technical programs such as seismic surveys or exploration work in the form of drilling. For such purposes, an operating plan (Betriebsplan) must be approved by the responsible state authority. • An Exploration Licence shall accord the holder the exclusive right to: Explore for the geothermal resources specified in the licence; to extract and acquire ownership in the resources that must be stripped or released during planned explorations; to erect and operate facilities that are required for exploring the resources and for carrying out related activities. • The Geothermal Resource CP was advised by Vulcan Group that all Exploration and Production Licences covering its Mannheim area are in good standing at the Effective Date of the current Geothermal Resource Estimate. ○ The Mannheim licence in the northeast of the licence group is 14,449 hectares and is centred at UTM 465874 m Easting, 5484762 m Northing, in the WGS84 UTM Zone 32N projection. • The CP notes that there is always some risk or uncertainty that government regulations and policies could change between the issuance and termination dates of Exploration Licences, Production Licences and related permits issued by state authorities.
Terrain, geotechnical issues and access	• Identification of significant geotechnical, geohazard or access issues which could affect future drilling locations or sterilise sectors	• The Vulcan Group does not envisage any significant geohazard, geotechnical or access issues, which could affect future drilling locations or sterilise sectors.

Parameter	Consideration Description	Commentary
Environmental Issues	• Identification of significant environmental issues (for example, water requirements, induced seismicity) which could affect future drilling locations or sterilise sectors	• Any future geothermal and/or lithium brine production would require an operating plan and planning approval procedure that complies with the Act on the Assessment of Environmental Impacts. • In the URVBF, induced seismicity is a potential risk which can be caused by injection of brine. The CP notes that mitigation of such risk may be addressed by the following activities, among others: ○ Performing regular seismic monitoring, as is currently practiced by Vulcan Group at its Insheim and Landau wells and plant ○ Reducing production flow rates temporarily if seismicity occurs during the operations ○ For the Mannheim AOI, seismic hazard assessments and reports will be performed by external consultants as part of the further project development.
Land use issues	• Identification of significant land use conflicts which could affect future drilling locations or sterilise sectors	• The Mannheim licence entails the city of Mannheim which is one of Germany's largest cities with a population of ~300.000. The most heavily built-up areas are located in the western part of the licence area directly adjacent to the river Rhine. Eastwards of the Autobahn A6, land use is dominated by small towns and agricultural areas. Although the land pressure in the URG is very high, there are no significant land use conflicts. Possible drilling locations are selected by mutual agreement with the stakeholders and the broad political support for the project at municipal, district and state level helps to ensure that the project is implemented with as little conflict as possible. The broad political support for Vulcan's Lionheart project at municipal, district and state level also helps to serves as template for future phases including Mannheim and ensure that projects are implemented with as little conflict as possible.
Infrastructure	• Proximity to and quality of relevant infrastructure and water supply, in particular transmission lines when the project is being considered for electricity generation	• Excellent infrastructure for the construction of drilling sites and facilities, including transmission lines and water supply, exist in the area of interest.

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Parameter	Consideration Description	Commentary
Exploration by other parties	• Acknowledgment and appraisal of exploration by other parties to the extent the data are available	• The URG is under active exploration for geothermal development by multiple companies. Geothermal production is currently occurring at several sites other than those in which Vulcan Group is involved. As a result, important geological and brine data developed in support of non-Vulcan Group initiatives and evaluations is present. This has been accessed to the maximum degree possible by Vulcan Group for application in its own exploration and development programs. • Historical brine geochemical analytical results include samples taken from Landau (in 2011, 2013: Sanjuan et al. 2016), Insheim (in 2013: Sanjuan et al. 2016), Soultz (in 2013: Sanjuan et al. 2016), Brühl (in 2013; Kraml unpublished), Bruchsal (in 2012: Sanjuan et al. 2016), and Vendenheim (in 2018: Sanjuan et al. 2020) geothermal sites. • The samples are believed to represent a uniform brine composition since they originate in the crystalline basement and rise convectively up to the top-seal formed by Keuper and/or Lower Tertiary clay layers. • The fluids are tapped directly in the basement (Landau, Soultz, Vendenheim) or via a fault damage zone in one of the Paleozoic to Mesozoic overlying formations. In the case of Brühl GT1 and Bruchsal GB2, the well perforations extend over the Buntsandstein Group from which the brine intake occurs. The samples were taken at the surface near the well head during regular operation (Bruchsal GB2) and during a production well test (Brühl GT1). • The historical geochemical information was used as background information and was also used as part of the Geothermal Resource Estimation process. • GeotIS and GeORG data were evaluated and used to support construction of the 3D geological model used in Vulcan Group's current Geothermal Resource Estimates. GeotIS and GeORG are digital geological atlases with emphasis on geothermal energy. They provide access to extensive compilations of well data, seismic profiles, information, and interpreted schematic cross sections from the evaluation of 2D seismic data with emphasis on deep stratigraphy and aquifers in Germany. The raw data, such as seismic data, are not available, as they are owned by the respective energy companies, but data profiles have been collated and interpreted for inclusion in the representative geo-dataset information systems.

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Parameter	Consideration Description	Commentary
		• The Lionheart and Mannheim 3D modelling was improved beyond the constraints of GeoORG subsurface information through Vulcan Group's 2020 (Lionheart) and 2022 (Mannheim) acquisition of 2D seismic profile lines for these areas. The 2D seismic data acquisition was then extended to Vulcan Group's other licence areas across the URG. These data were acquired by Vulcan Group specifically for the purpose of improving the associated 3D geological model. The seismic information and subsequent 3D geological models were re-interpreted by Vulcan Group as part of Vulcan Group's ongoing exploration work. • Any modelling or data artifacts within the model space were addressed by Vulcan Group and/or an independent consultant (GLJ) with involvement of the CP, in advance of the current Geothermal Resource modelling.

Subsurface and Well Discharge Data

Parameter	Consideration Description	Commentary
Drilling Data	• Type of drilling used (e.g. core, rotary etc.) including basic spud/collar details (e.g. date drilled, depth etc.) • Availability of drilling records and data from rig instrumentation (e.g. ROP, WOB, circulation losses, mud logging, drilling breaks, well kicks etc.) • Nature and quality of directional survey data • Type of completion used and related details (e.g. depth to casing etc.)	• Whilst Vulcan has existing operating wells and is drilling new wells within its Lionheart sector, the Vulcan Group has yet to conduct any new drilling or coring programs within the Mannheim sector. However, the current Geothermal Resource Estimation was able to utilise subsurface lithological information from existing production/re-injection wells that Vulcan Group owns or has agreements to access, as well as historical wells within and adjacent to its license areas and near to the Mannheim license. • There are numerous historical geothermal wells or petroleum wells drilled by other companies that extend deep enough to penetrate Permo-Triassic strata within the URGBF licence area. • Location coordinates plus orientation information for wells used to assess the geochemical concentration of brine within Permo-Triassic aquifers covered by Vulcan Group's URGBF holdings are tabulated below. • Coordinate system: DHDN/3-degree Gauss zone 3, EPSG:31463.

Parameter	Consideration Description	Commentary

Hole Name	Collar Easting (m)	Collar Northing (m)	Collar Elevation (m)	Azimuth (deg)	Total Depth (TVDSSm)	Top Perforation (TVDSSm)	Base Perforation (TVDSSm)
Landau Gt-La1	3436152	5450302	149	270	-2896	-2324	-2896
Landau Gt-La2	3436149	5450308	149	90	-3107	-2135	-2641
						-2726	-2922
Insheim GTI1	3438343	5446624	139.78	146	-3410	-3113	-3410
Insheim GTI1b	3438343	5446624	139.78	146	-3611	-2319	-2624
						-2657	-2680
						-2850	-2873
						-2972	-3611
Insheim GTI2	3438345	5446617	139.78	34	-3525	-2775	-3081
						-3253	-3525
Soultz EPS1	3417106	5422154	176.6	n/a	-2035	-	-
Brühl GT1	3465862	5472347	98.3	n/a	-3174	-3022	-3183

Parameter	Consideration Description	Commentary
Well sample recovery	• Nature and quality of down-hole samples (e.g. cuttings, core, fluids etc.) and sampling intervals including the basis for determination of sampling depths and measures taken to ensure samples are representative	• Within the Lionheart and Mannheim areas, the Vulcan Group has yet to conduct any new down-hole sampling programs as no new wells have been completed recently. This will be updated when the current new well in the Lionheart area, which is in progress, is completed. • Vulcan Group has no physical access to cuttings and cores from legacy wells, but has access to the reports of the data from these wells. Fluid samples for the assessment of density and specific heat capacity are available from the Insheim and Landau wells (Lionheart area).
Geological log	• The nature and scale of logging as well as the basis for geological interpretation and identification of alteration zones (e.g. qualitative vs. quantitative logs, lithology, palaeontology, palynology, mineralogy, fluid inclusions, Vitrinite reflectance etc.) • Whether there is any evidence from mineralogy indicating acid or high-gas fluids	• Vulcan Group's Lionheart and Mannheim Project areas, located in the larger URVBF, benefited greatly from access to publicly available detailed lithological logs and down hole geophysical logs (where available) data for the various oil and gas and geothermal wells that occur within or adjacent to the licenced areas. Government agencies have compiled such data for more than 1500 oil and gas wells, geothermal, thermal, mineral water and mining boreholes (deeper than 200m) across the entire URVBF, within and proximal to Vulcan Group's licence areas. • During 2020, Vulcan Group acquired additional detailed lithological and downhole geophysical measurements from geothermal well Brühl GT1-3 which is located

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Parameter	Consideration Description	Commentary
		approximately 9km south of the Mannheim licence area. It penetrated through the same Permo-Triassic strata being assessed by Vulcan Group. Wireline logging runs were performed in the open hole and included: FMI-GR (resistivity image, caliper), DSI-GPIT-PPS-GR (sonic, caliper), LDS-GR (density, photo electric factor), and UBI-GR (acoustic image). The downhole information provided both qualitative (e.g., litho-logs) and quantitative information such as porosity and permeability measurements. These data were used to study and assess the hydrogeological characteristics and variations between, for example, host rock matrix porosity and fault zone fracture porosity. • From 2020 to 2022, Vulcan Group reinterpreted existing 2D seismic data in the Ortenau, Taro, Mannheim and Lionheart licence areas. This interpretation benefited particularly from detailed study of historical well logs from two wells (Appenhofen 1 and Brühl GT1). These logs were acquired by companies other than Vulcan Group, but their content facilitated Vulcan Group's interpretation and correlation of subsurface stratigraphy. That is, the historical well logs data helped with interpretation of seismic line profiles and to confirm and validate key stratigraphic marker horizons including the Buntsandstein surface and various fault zones that are critical to the current Geothermal Resource Estimation process. • In late 2022 to early 2023, the in Vulcan Group acquired, processed, and interpreted state of the art depth imaged 3D seismic data in the Lionheart and Mannheim areas. The new 3D seismic was integrated with existing subsurface data resulting in a high confidence reservoir model of the brine reservoir and allowed for optimised well placement for Phase One. • The detailed lithologic and geophysical well logging data acquired by Vulcan Group from various sources was assessed based on quality and resolution and incorporated into the Lionheart modelling that underlies the Geothermal Resource Estimation program carried out by the company. • The Mannheim licence area is largely covered by 3D seismic surveys (Mannheim 3D and Weinheim 3D were processed together and merged). The small areas in the NW of the licence area not covered by 3D are covered by 2D lines with a spacing of about 2-3 km. Further legacy 2D lines are available and were interpreted to tie the

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Parameter	Consideration Description	Commentary
		infield interpretation with the key offset wells Brühl Gt1, which intersected and successfully tested a fault damage zone within the Buntsandstein target interval. as well as with the offset well Eppstein 1. • Based on validation discussions with Vulcan Group staff, plus review of compiled logging data and related geological and Geothermal Resource Estimation digital models, the Geothermal Resource CP has concluded that such data are acceptable for use in Vulcan Group's current Geothermal Resource Estimation. • No H2S is expected in the Mannheim area, but there is a potential for minor hydrocarbon gas accumulations in shallower formations.
Downhole temperature pressure and flow logs	• Nature (e.g. continuous log, maximum recording thermometer, injectivity test, Pressure Build Up etc.), quality (e.g. tool precision, operating parameters, time allowed, resolution, type and frequency of calibration) and appropriateness (e.g. tool operating parameters relative to hole conditions, tool resolution, processing or corrections required and/or applied) of instrument/s used • Characteristics and quality of measurement(s) (depth, frequency, timing, precision, accuracy etc.) including level of uncertainty • Appropriateness of interpretation with consideration for all significant influences (e.g. presence of local aquifers or known fluid circulation, well status at time of logging (e.g. shut in, flowing, injection rate etc.) • Nature and quality of any temperature correction/s applied or justification for neglecting correction (e.g. length of time	• Pressure and temperature logs are available from Brühl GT1; Landau GtLa1, GtLa2; Insheim GTI1, GTI2; Appenhofen-1 and used by Vulcan group. • Flow logs are available from Insheim GTI1, GTI2. • In some cases, the raw data is not available, but it is possible to get an estimate of injectivity/productivity indices by analysing the plots in published reports. • Consideration is given for geothermal well completions which may consist of an uncemented slotted liner in an open hole. This can introduce uncertainty to the interpretation of production/injection logging tests since a change of flow in the liner can be associated to an inflow/outflow in the formation or a flow within the annulus. • Within the Mannheim license area, the only deep well being drilled so far is Sandhofen 1 from which subsurface temperature data are reported. Regional temperature data from borehole measurements in the wider region, however, are publicly available (www.geotis.de, Agemar et al. 2014) and used to model reservoir temperatures.

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Parameter	Consideration Description	Commentary
	elapsed between drilling and temperature measurement) • If no corrections are applied and the measured temperature is likely to be affected by the drilling thermal anomaly this must be clearly state	
Other downhole logging	• Nature (e.g. FMI, Gamma, calliper etc.), quality (e.g. tool precision, operating parameters, resolution, type and frequency of calibration) and appropriateness (e.g. tool operating parameters relative to hole conditions, tool resolution, processing or corrections required and/or applied) of instrument/s used • Nature and quality of measurement(s) (depth, frequency, timing) • Appropriateness of interpretation with consideration for all significant influences (e.g. hole condition, temperature, formation invasion etc.	• Available logs: GtLa1: GR, FMI; GtLa2: GR, FMI; GTI2: GR, FMI, Litholog; GTI-1: GR, FMI, Litholog, Res; Appenhofen 1: spectral GR, DEN, NEU, Sonic, Res, SP, Caliper, Brühl GT1: GR, Density, FMI, UBI, Sonic, Litholog; Offenbach GT1: FMI • The quality allows an adequate assessment of the formations and the properties. • The hole conditions in all evaluated wells were stable and allowed a good formation evaluation campaign and subsequent interpretation. • The interpretation of logs is not hindered by hole conditions; no formation invasion; stable hole conditions; temperature not exceeding tool-functionality.

Aquifers	• Location of permeable zones/aquifers, their significance and relationship to structures and stratigraphy
	• Nature, quality and appropriateness of model/s used to determine adjusted heat flow
		• The URG represents a well-studied classical non-magmatic convection-dominated and fault-controlled geothermal play system in an extensional domain.
		• The geothermal system in the URG is characterised by:
		  ○ Convection via active faults and fractures which are kept open via frequent natural seismicity
		  ○ A reservoir (Buntsandstein) capable of storing and conducting hot brine, which is characterized by a high fracture permeability and additional matrix pore space
		  ○ Recharge takes place by infiltration of meteoric water to maintain the fluid budget in the reservoir and balances discharges and water consuming fluid/rock interactions

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Parameter	Consideration Description	Commentary
		• The temperature in the subsurface of the URG is controlled by conductive and convective heat transport. Fluid flow and convective heat transport occur predominantly along active fault zones that are associated with high fracture permeability. Hence upwelling of deep groundwater is the main reason for localised thermal anomalies.
Depth of reservoir	• Depth of anticipated reservoir development	• For Mannheim, the reservoir depth of the primary reservoir interval in the Middle and Lower Buntsandstein is between 3200-4200m TVDSS.

Injection tests	• Nature and quality of injectivity tests conducted across permeable zones
	• Nature (e.g. calculated or observed, flow versus wellhead pressure) and appropriateness of determined injection capacity of well including key assumptions and temperature data
	• Any evidence of temporal change
		• From within the Lionheart development field, hydraulic well test data are available from the following wells:
		    ○ Insheim GTI1/GTI1b and GTI2 (geothermal wells)
		    ○ Landau GtLa1 and GtLa2 (geothermal wells)
		    ○ Appenhofen 1 (oil and gas exploration well)
		• Appenhofen-1(1983): In total five Drill Stem Test (DSTs) have been conducted in the Appenhofen-1 well. One DST test targeted the Upper Buntsandstein in the interval 2,393 – 2,420 m Measured Depth (MD) (open hole straddle test)
		• GTI-1:
		    ○ After drilling and completion, a clean-up production test (shown as positive rates - 8 October 2008) and two injection tests (shown as negative rates -13-14 October 2008) were performed to characterise the initial hydraulic connection of the well to the reservoir. Raw data are not available.
		    ○ The clean up production period was carried out by displacing wellbore fluid with fresh water to activate artesian outflow. When the test started, Wellhead Pressure (WHP) was approximately 17 barg. While flowing, the well heated up and the artesian flow rate increased limited to 20 l/s by a slide gate valve. Injection testing: Step Rate Test (SRT) (duration of low sequence of one hour each) followed by a longer flow injection sequence of three hours. All tests were limited to a total volume of 1,550 m^3 due to the limited storage capacity at the well site. Those tests confirmed the potential to produce with a doublet at a rate ranging from 50 l/s up to 60 l/s with a drawdown of 30 barg. Further tests (circulation test, pulse injection) confirmed this range.

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Parameter	Consideration Description	Commentary
		○ To enhance injectivity of GTI1, which was limiting the performance of the doublet GTI1-GTI2 at the time after drilling and testing GTI2, a series of tests were performed in GTI1 again between 22 July 2009 and 04 November 2009 (Jung 2009b), and then the well was stimulated (Jung 2010a) with acid and water injection. The stimulation jobs (acidisation and hydraulic fracturing) turned out to be counterproductive since the overall injectivity index decreased significantly. This is most likely due to the acid job whose design was more suitable to a carbonate formation than a sandstone formation. Following this outcome, it was decided to drill the side-track GTI1b as a mitigation measure. • GTI-1b: ○ After drilling the side-track, three injection tests with 30, 60 and 80 l/s were performed on 26 October 2010. The initial production/injection rates were recovered with this side track. ○ Pressure and temperature logging were done under shut-in conditions in April 2023. • GTI-2 ○ After drilling and completion of GTI2, a series of production and injection tests in GTI2 as well as a circulation test were performed, the latter to investigate the hydraulic communication between GTI1 and GTI2 ○ Injection tests in steps of increasing pump rates (28 April 2009, 03 May 2009) ○ Injection tests with constant pump rate (22 April 2009, 04 May 2009, 11 May 2009) ○ Production tests (25 April 2009, 30 April 2009) ○ Circulation tests (06 May 2009 with GTI2 producing, 16 May 2009 with GTI1 producing) ○ As with testing of GTI1, all tests, but circulation tests, were limited to a storage volume maximum at the well site of 1,550 m^3. A report of the test analysis is available, however, raw data are missing which

Parameter	Consideration Description	Commentary
		prevents any quantitative PTA. The well was conducted at hydrostatic pressure condition with an air column of 80 m. ○ Tests proved that a production range of 50-60 l/s is achievable with a 30 barg drawdown. Observed injection indices are within the same range as GTI1/GTI1b. ○ Two Injection Logging Tests (ILT) were done in GTI2 in 2014 and 2023 under shut-in and flowing conditions. Due to the limitations of both surface storage (only 400 m^3) and injection pump, only short flowing injection periods at relatively low flow rate were done – less than 40 l/s for less than two hours. In 2014, the injection rate when logging went as low as 5 l/s, which did not yield a representative well response. After the 2014 logging campaign, a 6 m interval was perforated in the Muschelkalk formation. This perforation seems effective, though at a lower level, since it contributes to 6 % to the outflow as per the 2023 ILT. In 2023, an obstruction was observed at 3065 m MD which prevented any deeper logging operations. ○ In 2023 a short flow after flow test was done to evaluate the occurrence of friction/turbulence losses. • Geothermal wells, GT-La1 and GT-La2, were drilled in 2005/06 ○ GT-La1 showed sufficient productivity right after initial cleaning and testing ○ GT-La2 needed stimulation to improve the permeability of the pay zones. This well was hydraulically stimulated and additionally treated with acid • Brühl GT-1: ○ A step-injection test was performed in the geothermal well Brühl-GT1 on May 10-12, 2013 with the aim to examine the injection properties of the transected fault zone in the Middle Buntsandstein and to compare them to the production properties determined during the first flow test. ○ The flow rates during the injection test were 30, 60 and 90 l/s, while the production rate during the flow test amounted to approx. 70 l/s. The results of the injection test revealed an injectivity index of 30 l/s/bar for the fault zone (with-out inlet pressure losses). This is - within the

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Parameter	Consideration Description	Commentary
		limitations of measuring accuracy - in line with the productivity index of the fault zone (without inlet pressure losses), determined in the flow test.
Multi-well tests	• Nature (e.g. circulation, interference, tracer etc.) and quality of well tests and measurements, including duration and sampling methods where relevant • Appropriateness of test interpretation including any corrections or omissions and any evidence of temporal variation	• Multi rate test were performed on Insheim producer and injector wells to access flow levels vs drawdown and calculate productivity/injectivity index. Production/injection volumes were usually limited by surface pools capacity where produced brine was accumulated; however, the volume was enough to make 3-4 steps (2-4 hours duration each) of Multi rate test - sufficient number of steps. With pressure measurement at well head and bottom hole multi-rate tests could be considered as good quality.
Well discharge testing	• Nature (e.g. James method, separator and orifice plates, Tracer Dilution Flow Test etc.) and duration of tests (including completeness of the measurement suite over the wellhead pressure discharge curve) • Quality and reliability of monitoring equipment • Characteristics observed over time including any chemical and/or physical indications of dilution by drilling fluids, stability, multi-zone behaviour, possible scaling or dry-out, tracer returns	• Production/Injection tests are performed after drilling and cleaning up the wells to estimate well flow parameters and productivity index. Production/Injection test duration varies from 2 hours to several days. Configuration of well tests are different, but regular program includes Production/Injection test, multi-rate test, Shut-in for Pressure Build Up/Pressure Fall Off for producer and injector wells accordingly ensuring to capture flow rate, pressure and temperature data. • During Insheim production, the well parameters including flow rate, pressure and temperature are measured constantly (on daily basis). • Pressure monitoring was done by well head and portable bottom hole manometers. Flow rate was measured by flow meters. • During more than 10 years of continues production on Insheim, there is no decline in flowing pressure and produced brine temperatures, suggesting that the offtake by the producer is totally compensated with injection by the injector well that is located in the reservoir within the distance of 1.5 km away from the producer. Stable temperature suggests that there is no direct breakthrough of injected cold (65 C) brine from injector to producer.

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Naturally Convective Systems and Hot Sedimentary Aquifer Resource Parameters

Parameter	Consideration Description	Commentary
Flow rate	• Nature (e.g. individual vs. interference, duration, depth etc.), quality and appropriateness of techniques used to record flow rates in wells together with key assumptions made • Where rates are derived from individual well tests these must be detailed individually and must not be summed except with suitable acknowledgement of possible interference • Magnitude and uncertainty of temperature and pressure drawdown observed during flow tests, in relation to chemical indications of stability and long-term trends	• Flow rate data is available for the operating well at Insheim and historical data on the wells at Landau. Brine flow rates of 65 l/s are the average rate from Insheim well with capability to 80 L/s. • Well test data are available from: Insheim GTI / GTI1b, GTI2; Landau GtLa1, GtLa2; Appenhofen 1 and Brühl Gt1. • GTI1: clean-up production test (8th Oct 2008); two injection tests (13-14th Oct 2008) – no raw data, only reports available • GTI1: Injection testing was performed in two ways: a Step Rate Test (SRT) (duration of low sequence of one hour each) followed by a longer flow injection sequence of three hours. All tests were limited to a total volume of 1,550 m^3 due to the limited storage capacity of the storage basin at the well site. • GTI1: tests confirmed potential to produce with a doublet, with a drawdown of 30barg. • Brühl GT1: Flow test performed without any artificial lift equipment on March 30, 2013 showed free, artesian outflow of up to 70 l/s at a pressure loss of about 2.5 bar in the reservoir. A step-injection test on May 10-12, 2013 (with rates of 30, 60 and 90 l/s) revealed an injectivity index of 30 l/s/bar for the fault zone (without inlet pressure losses).

Pressure Data	• Nature, quality and appropriateness of techniques used to determine reservoir pressures including multi-well correlations, fluids and key assumptions made	• FIT & LOT pressure data are available from offset wells in the URG
		  ○ FIT: Trebur GT1, Offenbach GT1
		  ○ LOT: Bellheim GT1, Brühl GT1, Offenbach GT1a, Trebur GT1
		• The Formation pressures have been evaluated from offset wells
		• No downhole pressure data are available from the Landau and Insheim wells

Recharge	• What allowance (if any) has been made for heat and fluid recharge, and the basis thereof	• Heat recharge – Regionally different heat flows from the pre-Tertiary subsurface, especially the radiogenic heat production rate of the crystalline basement. • Fluid recharge takes place by infiltration of meteoric water to maintain the fluid budget in the reservoir and balances discharges and water consuming fluid/rock interactions. • Mannheim Geothermal Resource Estimations do not include effects of recharge of hot fluid to the system.

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Parameter	Consideration Description	Commentary
Water saturation and enthalpy	• Nature and appropriateness of techniques used to determine in-situ water saturation • Nature and quality (e.g. accuracy) of measurements of well discharge enthalpy including consideration of how they relate to in situ saturation	• The assumption is that water saturation is 100%. All gases are dissolved in the brine.

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VULCAN ENERGY

Parameter	Consideration Description	Commentary
Scaling, gas content (composition) and acidity	• Data on reservoir fluid chemistry and its impact on the reservoir, wells and surface facilities • Nature and appropriateness of tests carried out to determine surface and down hole scaling potential of fluids including the basis for interpretation of test results • Nature and appropriateness of tests run, models applied or analogies used as evidence for possible offset of scaling by methods of downhole or surface inhibition	See table below; Vulcan group has access to PVT test reports.

Item	Parameter	Unit	Predicted Mean Value	Range
1. Reservor Brine/ to Inlet Heat Exchangers (163 °C)				
1.1 Physio-chemical parameters				
	Reservoir Formation	-	Basement aquifer	
	Temperature	°C	163	154 - 170
	pH (at 25 °C) (Degassed Brine)	-	5.1	4.9 - 5.3
	ORP (at 25°C) (Degassed Brine)	mV	-141	-207 - -76
	Eh (SHE) (at 25 °C) (Degassed Brine)	mV vs. SHE	28	-67 - 122
	Specific isobaric heat capacity	kJ/kg·K	3.85	3.81 - 3.89
	Density	kg/L	0.978	0.970 - 0.986
	Dynamic Viscosity	mPa·s	0.234	0.229 - 0.239
	Salinity	g/L	108.5	99 - 115
	Electrical Conductivity	mS/cm	128	114 - 143
	Bubble Point Pressure (Production Temperature)	bar(g)	22.4	
	Minimum Operating Pressure (Production Temperature)	bar(g)	25	
	Acid capacity (KS 4.3)	mmol/L	2.7	2.1 - 3.3
1.2 Hydrochemical Composition - Elemental Form Aqueous (measured at 23 °				
	Density at 23 oC	kg/L	1.077	
	Cations			
	Lithium Li	mg/L	181	155-205
	Sodium Na	mg/L	28729	26119 - 31338
	Potassium K	mg/L	4205	3830 - 4580
	Aluminum Al	mg/L	0.04	0.004 - 0.074
	Ammonium NH4	mg/L	42	38 - 45
	Arsenic As	mg/L	13	6 - 20
	Boron B	mg/L	44	35 - 54
	Barium Ba	mg/L	32	10 - 54
	Calcium Ca	mg/L	7995	7100 - 8890
	Cadmium Cd	mg/L	0.04	0.026 - 0.048
	Caesium Cs	mg/L	18	15 - 21
	Copper Cu	mg/L	0.03	b.d.l. - 0.22
	Iron Fe	mg/L	25	6 - 44
	Magnesium Mg	mg/L	109	86 - 131
	Manganese Mn	mg/L	28	23 - 32
	Molybdenum Mo	mg/L	0.04	0.043 - 0.046
	Nickel Ni	mg/L	0.05	b.d.l. - 0.28
	Lead Pb	mg/L	0.91	0.26 - 1.57
	Rubidium Rb	mg/L	27	19 - 35
	Antimony Sb	mg/L	0.23	0.098 - 0.353
	Silicon Si	mg/L	80	49 - 110
	Strontium Sr	mg/L	428	267 - 590
	Zinc Zn	mg/L	6.6	4.4 - 8.7
	Anions			
	Chlorides Cl	mg/L	64112	57841 - 70382
	Sulphate SO4	mg/L	157	110 - 203
	Bicarbonate HCO3	mg/L	166	127 - 205
	Fluoride F	mg/L	3.3	2.5 - 4.1
	Bromide Br	mg/L	187	162 - 211
	Iodine I	mg/L	1.7	1.3 - 2.1
	Phosphate PO4	mg/L	1.0	b.d.l. - 3.5
	Nitrate NO3	mg/L	b.d.l.	
	Dissolved gases equivalent (in pressurized brine)			
	Carbon Dioxide CO2	mg/L	1900	1630 - 2130
	Others			
	Silica SiO2	mg/L	171	106 - 236
	Total Dissolved Solids (TDS)	g/L	108.5	99 - 115
1.3 Gas Composition - Non Condensable Gases				
	Carbon Dioxide CO2	vol.% dry gas	90	84-94
	Argon Ar	vol.% dry gas	0,07	0,02-0,12
	Helium He	vol.% dry gas	0,4	0,2-0,6
	Methane CH4	vol.% dry gas	2,5	1,5-3,5
	Hydrogen H2	vol.% dry gas	0,4	0,0-0,8
	Hydrogen Sulfide H2S	vol.% dry gas	b.d.l.	
	Nitrogen N2	vol.% dry gas	10	6-12
	other trace gases	vol.% dry gas	0.08	0,04-0,12
	Oxygen O2	vol.% dry gas	b.d.l.	
	Sum gases	vol.% dry gas	100	
1.4 Gas to Liquid Ratio (GLR)			**1.7**	**1,5 - 2,1**

- Vulcan group has access to PVT test reports.

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Parameter	Consideration Description	Commentary
		• According to Vulcan group technical experts all tests were performed in line with standards and are of good quality.
Reservoir properties	• Nature, quality and appropriateness of methods used to determine reservoir properties (rock types, porosity, permeability, anisotropy, specific permeable structures etc.) • Basis for interpretation of temperature and pressure profile	• Appenhofen 1, Brühl GT1, Offenbach GT1, provide sufficient data to perform a quantitative petrophysical analysis on the zones of interest. • The interpretations were conducted using Lloyd's Interactive Petrophysics (IP) software in conjunction with local knowledge, available geological and drilling reports and core analysis. Log quality control, depth matching, de-spiking, correction for borehole effects were performed on the log data. • Core data are available from Appenhofen-1, five Römerberg oil wells A-E, EPS-1, Kraichgau 1002, Landau oil wells 207 & 211 – data were derived from publications, except for Appenhofen-1 where a core report is available to Vulcan.
Conceptual model: nature of the system	• Nature, quality and appropriateness of integrated geo-hydrological reservoir model including analogies used and key assumptions made • Whether the fluid is naturally convecting • If the project is based on a laterally extensive aquifer, what are its hydrological properties outside the concession area • Interpretation of physico-chemical reservoir process	• The geology has been described using all the available data including newly acquired and interpreted 3D seismic data over Lionheart and Mannheim. The static and dynamic modelling have built on educated and experienced assumptions using best practice methodologies for the evaluation of fluids in the subsurface. • Vulcan built a set of three scenarios for the Lionheart dynamic model, including low-base-high 3D geological models to represent what could be expected in the subsurface reservoir and which have been selected following a dynamic sensitivity analysis • These static reservoir models are then used as a basis for dynamic reservoir flow models which aim at predicting the fluid flow rates from the various injection and production well strategies. They aim also at forecasting the pressure and the temperature of the fluid in the reservoir • Evaluation of pressure, temperature, flow and lithium saturation of injected water is carried out with the finite difference method which is a standard method to model flow in porous media. Both static and dynamic reservoir models are proprietary and are built respectively with the software Petrel and tNavigator. • The fluid is naturally convecting in the fault / fault damage zones • The project is not based on the lateral extensive aquifer.
Numerical modelling	• Nature of numerical simulation modelling, including model structure, key parameters,	• No numerical modelling was performed for Mannheim. A full field dynamic model created for Lionheart is available for reference

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Parameter	Consideration Description	Commentary
	boundaries and relationship to conceptual modelling • Results of natural state modelling • Results of history matching (if any) • Results of forecast runs including descriptions of scenarios modelled • Sensitivity analysis and the effects of alternative interpretation	
Data extrapolation	• The extent of data interpolation/extrapolation including explanation and justification of techniques applied	• The Mannheim area is covered to a large degree by 3D-seismic data owned by Vulcan. Only the northern and southeasternmost parts are not covered with 3D-seismic and an interpolation between 2D and 3D interpretation needed to be done.

Reporting of Exploration Results

Parameter	Consideration Description	Commentary
Diagrams	• Where possible, maps and sections (with scales) and tabulations of intercepts should be included for any material discovery being reported if such diagrams significantly clarify the report • Diagrams and maps should be presented using recognised coordinate systems with datum, projection and all relevant parameters declared on the map face	• The current associated News Release and previous News Releases by Vulcan Group include explanatory figures that were used in reporting of Project information to support respective Geothermal Resource Estimation disclosures. • All map images include scale and direction information such that the reader can properly orientate the information being portrayed.
Balanced reporting	• Where possible reporting should be comprehensive • Where comprehensive reporting of all Exploration Results is not practicable,	• Comprehensive reporting of all exploration results is presented in the associated News Release and in the Technical Reports associated with Vulcan Group's URVBF Exploration Licences.

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Parameter	Consideration Description	Commentary
	representative reporting 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; groundwater; geotechnical and rock characteristics; potentially deleterious or contaminating substances	• A substantive amount of historical data was used to investigate and characterise the configuration and hydrogeological properties of the Permo-Triassic aquifers. These aquifers include the Buntsandstein Group, Rotliegend Group (where present) and Muschelkalk Group. Hydrogeological properties include porosity and permeability. Historical temperature from the geothermal brine production and geochemical data were used to assess the Permo-Triassic aquifer brine. • Numerous geothermal, or oil and gas wells, were historically drilled by companies other than Vulcan Group within the boundaries of the URVBF licences. • Intersected formation tops were reviewed for five historical wells in the Lionheart (i.e., Insheim, Landau, and Rift) development area. Two of these wells (Insheim GTI1 and GTI2) intersected formation tops of the Muschelkalk, Buntsandstein and Rotliegend groups as well as the basement rock. • For the Mannheim Project, formation tops and log data from the following historical offset wells in the vicinity of the Mannheim licence have been reviewed and considered in the subsurface interpretation and modelling workflow: Brühl GT1, Eppstein 1, Waldsee 1, Schriesheim 1, Frankenthal 10, Weinheim GT1, Worms 4 and Hofheim 3
Audits or reviews	• The results of any audits or independent reviews of exploration data, models or interpretation	• A review and check of the Mannheim exploration results was completed by an external consultant independent (GLJ Ltd.) from Vulcan Group.

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).	• The following next steps are planned as the Vulcan Group works towards an FDP and the execution of the Mannheim project:
		  ○ Seismic re-processing for the Mannheim/Weinheim 3D seismic is being considered to further improve the seismic image
		  ○ Re-interpretation of challenging borehole image logs from Brühl GT1 will be attempted
		  ○ Airborne full tensor gravimetric and magnetic measurements over Mannheim licence are planned for later in 2025
		  ○ Development planning for Mannheim will include heat and power

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Parameter	Consideration Description	Commentary
		○ A heat offtake agreement is in place with MVV and the date of heat delivery is currently under discussion with the aim of first heat delivery in end of 2029 ○ Selection and design of the first well site is completed as preliminary siting. Discussions with engineering firms regarding ground surveys are ongoing in order to implement a detailed well site layout. ○ Together with the well engineering, the well site layout forms the basis for the FDP, including all the permitting processes, ○ Once all necessary permits have been secured, two doublets will be drilled, a central heating plant will be constructed, and the generated heat will be fed into the local energy supplier's grid. ○ Based on the results of the first production tests, the brine sampling and hydrochemical analysis a Lithium Definitive Feasibility Study will be started.

Estimation and Reporting of Geothermal Resources

Parameter	Consideration Description	Commentary
Expected use	• Nature of the anticipated Geothermal Resource exploitation including any assumptions made	• For Mannheim, the first geothermal installation for heat provision to the Mannheim district heating network will comprise two geothermal doublets from one wellsite. • Furthermore, more than four sites were identified for future wellsites for the installation of geothermal heat and power operations. • If from these projects a sufficiently high Lithium content of the geothermal brine can be proven, all wellsites will be used for future Lithium production as well and part of the geothermal heat and power will be used for the Lithium extraction processes.
Data integrity	• Source and reliability of all relevant Geothermal Resource data	• The Vulcan Group utilized data from their own wells, as well as publicly available data where applicable. • References from Geothermal Lexicon for Resources and Reserves Definition and Reporting, Edition 2, 2010, Australian Geothermal Energy Group

Parameter	Consideration Description	Commentary
	• Measures taken to ensure data described has not been corrupted between initial collection and use in models/calculations • Data validation process	• The Geothermal Reporting Code, Edition 2, 2010, Australian Code for Reporting of Exploration Results, Geothermal Resources and Geothermal Reserves
Data interpretation	• Confidence in (or conversely the uncertainty of) any interpretation of geological, geophysical or geochemical data to be used in the Geothermal Resource estimation • The effect, if any, of alternative interpretation/s upon Geothermal Resource estimation	• Due to the absence of in-field well data, the uncertainty level for Geothermal Resource estimation is higher in Mannheim compared to Lionheart where such data is available. It is, however, of reasonable level of confidence that allows for estimation of Inferred and Indicated Geothermal Resources.
Well deliverability	• Must be demonstrated if Geothermal Resource/s to be regarded as Measured • Whether the project will rely on pumping or self-discharging wells • Information on expected parasitic power requirement for production or injection pumps	• For Mannheim the offset well Brühl GT1 has shown sufficient well deliverability. • Since no infield wells are available, no measured resources can be estimated at the current status. • The project relies on pumping from wells. • Parasitic power load for well pumps and other related production/injection equipment are taken into consideration for the project planning.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions made • The availability of previous production records and whether such data is considered • Any assumptions regarding the correlation of variables • The process of validation, the checking process used and the reconciliation of model to measured data and the verification of significant results by application of alternative techniques and/or independent personnel	• For Mannheim, a seismic interpretation based, static geomodel, which forms the basis for the GRV calculation and resource estimation has been established in Petrel • No dynamic model is available for Mannheim.

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Parameter	Consideration Description	Commentary
Cut-off parameters	• The basis for any adopted cut-off temperatures, flow rates or quality parameters (e.g. reservoir porosity, well deliverability etc.) applied, preferably related to a known technology pathway	• For the expected mean reservoir temperature in Mannheim a representative value has been considered, which is based on measurements from offset wells and a third party temperature model (GeORG 2013) and which give a mean temperature of approximately 170 °C for Top Buntsandstein in the area of interest. • Flow rates are derived from the Landau and Insheim existing wells and the well design planned for the Phase One wells. • Porosity and permeability data from core plug measurements are available from the Appenhofen-1 well and in published reports from the Landau and Römerberg oil fields, EPS-1 well and the Kraichgau 1002 well. All samples have been taken from the Buntsandstein Formation. Most of the data originate from the Upper and Middle Buntsandstein. The sample depths range from 1000-2500 m and show a correlation between sample depth and reservoir quality, the matrix permeability is often reduced with increased burial depth. • For Mannheim, a reinjection temperature of 65°C has been used, which is based on the design of the planned surface facilities in Lionheart.
Recovery factors	• Must be explicitly stated and justified	• Geothermal Resources based on a 50yr productive lifetime assumption • The recovery factor assumed for the FDZ is 6% and for the host rock matrix, it is 3%. • An assessment of reasonable recovery factors from analog projects was conducted.
Conversion efficiency	• If used, expected conversion efficiency for converting heat into electricity • Methodology used for determination of conversion efficiency including an explanation of the technology pathway and justification of any assumptions made	• No conversion from heat into electricity was estimated for the report.
Dimensions	• The extent and variability of the estimated Geothermal Resource expressed as surface area and depth below surface including an	• The reservoir geometry is a result of regional well correlation, regional seismic to well-ties and in-field 2D and 3D seismic interpretation. • GRVs are calculated for each of the different reservoir intervals and zones distinguishing between Geothermal Resource Classifications of Indicated,

Parameter	Consideration Description	Commentary

	explanation of the basis for any interpretations of reservoir geometry	Inferred for the Mannheim licence area. Below is a list of depth ranges for the tops of the different reservoir units in TVDSS and the corresponding calculated GRVs for each segment:
		• Indicated:
		  ○ Middle and Lower Buntsandstein (FDZ): 11 km^3; 3100m-4100m TVDSS
		• Inferred:
		  ○ Muschelkalk: 3,1 km^3 (FDZ); 3169m-3941m TVDSS
		  ○ Upper Buntsandstein (FDZ): 2,1 km^3; 2952m – 3840m TVDSS
		  ○ Middle and Lower Buntsandstein (HRM): 33 km^3; 3100m-4100m TVDSS
		  ○ Basement: 2,9 km^3 (FDZ only); 3472m – 4527m TVDSS

Geothermal resource life	• The expected life of the Geothermal Resource based upon available modelling and anticipated development • Nature, quality and appropriateness of methods used for Geothermal Resource-life modelling including key assumptions • Estimation of deleterious elements (e.g. short circuiting, scaling etc.	• The expected life used in the estimation of geothermal resources is 50 years. This is considered as a reasonable development timeline but is not meant to represent the economic project life.
Classification	• The basis for the classification of the Geothermal Resource into varying confidence categories • Whether appropriate account has been taken of all factors • Whether the results appropriately reflect the views of the Competent Person	• For the Mannheim licence area, Geothermal Resource estimation is limited to Indicated and Inferred classifications as no wells have been drilled to reservoir depth. The volume associated with Buntsandstein fault damage zones is classified as Indicated Resource. This is based on reservoir and temperature data from the closest offset well Brühl GT1 (9km south of MAN licence boundary), which intersected this zone and confirmed it to be productive. The volumes associated with the Buntsandstein host rock matrix and FDZs of secondary reservoir units are classified as Inferred Resources • The Geothermal Resource Estimate has been prepared by a multi-disciplinary team that include geologists, reservoir engineers, hydrogeologists, geothermal specialists, and process engineers with relevant experience in Permo-Triassic and other geothermal brine geology. There is collective agreement that the

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Parameter	Consideration Description	Commentary
		Vulcan Group Project has reasonable prospects for economic extraction at current and forecast geothermal heat and power market pricing levels. Technical Report author Mike Livingstone, P.Geo., M.Sc., takes responsibility for this statement, as Geothermal Resources CP.
Third party involvement	• Acknowledgement of possibly conflicting developments by other parties	• No conflicting developments by other parties are anticipated at this time.
Audits or reviews	• The results of any audits or reviews of the Geothermal Resource estimate	• A review and check of the Lionheart and Mannheim Geothermal Resource Estimations was completed by an external consultant independent (GLJ Ltd.) from Vulcan Group. In addition, the CP (independent of Vulcan Group) conducted a review of all Vulcan Group activities that supported Geothermal Resource Estimation.
Balanced and impartial reporting	• Where possible reporting should be comprehensive • Where comprehensive reporting of all Geothermal Resource estimation is not practicable, representative reporting should be practiced to avoid misleading reporting of Geothermal Resource estimation	• This is the first reporting of Geothermal Resources by the Vulcan Group for the licences in the URVBF.
Discussion of relevant accuracy/confidence	• Where appropriate a statement of the relative accuracy and/or confidence in the Geothermal Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of sensitivity analysis, probabilistic analysis or use of scenario trees, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate • The statement should specify whether it relates to the whole or partial Geothermal Resource and, if partial, clearly state the	• In the opinion of the Geothermal Resources CP, the Mannheim Indicated and Inferred Geothermal Resource Estimations are reasonable for the Permo-Triassic aquifer within the Vulcan Group Mannheim licence area. • Risks and uncertainties as they pertain to the Geothermal Resource Estimates include: ○ Placement of deep wells in fault zones ○ High cost of deep well drilling ○ Brine temperatures ○ Recovery factors ○ Contribution of host rock matrix • As development continues, incorporation of associated results will reduce inherent Geothermal Resource uncertainty and Project risk.

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Parameter	Consideration Description	Commentary
	extents along with assumptions made and procedures used • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available	• The reader should be aware that the reality of any geothermal production project is that the extent of brine recovery from the Geothermal play will be a function of the design of the recovery/reinjection system and the connectivity of the subsurface brine zones. To some extent, it will not be feasible to capture all brine from the subsurface strata included in the Geothermal Resource estimate. • The planned brine production system will be based on doublets with a production well and reinjection well. It is noted that dilution factors caused by injecting the spent brine into the hydraulic system could influence the operational timeline of a given well doublet, beyond the extent to which already modelled. • Localised high permeabilities can lead to channelling effects such that the geothermal reservoir potentially becomes inefficient in terms of capturing brine from a broader zone. Thus, the exploitation of fault zones can constitute a trade-off between high permeability and reduced reservoir volumes.
Qualifications and accountability	• A statement of the qualifications, experience and accountability of the Competent Person making the assessment	• The Competent Person for Geothermal Resources is Mr. Mike Livingstone, P.Geo., who is a full-time employee of GLJ Ltd., of Calgary, Alberta, Canada. Mr. Livingstone is a member as a Professional Geoscientist of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), a 'Recognised Professional Organisation' included in a list that is posted on the ASX website from time to time. Mr. Livingstone has sufficient experience which is relevant to the style and type of geothermal play under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the Second Edition (2009) of the 'Australian Code for Reporting Exploration Results, Geothermal Resources and Geothermal Reserves'. Mr. Livingstone consents to the disclosure of the technical information as it relates to the Geothermal Resource Estimation in this document in the form and context in which it appears.

Estimation and Reporting of Geothermal Reserves (Not Applicable)

Additional Factors: Existing Developments

Parameter	Consideration Description	Commentary
Production data	• Production data on past total heat and fluid extraction and reinjection • Pressure, temperature, enthalpy and chemical historical trends both for individual wells and the whole Geothermal Resource, together with any interpretations in terms of reservoir processes and the hydrogeological conceptual model • Any assessments of heat and fluid recharge	• Due to the absence of existing developments in Mannheim, there is no in-field production data available. • Insheim nearby serves as analogue and there in more than 10 years production cumulative brine production has reached the level of more than 19 MM tonne. Total volume of produced brine was injected back to the formation. This brine volume is equivalent of 7 PJ produced heat cumulative produced from the Insheim wells. • Insheim average flow rate is 65 l/s, where brine temperature stays constant at the level of 163 C. • By monitoring pressure and temperature staying constant the conclusion is heat and fluid is fully recharged at current production/injection rate with no depletion effects.

Reservoir monitoring	• Methods used and an assessment of data quality for reservoir monitoring, including but not limited to:
	  ○ Surface and downhole pressure and temperature measurements
	  ○ Fluid flows and enthalpy measurements
	  ○ Tracer tests
	  ○ Well output tests
	  ○ Thermal activity and heat flow monitoring
	  ○ Ground deformation monitoring
	  ○ Microgravity monitoring
	  ○ Environmental monitoring
		• Not yet applicable for Mannheim. The Lionheart Project area serves as basis for what is planned in Mannheim:
		  ○ Pressure and temperature are monitored by well head pressure gauges on daily basis. During the well tests portable downhole gauges are also added to read the pressure at bottom hole of the well.
		  ○ Fluid flow of produced and injected brine is monitored with flowmeters on daily basis.
		  ○ Tracer test has been performed on Insheim, but results have been inconclusive and not used for reservoir performance evaluation.
		  ○ Continuous monitoring of induced seismicity in Landau and Insheim is taking place and is likewise planned for Mannheim prior to the start of operations.

Production history	• History of Geothermal Resource usage including numbers and locations of wells used for production and reinjection, especially in relation to observed reservoir changes	• Not applicable for Mannheim due to absence of in-field wells: Wells from Lionheart Project area serve as analogues for Mannheim. • Both Insheim and Landau (one producer one injector on each site) have Organic Rankine Cycle to generate electricity and District heating line to supply the cities with the heat. For Insheim 19 MM tonne of brine was

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		produced and injected back to the formation. Since Landau facilities have been recently acquired by Vulcan, historical production data are not yet fully available.
Numerical modelling	• Numerical simulation modelling should be used at this stage as soon as sufficient production history is available to do so in meaningful fashion • Good history matchings should be achieved for credibility • Should include a detailed description of all scenarios modelled and bear a close relationship to the actual existing or proposed development scheme	Not applicable at this stage of development
Development scenarios	• Future Geothermal Resource usage scenarios	• The first geothermal usage will encompass a first wellsite with two doublets to provide heat to the district heating network of Mannheim • At least four additional well sites were already identified and could be developed step by step to provide more heat to the district heating network of Mannheim and to neighbouring cities like Viernheim, Ladenburg, Ilvesheim, Hirschberg, Heddesheim, Weinheim etc. • If the geothermal capacity by future developments significantly exceeds the demand of the existing or future district heating network, centralized ORC plant for power production can be added. • If the brine sampling results show sufficiently high Lithium content as expected, further heat demand will arise from the Lithium extraction processes.

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2. ANNEXURE 2 - JORC Code 2012 Table 1 – MANNHEIM

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 (eg. '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 (eg. submarine nodules) may warrant disclosure of detailed information.	• The Mannheim licence is located in the Upper Rhine Valley Brine Field (URVBF) within the Upper Rhine Graben (URG). Vulcan Group has access to existing, deep geothermal wells with proven drilling information and lithium brine grades within the region. • There have been no samples taken within the Mannheim licence area due to lack of existing wells producing from the target formations, however, samples from the URVBF region have been used to support the mineralisation assumptions for Mannheim. • Vulcan Group brine sampling programs in the URVBF carried out from 2019-2024 are described in the previous Prospectus CPR 12-2024 and DFS ASX 02-2023 reports in including the industry standard collection techniques and quality control procedures. • The current Mineral Resources CP reviewed the techniques of the regional brine sampling program carried out by Vulcan Group, along with their related analytical procedures, and concluded that these were conducted using reasonable and industry-standard techniques in the field of brine sample collection and assaying and that there are no significant issues or inconsistencies that would cause the validity of the sampling or analytical techniques used by Vulcan Group to be questioned. • In combination, these data support the Mineral Resource CP's conclusion that the Permo-Triassic brine in the URVBF and specifically within the Mannheim licence reservoir units is consistently enriched in lithium.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple	• The well data from various sources available for this Project are described in the previous report Prospectus CPR 12-2024. The closest proximity geothermal well,

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Criteria	JORC Code Explanation	Commentary
	or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	Brühl GT1, was successfully drilled into a fault damage zone and terminated in the Buntsandstein reservoir by a third party and was subsequently sealed. • The geothermal well designs and drilling measurement techniques generally utilized in the URVBF are described in the previous report Prospectus CPR 12-2024. • Vulcan Group has not yet conducted any new drilling programs designed specifically to support exploration, evaluation, or mineral resource estimation within the Mannheim licence.
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.	• Vulcan Group has yet to conduct any new drilling or core sampling programs within the URVBF. Existing drilling, geological, petrophysical and lithium brine data has been used for geologic and reservoir brine evaluations, as described in the previous report Prospectus CPR 12-2024.
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.	• Vulcan Group's Mannheim licence benefited greatly from access to publicly available detailed lithological logs and down hole geophysical logs (where available) from the various oil and gas and geothermal wells within the URVBF. Government agencies have compiled such data for more than 30,000 oil and gas wells, geothermal, thermal, mineral water and mining boreholes across the entire region, within and adjacent to Vulcan Group's resource areas. • During 2020, Vulcan Group acquired additional detailed lithological and downhole geophysical measurements from geothermal well Brühl GT1-3 which is located approximately 10km from Vulcan Group's Mannheim licence. It penetrated through the same Permo-Triassic strata being assessed by Vulcan Group. Wireline logging runs were performed in the open hole and included: FMI-GR (resistivity image, caliper), DSI-GPIT-PPS-GR (sonic, caliper), LDS-GR (density, photo electric factor), and UBI-GR (acoustic image). The downhole information provided both qualitative (e.g., litho-logs) and quantitative information such as

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Criteria	JORC Code Explanation	Commentary
		porosity and permeability measurements. These data were used to study and assess the hydrogeological characteristics and variations between, for example, host rock matrix porosity and fault zone fracture porosity. • Well logs from the Eppstein 1 and Brühl GT1 wells were used confirm and validate the seismic interpretation of key stratigraphic marker horizons. • The detailed lithologic and geophysical well logging data acquired by Vulcan Group from various sources was assessed based on quality and resolution and incorporated into the Mannheim modelling that underlies the mineral resource estimation.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all cores 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 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.	• Vulcan Group has been operating lithium extraction piloting programs for over 3 years regularly collecting brine samples from the hot and cold circuit sample points at Insheim and Landau. These samples and resulting geochemical analysis provide a large data sampling for the URVBF. • The sample sizes and quality control are appropriate for industry standard brine assay testing and comparable to those documented in Vulcan Group's previous Prospectus CPR 12-2024 and DFS ASX 02-2023 reports. • As part of the 2019 brine analysis program, archived Brühl GT1 brine samples were analysed. The unfiltered brine sample was originally collected during a short production test in 2013 and stored for 6 years at approximately 20 °C. No sampling procedure documentation is available. The well was not available for additional sampling due to project circumstances and sealing of the well by the third-party owner. • The archived amount of brine from the Brühl sampling program was limited, and therefore, insufficient for a secondary check analysis at the University of Heidelberg, as per Vulcan's sampling protocol.
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.	• The brine sample collection, sample handling, analytical techniques, and QA/QC protocols used by Vulcan Group conform to industry standards. • The archived Brühl sample was recognized as being influenced by dilution, consistent with the use of freshwater during production testing, and also with loss of drilling fluids. Vulcan conducted an assessment and interpretation of the

Criteria	JORC Code Explanation	Commentary
	• 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.	lithium concentration results based on reservoir temperature estimates using geothermometers developed for geothermal brines. • The Mineral Resources CP concludes that Vulcan Group lithium brine sampling and analysis uses industry standard protocols and are acceptable for use in the Mineral Resource Estimates.
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.	• Vulcan Group does not have operating geothermal wells with proven drilling information and lithium grades within its Mannheim licence. The Mannheim project is in early scoping stages and has future plans for drilling of a new well to gather samples. • Site visits and sample verification by the CP's are described in the previous Prospectus CPR 12-2024 report with regards to the Vulcan Lionheart project, which provides sample representation for the region.
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.	• The grid system used is UTM WGS84 zone 32N. • The surface Digital Elevation Model used in the three-dimensional model was acquired from JPL's Shuttle Radar Topography Mission (SRTM) dataset; the 1 arc-second gridded topography product provides a nominal 30 m ground coverage.
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	• The Mannheim licence Mineral Resource Estimation uses subsurface lithological information from existing off-property geothermal wells including Brühl GT1. These well locations are supplemented with extensive 2D seismic data and 3D seismic data. • Mannheim is further supplemented by a new 3D seismic survey that was acquired in 2023, and which covers much of the Mannheim licence area. The seismic data

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Criteria	JORC Code Explanation	Commentary
	Mineral Resource and Ore Reserve Estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	has been processed and interpreted together with the existing 3D Weinheim seismic survey and tied via legacy 2D lines with regional offset wells. • Starting in late 2022, Vulcan Group acquired, processed, re-processed and interpreted state of the 3D seismic data over the Mannheim, Lampertheim, Lampertheim II and Waldnerturm licences, the licences that cover one of the priority areas of Vulcan's future phases. • Larger subsurface 3D geological models were constructed by Vulcan Group, to outline the Permo-Triassic aquifers and fault domains underlying the URVBF, in support of Mineral Resource Estimation. • With respect to lithium brine concentration, the average brine analytical results from both the regional well sampling and detailed Vulcan Group sampling at the URVBF resource area from 2019 to 2025 are comparable, with a combined average value of 181 mg/L lithium used for the Vulcan Group Phase One project area. • These values are comparable to historical and proprietary lithium concentrations that were compiled throughout the URVBF. The lower lithium concentration measured from the Brühl well, at 155 mg/L lithium with an error range of +/- 3 mg/L, was conservatively used as representative of the lithium grade of the Mannheim licence, after correction was made for dilution. The CP has reviewed the Brühl interpretation and considers the resource grade to be conservative to realistic. • Given the consistency of the lithium grades within the reservoir, and the sedimentary, continuous nature of the reservoir itself, the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource Estimation procedure(s) and classifications applied.
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.	• The 3D geological model was constructed by Vulcan Group using its recent Mannheim 3D PSDM seismic data, calibrated to wells in a geophysical and structural sense, and extended to previously acquired seismic data to fully cover the Mannheim licence.

Criteria	JORC Code Explanation	Commentary
	• 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.	• Historical and Vulcan-conducted geochemical analysis of the aquifer brine from the Permo-Triassic strata shows the brine is enriched with lithium, which is very consistent both temporally and spatially within the reservoir. • Key stratigraphic markers were correlated via its unique seismic character. Isochrone/isochore mapping was used to quality control the interpretations and to avoid unrealistic models. Fault zones were picked only where they could be positively identified in the seismic data and were correlated in consideration of their offset, dip angle and depth. Where possible, basic seismic attributes such as coherency and local structural azimuth or dip were used to validate the interpretations. • Marker horizons were validated against wireline logs and check shot data. • Dedicated 3D seismic data over Mannheim was acquired in 2022/2023 and broadly confirmed the previous in-house interpretation based on existing 2D seismic data. Further, with the improved seismic data quality and three-dimensional coverage, additional fault zones were revealed and the confidence in the local stratigraphic record was enhanced • The orientation of the Permo-Triassic strata is generally flat-lying and continuous in the URVBF area. High-angle faults have created a complex horst and graben structural environment. The Permo-Triassic strata are generally laterally continuous, despite being locally offset by rift-related faulting. It is noted that the Permo-Triassic strata have been mapped for approximately 250 km along the north-northeast strike length of the entire URVBF. • In the opinion of the Mineral Resources CP, Vulcan Group's revised Mannheim geological models, based on the totality of seismic data within and outside of the licence area, and offset drilling data available to date, provide an acceptable level of confidence in the spatial location and orientation of the top and bottom surfaces of Muschelkalk and Buntsandstein Group successions, as well as the basement surface and fault zones. Further, the resulting models are considered to provide a reasonable approach for estimating Gross Rock Volumes, for use in Mineral Resource Estimation.

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Criteria	JORC Code Explanation	Commentary
Sample security	• The measures taken to ensure sample security.	• No samples have been taken from the Mannheim licence area as there is not a representative well within the area. Samples referenced are for the Lionheart project or other offset wells within the URVBF. • Vulcan Group's 2019-2025 brine sampling programs were conducted by Vulcan Group employees. Samples were transferred with chain of custody from sample site to analytical laboratories that included: the Vulcan Group Lab in Karlsruhe, the Karlsruhe Institute of Technology (KIT), University of Heidelberg (Uni HD), and IBZ-Salzchemie GmbH & Co. KG in Halsbruecke, Germany. • Other Independent sampling was addressed in the Prospectus CPR 12-2024.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• A review and check of the Mannheim Mineral Resource Estimation was completed by an external consultant (GLJ) independent from Vulcan Group. The Mineral Resources CP participated in numerous discussions and meetings, regarding methods and interpretations for the exploration work to define the geometry and hydrogeological characterisation of the Permo-Triassic aquifer that forms the basis of the current resource model.

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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 licence to operate in the area.	• The Mannheim licence area is within the URVBF which comprises 17 Vulcan held licences. • The Mannheim licence in the northeast of the licence group is 14,449 hectares and is centred at UTM 465874 m Easting, 5484762 m Northing, in the WGS84 UTM Zone 32N projection. • An Exploration Licence is issued pursuant to the German Federal Mining Act (Bundesberggesetz: bBergG) which defines freely mineable Mineral Resources as property of the state that is administered by state authorities. Accordingly, state permits are required for exploration and extraction. Vulcan Group requires both an Exploration Licence and an Extraction Licence or Mining Proprietorship to ultimately produce from its holdings. Any future geothermal brine production from any site would also require granting of a Production Licence plus completion of an operating plan and planning approval procedure that comply with the Act on the Assessment of Environmental Impacts. • An Exploration Licence is granted for a maximum of five years and can be extended by a further three years under certain conditions. If exploration has not commenced within one year of the licence being granted, the licence may be revoked. The same result may apply if exploration is interrupted for more than one year. The Exploration Licence is merely a legal title for the exploration of Mineral Resources in the granted area and is not sufficient to carry out technical programs such as seismic surveys or exploration work in the form of drilling. For such purposes, an operating plan (Betriebsplan) must be approved by the responsible state authority. • The Mineral Resource CP was advised by Vulcan Group that all Exploration Licences covering the Mannheim area were in good standing at the Effective Date of the current Mineral Resource Estimate. • Any future geothermal and/or lithium brine production would require an operating plan and planning approval procedure that complies with the Act on the Assessment of Environmental Impacts.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The URG is under active exploration for its geothermal potential by multiple companies. Geothermal production is currently occurring at several sites other than those in which Vulcan Group is involved. As a result, important geological and brine

Criteria	JORC Code Explanation	Commentary
		data developed in support of non-Vulcan Group initiatives and evaluations is present. This has been accessed to the maximum degree possible by Vulcan Group for application in its own exploration and development programs. • Historical brine geochemical analytical results include historical analysis from the Landau, Insheim, Soultz, Brühl, and Vendenheim geothermal sites from 2019 to 2021. The historical data are presented in referenced journal manuscripts, or acquired from the operators, and the Mineral Resources CP reviewed the analytical protocols which are considered standard in the field of brine analysis and conducted at university-based and/or accredited laboratories. The historical geochemical information was used as background information and was also used as part of the Mineral Resource Estimation process. • For Mannheim, the mean Li concentration from Brühl Gt1 and Bruchsal GB 2 have been used, as they are most representative considering the geographical position and structural setting of Mannheim northwards of Phase 1 and in close proximity to the eastern graben shoulder. • From the nearest geothermal offset well Brühl GT1 a production test brine sample is available with a corrected lithium value is 155 ± 3 mg/l i.e. equal to the concentration of the Bruchsal brine. • The long-term mean Li concentration of Bruchsal Buntsandstein brine is 155 mg/l ± 4% which is representative for the fluid of production well GB 2. All samples had been professionally taken and analysed • GeotIS and GeORG data were evaluated and used to support construction of the 3D geological model used in Vulcan Group's current Mineral Resource Estimates. GeotIS and GeORG are digital geological atlases with emphasis on geothermal energy. They provide access to extensive compilations of well data, seismic profiles, information, and interpreted schematic cross sections from the evaluation of 2D seismic data with emphasis on deep stratigraphy and aquifers in Germany. The raw data, such as seismic data, are not available, as they are owned by the respective energy companies, but data profiles have been collated and interpreted for inclusion in the representative geo-dataset information systems. • Detailed studies of data from geothermal well Brühl GT-1 which was drilled in 2013, were carried out by Vulcan Group in 2019-2020 to better understand the

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Criteria	JORC Code Explanation	Commentary
		hydrogeological characteristics of the fault/fracture zones within the surrounding Permo-Triassic strata. The dataset included detailed lithological log and downhole wireline log information that included FMI-GR (resistivity image, caliper), DSI-GPIT-PPS-GR (sonic, caliper), LDS-GR (density, photo electric factor), and UBI-GR (acoustic image). Vulcan Group commissioned GeoT, now part of Vulcan Group, to describe and characterise this well data.
Geology	• Deposit type, geological setting and style of mineralisation.	• The lithium mineralisation in the URVBF is situated within confined, subsurface aquifers associated with the Permocarboniferous Rotliegend Group, the Lower Triassic Buntsandstein Group, and the Middle Triassic Muschelkalk Group (collectively, the Permo-Triassic strata) sandstone aquifers and carbonates situated at depths of between 2,165 and 4,004 m below surface. • The Permo-Triassic strata are comprised predominantly of terrigenous sand facies, with minor shales, carbonates, and anhydrites, deposited in arid to semi-arid conditions in fluvial, sandflat, lacustrine and eolian sedimentary environments. • The various facies exert controls on the porosity (1% to 27%) and permeability (<1 to >100 mD) of sandstone sub-units. Within the Permo-Triassic strata, porosity, permeability, and fluid flow rates are dependent on the fault, fracture and micro-fracture zones that are targeted by geothermal companies in the URVBF. • Lithium mineralisation occurs in the brine that is occupying the Permo-Triassic aquifer pore space. • With respect to a deposit model, the lithium chemical signature of the brine is believed to be controlled by geothermal fluid-rock geochemical interactions. With increasing depth, total dissolved solids (TDS) increase in NaCl-dominated brine. Lithium enrichment associated with these deep brines is related to interaction with hot crystalline basement fluids and/or dissolution of micaceous materials at higher temperatures. • New 3D seismic was run in 2022/2023 within the Mannheim licence area that was processed and interpreted. This new data enhanced previous geological models that Vulcan Group had of the URVBF and the Mannheim area. Additional fault zones were identified with the newly acquired data. • In the opinion of the Mineral Resources CP, the current geological models provide a level of confidence that is reasonable in terms of identifying the spatial location and

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Criteria	JORC Code Explanation	Commentary
		orientation of the Buntsandstein Group and Muschelkalk zone, basement and constituent faults for use in the current Mineral Resource Estimates.
Drill hole Information	• A summary of all information material to the understanding 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.	• Within the Mannheim licence, Vulcan Group has yet to conduct any new drilling or coring programs. However, the current Mineral Resource Estimation was able to utilise subsurface lithological information from historical wells adjacent to the holding. • There are numerous historical geothermal wells or petroleum wells drilled by other companies that extend deep enough to penetrate Permo-Triassic strata within the URVBF licence area. • Location coordinates plus orientation information for wells used to assess the lithium concentration of brine within Permo-Triassic aquifers covered by Vulcan Group's URVBF holdings are tabulated below. • Coordinate system: DHDN/3-degree Gauss zone 3, EPSG:31463.

Criteria	JORC Code Explanation	Commentary
		(well table below)

Well	Distance to city-center MAN	Deepest formation drilled	Logged key sections	Logs	Core report	Temperature data	Other
Eppstein 1	8,5 km	Unclear; Tertiary	Tertiary	SP, GR, Neutron, Resistivity, Sonic	-	BHT	Checkshot
Sandhofen 1	8,6 km	Quaternary	Quaternary	SP, GR, Neutron, Resistivity	-	-	-
Frankenthal 10	8,7 km	Unclear, Tertiary	-	-	-	-	-
Waldsee 1	10 km	Tertiary	-	-	-	-	-
Viernheim	11,4 km	Pliocene	Tertiary	GR, SP, Density, Sonic, Resistivity	-	BHT	-
Brühl GT1	12 km	Middle Buntsand-stein	Buntsandstein	GR, Density, FMI, Sonic, Litholog	-	Temperature log	Production & Injection test
Schriesheim 1	13 km	-	Tertiary	SP, Resistivity	-	-	Checkshot
Weinheim GT 1 & 2	13,5 km	-	Tertiary	GR, Sonic, Resis-tivity, Neutron	-		-
Worms 4	15,7 km	Tertiary	Tertiary	SP, GR, Resistiv-ity, Sonic, Den-sity, Neutron, Litholog	-	-	-
Hofheim 3	16,8 km	Tertiary Rotliegend	Tertiary, Rotliegend	SP, Resistivity	-	-	-
Heuchelheim 2	17 km	Unclear, Tertiary	-	-	-	-	-
Offenbach GT1	37 km	Middle Buntsand-stein	Muschelkalk, Buntsandstein	GR, FMI, Litholog, Sonic	-	Temperature log	Checkshot
Landau GtLa1	42 km	Basement	Buntsandstein, Rotliegend, Basement	GR, Litholog, FMI	-	Published log (Schindler et al., 2010)	
Landau GtLa2	42 km	Basement	Buntsandstein, Rotliegend, Basement	GR, Litholog, FMI	-	Published log (Schindler et al., 2010)	Checkshot
Insheim GTI2	43,5 km	Basement	Keuper, Muschelkalk, Buntsandstein, Rotliegend, Basement	GR, FMI, Litholog	-	Undisturbed temperature log	Production & Injection test
Insheim GTI1	43,5 km	Basement	Keuper, Muschelkalk, Buntsandstein, Rotliegend, Basement	SP, GR, Litholog, Resistivity, FMI	-	Undisturbed temperature log	Checkshot, Injection test
Appenhofen 1	47 km	Middle Buntsand-stein	Keuper, Muschelkalk, Buntsandstein	SP, GR, Density, Neutron, Sonic, Resistivity	Poro-Perm	BHT	Hydraulic test (DST), Checkshot
Kraichgau 1002	51 km	Rotliegend	Muschelkalk, Buntsandstein, Rotliegend	GR, Litholog	Poro-Perm, Facies	-	-

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of	• The brine geochemical results analysed within the URVBF have demonstrated that the Permo-Triassic brine in the URG has a relatively homogeneous lithium chemical composition.

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Criteria	JORC Code Explanation	Commentary
	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.	• For the Mannheim licence, the lithium concentration measured from the Brühl well, at 155 mg/L lithium with an error range of +/- 3 mg/L, was conservatively used as representative of the lithium grade of the Mannheim licence, after correction was made for dilution. • The CP has reviewed the interpretations and considers the resource grade to be conservative to realistic. • Elemental lithium values applied in the current Vulcan Group Mineral Resource Estimate were converted to Lithium Carbonate Equivalent ("LCE") using a conversion factor of 5.323, based on the stoichiometric quantity of lithium in Li2CO3. Reporting lithium values in LCE units is standard lithium industry practice.
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 (eg 'down hole length, true width not known').	• As mineralisation is related to liquid brine within a confined aquifer, intercept widths are not a critical concept. Well perforation points essentially gather mineralised brine from the aquifer at large, assuming the pumping rate is sufficient to create drawdown in the aquifer. • Vulcan Group has operating geothermal wells with proven drilling information and ongoing measurement of lithium grades, within the Insheim and Landau licences in the core of the URVBF. • With respect to the geothermal well data used, all engineering aspects of the wells are documented. The Mineral Resources CP has a good indication of the true vertical depths of the perforation windows used to sample and pump brine from the Permo-Triassic aquifers to the surface.
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.	• The current associated News Release and previous News Releases by Vulcan Group include explanatory figures that were used in reporting of Project information to support respective Mineral Resource Estimation disclosures. • All map images include scale and direction information such that the reader can properly orientate the information being portrayed.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and	• Reporting of exploration results is presented in the associated News Release and in the Technical Reports associated with Vulcan Group's URVBF Exploration Licences, including Mannheim.

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Criteria	JORC Code Explanation	Commentary
	high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• There are no outlier analytical results in the geochemical dataset used to evaluate the lithium concentration of Permo-Triassic aquifer brine. The lithium brine values, within analytical error margins, are interpreted to be relatively homogenous in the vicinity of Vulcan Group's Exploration Licences, as informed by brine analytical data assembled by Vulcan Group.

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.	• A substantive amount of historical data was used to investigate and characterise the configuration and hydrogeological properties of the Permo-Triassic aquifers. These aquifers include the Buntsandstein Group, Rotliegend Group (where present) and Muschelkalk Group. Hydrogeological properties include porosity and permeability.
		• Historical geochemical data were used to assess the lithium concentration in Permo-Triassic aquifer brine. A total of 43 historical brine analysis records were compiled. These historical data were verified by Vulcan Group, and it is the opinion of the Mineral Resources CP that:
		  ○ The Permo-Triassic aquifer is relatively homogeneous in terms of lithium concentration within the extent of Vulcan Group's Mannheim licence.
		  ○ The verification of historical geochemical results produced a geochemical dataset that is adequately reliable for inclusion in the current Mineral Resource Estimation.
		  ○ Numerous geothermal, or oil and gas wells, were historically drilled by companies other than Vulcan Group within the boundaries of the URVBF licences.

Further work	• The nature and scale of planned further work (eg 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 planned in the Mannheim licence area includes the following:
		  • Evaluate data from new wells planned in the Phase One area to gather improved reservoir data with enhanced well logging, well tests, and core data which will further improve the URVBF geomodel.
		  • From new wells in Phase One, validate the flow rate assumptions for brine production and re-injection further to the data available from the existing Insheim and Landau wells. Further, utilize the data from the new flow tests and pressure transient analysis to validate assumptions for lithium concentrations in the brine, compositional analysis of the produced fluids, and reservoir behaviour.
		  • Conduct seismic re-processing for the Mannheim/Weinheim 3D seismic to further improve the seismic image.

Criteria	JORC Code Explanation	Commentary
		• Re-interpretation of challenging borehole image logs from Brühl GT1 will be attempted. • Airborne full tensor gravimetric and magnetic measurements over Mannheim licence are planned for later in 2025. • Propose exploration doublet within Mannheim licence area. • Prepare a field development plan appropriate for the Mannheim area based on the Phase One design.

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ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	JORC Code Explanation	Commentary
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource Estimation purposes. • Data validation procedures used.	• A review of compiled data was conducted by the Mineral Resource CP who, to the best of their knowledge, can confirm the data was generated with proper procedures, has been accurately transcribed from the original source and is suitable for use in the Mineral Resource Estimation. • Numerous hydrodynamic property studies and data were compiled from throughout the URVBF by Vulcan Group, to support the selection of appropriate values for Effective Porosity (Phie) and Net to Gross ratio (NTG) to use in Mineral Resource Estimation. In the opinion of the CP, these studies, and the Mineral Resource Estimation parameters that were derived them, are reasonable and appropriate. • The Mineral Resources CP is satisfied with the integrity of the chemistry, geological and hydrodynamic datasets and information sources used to estimate Mineral Resources.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The Mineral Resources CP has not visited the Mannheim licence area. The Mannheim geothermal lithium project is in early stages of development and does not have any structures or facilities located in the licence area at this time. • For previous Vulcan Group Mineral Resource estimation reporting, the CP's have visited the Vulcan Group facilities and office on the days of July 30-31, 2024, and November 8-10, 2022.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource Estimation. • The use of geology in guiding and controlling Mineral Resource Estimation. • The factors affecting continuity both of grade and geology.	• The new 3D interpreted seismic data has enabled an improved structural model for Mannheim which identified additional fault structures. • The fault/fracture zones were distinguished in the seismic profiles. The vertical displacement of the fault zones on the seismic profiles enabled definition of the activity level of the fault zone, with many interpreted to be active. The fault zones were picked only where they could be positively identified in the seismic lines and the faults were correlated in consideration of their offset, dip angle and depth. • The vertical displacement of the fault zone on the seismic profiles was also used to make calculated inferences on the horizontal width of the fault zone in the geological model.

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Dimensions</td><td>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>The geometry of the Permo-Triassic strata in the URVBF has a gentle northward dip against the Base Tertiary unconformity which leads to gradual erosion of pre-Tertiary strata. This mostly affects Keuper and Muschelkalk which are completely eroded in the northwestern part of the AOI.
Buntsandstein is buried at depths between 3200 m (Northwest of licence area) and 4000 m TVDSS (Southeast of licence area) with an average thickness of 420 m. In the northwestern part, total Buntsandstein thickness is reduced to 300m, with the uppermost part of the Buntsandstein formation being completely eroded. Based on the available seismic image, Buntsandstein appears to lie directly on top of Basement suggesting no Rotliegend to be present within the Mannheim licence area. This, however, has to be confirmed by a yet to be drilled exploration well and it is possible that remnants of Rotliegend that are seismically indistinct are indeed present.</td></tr>
<tr><td>Estimation and modelling techniques</td><td>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
The availability of check Estimates, previous Estimates and/or mine production records and whether the Mineral Resource Estimate takes appropriate account of such data.
The assumptions made regarding recovery of by-products.
Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</td><td>The Lithium Mineral Resource Estimation is defined as the summation of the following, for all unique units within the Mannheim Licence:
Total Volume of the Brine-Bearing Aquifer (GRV) x Average Effective Porosity (Phie) x Average Net to Gross (NTG) x Average Concentration of Lithium in the Brine (C).
The parameter values used in the Mineral Resource Estimate are summarised in the table below and the results of Mineral Resource Estimate by Classification.
<table>
<tr><th>Licence</th><th>Reservoir</th><th>Classification</th><th>GRV</th><th>Average NTG</th><th>Average Phie</th><th>Average Lithium</th><th>Elemental Lithium in Place</th><th>LCE</th></tr>
<tr><td></td><td></td><td></td><td>km^3</td><td>%</td><td>%</td><td>mg/L</td><td>kt</td><td>kt</td></tr>
<tr><td>Mannheim</td><td>BST</td><td>Indicated</td><td>11</td><td>90</td><td>10</td><td>155</td><td>154</td><td>820</td></tr>
<tr><td></td><td>BST, MUS, BM</td><td>Inferred</td><td>41</td><td>83</td><td>8</td><td>155</td><td>452</td><td>2,405</td></tr>
</table>
Note 1: Mineral Resources are not Ore Reserves and do not have demonstrated economic viability.
Note 2: The weights are reported in metric tonnes (1,000 kg or 2,204.6 lbs). Numbers may not add up due to rounding of the resource value percentages.
Note 3: Reservoir abbreviations: MUS – Muschelkalk Formation, BST – Buntsandstein Group; BM– Basement.
Note 4: To describe the resource in terms of industry standard, a conversion factor of 5.323 is used to convert elemental Li to Li2CO3, or Lithium Carbonate Equivalent (LCE).
Note 5: NTG and Phie averages have been weighted to the thickness of the reservoir. These averages are consolidations of multiple local zones and</td></tr>
</table>

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Criteria	JORC Code Explanation	Commentary
	• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource Estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	*therefore multiplied together will not equate to the global elemental lithium values presented. The elemental lithium values presented are determined separately using detailed data for each zone and then summed together to show a total value for the purposes of this summary table.* *Note 6: GRV refers to gross rock volume, also known as the aquifer volume. GRV values presented in this table are rounded to the first significant figure for presentation purposes. The elemental lithium values presented are calculated using GRV values that have not been rounded.* *Note 7: Mineral Resources are considered to have reasonable prospects for eventual economic extraction under current and forecast lithium market pricing with application of Vulcan Group's A-DLE processing.* *Note 8: The values shown are an approximation and with globalised rounding of values in the presented summary table as per JORC guidelines, cannot be multiplied through to achieve the Mineral Resource Estimated volumes shown above.* • The workflow implemented for the calculation of the Mannheim lithium-brine Mineral Resource Estimations included the following steps: • Based on seismic information, the geometry of the top and bottom surfaces of the Muschelkalk and Buntsandstein were defined as well as 100 m of Basement • Based on seismic information, the faults within the Muschelkalk, Buntsandstein, and Rotliegend (where resolvable) were defined. • A conservative Fault Damage Zone (FDZ) half-width of 200m was defined for all faults based on the average displacement across the faults within the URVBF. • Estimation of volumes for applicable matrix bodies (Buntsandstein only) and FDZs within applicable geological units (depending on licence). • Identification of applicable Effective Porosity and Net to Gross Values for each of the volumes Estimated above. The Effective porosity was based on wireline well log data of three wells within the URVBF (Appenhofen 1, Offenbach GT1, and Brühl GT1) as well as published porosity and permeability core plug measurement data within the URVBF. In total, there are over 300 effective porosity measurements from core and outcrop analysis, and over 250 permeability measurements and/or interpretations for the Buntsandstein Group. Data points for the Rotliegend group include 62 core plug porosity measurements, as well as over 550 permeability measurements from core plugs. Porosity versus permeability plots using these data help determine cut-

Criteria	JORC Code Explanation	Commentary
		offs for effective fluid flow within reservoirs (Canadian Oil and Gas Evaluation Handbook, 2005; Nelson, 1994) achievable because of the availability of production data from producing geothermal and oil and gas wells within the URVBF (Landau 207, 211, Appenhofen, Römerberg A to E). For the Permo-Triassic sediments in the URVBF, a porosity cut-off of 5 %, equivalent to a permeability cut-off of 0.02 mD, is reasonable for significant fluid flow to occur. Net thickness is then determined from this relationship by applying the 5 % effective porosity cut-off to the gross interval thickness. Determination of applicable average lithium concentration (C) for each licence, based on Vulcan Group's brine sampling and interpretation program. Determination of average grade (C) is discussed under "Data Aggregation" Methods" in Section 2 of this JORC Table. ○ Spreadsheet compilation of all volumes and applicable parameter values, followed by resource calculation, according to the equation noted above. ○ Confirmation of reasonable prospects of eventual economic extraction for the identified resource zones. • The current Mineral Resource Estimation for Mannheim replaces and supersedes the previously published estimates. • The only element being estimated is lithium, and consideration of deleterious elements is beyond the scope of this Project and Mineral Resource Estimate. Determination of such factors is dependent on application of specific mineral processing and lithium recovery flowsheet assessments and comprehensive market studies. Based on the lithium extraction piloting that Vulcan Group has conducted since April 2021, no deleterious elements have been noted which have a materially negative effect on Vulcan Group's sorption-type lithium extraction process. • The average lithium-in-brine concentration used in the Mineral Resource Estimations is 155 mg/L. • No top cuts or capping upper limits have been applied, or are deemed to be necessary, as confined lithium brine deposits typically do not exhibit the same extreme values as precious metal deposits. This statement is applicable to the Permo-Triassic aquifer lithium brine data in this study. • A cut-off grade / resource quantity analysis was not strictly applicable to the resource, due to the use of average grade in the static resource estimate. However,

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Criteria	JORC Code Explanation	Commentary
		it is noted that a grade for economic extraction of 100 mg/L has been established on a provisional basis, and that all resources are currently estimated to exceed that grade. • The unit volumes, parameter values, and resource Estimate calculations were checked and validated by the Mineral Resources CP. In the opinion of the CP, the volumes, parameter values and calculations are appropriate and provide Mineral Resource Estimate results that are reasonable for the assigned resource categories.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Not applicable. The lithium resource in the URG is a brine-hosted resource.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• Cut-off considerations are discussed above.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• The mining method for lithium from Mannheim is through lithium extraction from geothermal brine from deep wells and utilizing a Direct Lithium Extraction (DLE) process. It is the CPs opinion that geothermal facilities and lithium brine extraction operations represent a feasible co-production opportunity that has potential for future economic viability. • The methods for lithium extraction have been tested by Vulcan Group at a pilot plant demonstrating the sorption process on its geothermal brine from Insheim operating geothermal facility, since April 2021 and a Demo plant at Landau since 2023. The results of these operations back up the assumptions used in Vulcan Group's Phase One design and provide the basis for assumptions and predictions regarding extraction technologies.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral	• Vulcan Group uses an Adsorption-type DLE (A-DLE) process, similar to commercially operating A-DLE processes used on salar-type brines in Argentina and China. Because of environmental and meteorological considerations, Vulcan Group uses geothermal heat, instead of fossil gas and solar evaporation ponds, to drive the adsorption process and drive the subsequent concentration of the lithium eluate respectively. • Vulcan Group's lithium engineering team designed, and has since operated, a lithium extraction pilot plant demonstrating the sorption process on its geothermal

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Criteria	JORC Code Explanation	Commentary
	Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	brine since April 2021 and a Demo plant since 2023. The results of these operations back up the assumptions used in Vulcan Group's Phase One design and provide the basis for assumptions and predictions regarding metallurgical amenability. • The Mannheim future development is planned to be based on the similar design to the Phase One design for commercial operation where brine from the geothermal production wells feeds one lithium extraction plant (LEP), to produce lithium hydroxide monohydrate (LHM).
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields Project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• German Federal and State policy is targeting carbon neutral power and heating production, and EU policy targets the onshoring and bolstering the sustainability of lithium and other critical raw materials production. It is the opinion of the CP that combined geothermal energy and lithium extraction projects (such as Vulcan Group's Project) have the necessary environmental credentials to enable stakeholder support. • Vulcan Group's process has been designed to be very low waste and circular, in that all brine produced is re-injected into the reservoir, in materially the same state but just with most of the lithium extracted. • The surface footprint of planned operations, being geothermal wells and plant, and lithium extraction plants, are very small compared to a traditional mine or salar operations, and sites will be selected for location on industrial or farming land. • It is therefore likely that Vulcan Group will have a low environmental impact, and in fact will have a net positive effect on the climate by decarbonising the lithium supply chain and energy supply.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	• Bulk density is not applicable, or necessary to be applied, to the liquid, brine-hosted resource. • Details of the resource calculations are provided above.

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Criteria	JORC Code Explanation	Commentary
	• Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The Vulcan Group Mannheim licence area has reasonable prospects for eventual economic extraction based on aquifer geometry, delineation of fault zones using new 3D seismic data, previous 2D seismic data, brine volume, brine composition, hydrogeological characterisation, porosity, fluid flow, and the advancement of Vulcan Group's lithium adsorption technology and subsequent test work through their pilot plants through thousands of hours of continuous processing data, and thousands of cycles of test work. • The updated Mannheim lithium Mineral Resource Estimation are classified as Indicated and Inferred Mineral Resources, depending on location and availability of data. • Pertinent points to support an Indicated and Inferred Mineral Resource classification within the Mannheim area include: 1) a greater level of confidence in the subsurface geological model due to Vulcan Group's acquisition, processing and interpretation of new 3D seismic data, 2) knowledge of Vulcan Group's commissioned lithium adsorption mineral processing test work and results, following thousands of hours of test work conducted over the course of 3 years, 3) Vulcan Group's acquisition of production/re-injection wells in the core of the field at Insheim, and agreement to access other production/re-injection wells at the neighbouring Landau geothermal plant, which has resulted in hundreds of additional analyses from live geothermal brine, and 4) Vulcan Group's integration of extensive reservoir production simulation into its models. • The Mineral Resource Estimate has been prepared by a multi-disciplinary team that include geologists, reservoir engineers, hydrogeologists, geothermal specialists, and chemical engineers with relevant experience in Permo-Triassic and other brine geology/hydrogeology and lithium brine processing environments. There is collective agreement that the Vulcan Group Project has reasonable prospects for economic extraction at current and forecast lithium market pricing levels. Technical Report author Mike Livingstone, P. Geo takes responsibility for this statement, as Mineral Resources CP.

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Criteria	JORC Code Explanation	Commentary
Audits or reviews.	• The results of any audits or reviews of Mineral Resource Estimates.	• A previous audit of the lithium Mineral Resource estimates for the Mannheim licences was conducted and reported in earlier reports.
Discussion of relative accuracy/confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource Estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• In the opinion of the Mineral Resources CP, the Mannheim Indicated and Inferred lithium Mineral Resource Estimations are reasonable for the Permo-Triassic aquifer within the Mannheim licence area. • Risks and uncertainties as they pertain to the lithium Mineral Resource Estimate include: ○ Risks and uncertainties associated with deep geothermal brine exploration are linked to the high cost of deep well drilling. As exploration results become available and development continues, incorporation of associated results will reduce inherent Mineral Resource Estimation uncertainty and Project risk. ○ The lithium concentrations used for the basis of the Mannheim Mineral Resource Estimation may be different than assumed. Confirmation will not be possible until a new well or wells are drilled and tested within the Mannheim licence area. ○ The reader should be aware that the reality of any geothermal or lithium brine recovery program is that the extent of brine recovery from the resource estimate zone will be a function of the design of the recovery/reinjection system and the connectivity of the subsurface brine zones. To some extent, it will not be feasible to capture all brine from the subsurface strata included in the mineral resource estimate. ○ The planned brine production system will be based on doublets with a production well and reinjection well. It is noted that dilution factors caused by injecting the spent brine into the hydraulic system could influence the operational timeline of a given well doublet, beyond the extent to which already modelled. ○ Localised high permeabilities can lead to channelling effects such that the geothermal reservoir potentially becomes inefficient in terms of capturing brine from a broader zone. Thus, the exploitation of fault zones can constitute a trade-off between high permeability and reduced reservoir volumes.

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