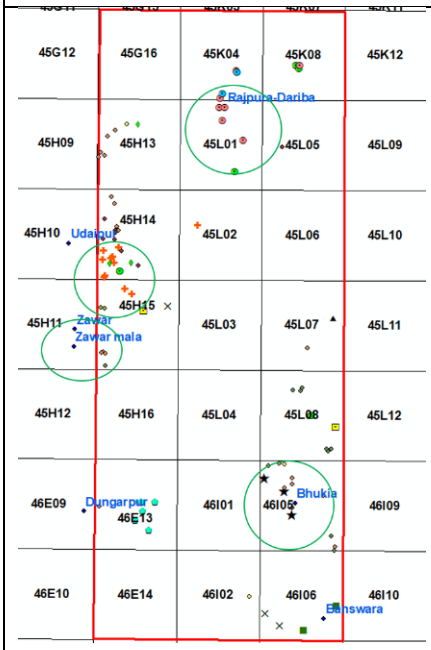
Background Data:

Area: The proposed area of 14780 sq. km. for Hackathon covers part of south Rajasthan and is known for multi-metal / element deposits of different ages. The block coordinates covering 21 toposheets is as follows:

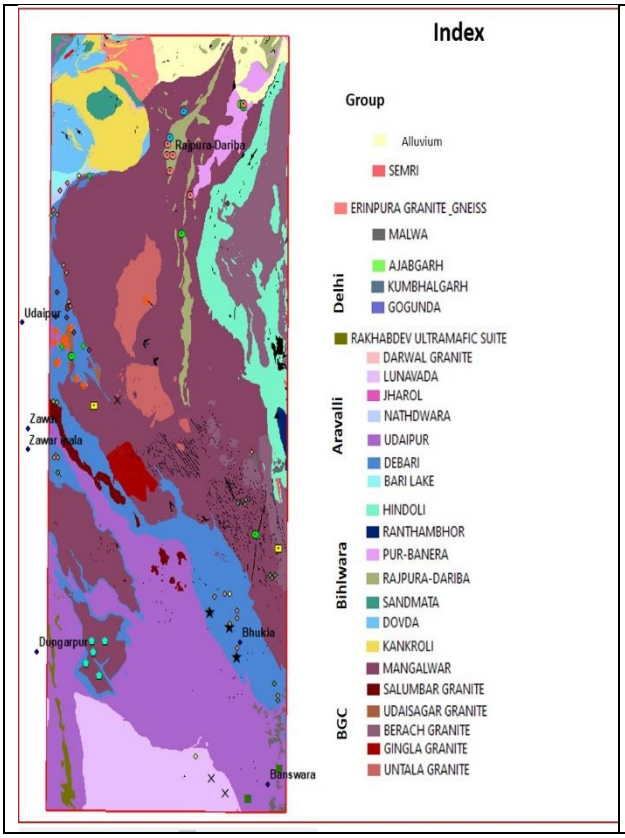
- ✓ A: 25° 15′ 00′′N 73° 45′ 00′′E
- ✓ B: 25° 15′ 00′′N 74° 30′ 00′′E
- ✓ C: 23° 30′ 00′′N 74° 30′ 00′′E
- ✓ D: 23° 30′ 00′′N 73° 45′ 00′′E



Geology of Rajasthan: Rajasthan, located in the north-western part of the Indian Shield, is endowed with geological diversity as well as complex and episodic metallogeny. The Archaean basement rocks of Bhilwara Supergroup include Sandmata Complex, Mangalwar Complex and Hindoli Group. They comprise in general, granulite-gneiss; amphibolite, metapelite, paragneiss, calc-silicate rocks metavolcanic and metagreywacke. The Archean rocks are intruded by the Untala-Gingla Granite, Berach Granite, basic and ultramafic bodies.

Over Archaean basement, rests Proterozoic supracrustals namely Aravalli and Delhi supergroups, Jahazpur, Rajpura-Dariba, Pur-Banera and Sawar Groups. The Aravalli Supergroup is represented by clastic sediments with minor chemogenic and organogenic assemblages with interlayered basic volcancics, whereas the Delhi Supergroup comprises mainly carbonates, metavolcanics, metasammites and metapelites, intruded by magmatic rocks of Phulad Ophiolite Suite and syn-orogenic granites of Sendra - Ambaji, Bairath, Dadikar, Harsora, etc.

These Proterozoic supracrustals host Gold, Lead, Zinc and Copper and REE mineralization.



Geology of the area demarcated for Hackathon:
Primarily the area exposes the rocks of Archean basement and Proterozoic supracrustals along with intrusive granites and ultramafics. Eastern and central part of the area consists of Bhilwara Supergroup primarily consisting of gneiss and migmatites of the Mangalwar Complex and low-grade rocks with volcanics of the Hindoli group. The southern and south-western part contains rocks of the Aravalli Supergroup, basal part of which exposes metavolcanics overlain by thick pile of metasediments. Aravalli sequence is juxtaposed with Archean Bhilwara Supergroup having ductile shear zone separating the two. In the Aravalli Supergroup of rocks, copper and gold occurrences are reported at number of places along 150 km long strip from Nathadwara in the north to Ghatol in the south. Berach granite and related quartz reefs with N-S strike occupy central part of the area. Rocks of Rajpura-Dariba Group are exposed in the south western to south central part within a narrow linear stretch of around 25 Km from Tana to Bhinder. The south western most corner of the area has exposed older Untala and Gingla granites. The area exhibits different metallogenic belts like, Salumbar Bhukia Ghatol, Rajpura-Dariba-Bethumbi, Pur-Banera, Zawar, Jhamarkotra, Banswara related to copper, gold, silver, lead-zinc, chromium, nickel, manganese, PGE, iron, graphite and other important commodities like phosphorite, baryte etc. Moreover, significant geologic features like Phulad Ophiolite Suite, Rikhabdev Ultramafic Suite and Berach Granite are also present in this segment.

Data Provided:

Geology:

The layers provided in shape files and pdfs

Geochemical Data:

Geochemical data is available from two domains:

- Stream sediments: Collected as part of National Geochemical Mapping Program (NGCM), the main media of NGCM sampling is stream sediment material in 2 km x 2 km cell (unit cell). All samples are analysed for major oxides and trace elements using 'Clarke's value' as the detection limit. The layers provided are tabulated below:
- Petrochemical Data: Derived from analyses of 'bed-rock' samples from mapping and exploration projects. Each of the available data are provided in the respective reports.

Exploration data:

Different stages of exploration data are available, which include G2, G3 & G4. Data set include

- Lithologs, details about mineralized zones along with location and maps of different scales.
- Status map of the explored blocks
- Reports: In PDF format are being provided.

Each of the available data are provided in the respective reports.

Geophysical data:

The geophysical data are provided in the form of (a) ground gravity data derived from National Geophysical Mapping Program (NGPM) and (b) Aeromagnetic Data.

(a) Gravity data was collected along the available roads and cart tracks maintaining a station density of one station in 2.5 sq. km grid using gravimeter & DGPS sensors. The DGPS data were taken exactly at the location of gravity stations. The DGPS position was kept in an unobstructed view of at least ten satellites in the sky with a good geometric distribution above 15° cut-off angle and away from probable reflective areas such as metallic objects, fences, power lines, dense forest, canopy or buildings and vehicles to avoid the multi path signal receiving. The distance between the DGPS base and rover were kept 10-15 km and allowing a sufficient observation time of 10-15 minutes to collect a high quality elevation data. The data will be provided in grid format along with 13 nos. reports pertaining to 21 toposheets and some adjacent areas.

(b) **Aeromagnetic Data** The data in this area was acquired at different time by different agencies from 1968-69 to 2019-20.OHR Block: The aeromagnetic data in this block was acquired in 1968-69 under the project Operation Hard Rock with a line spacing of 500 m at the survey altitude of 61 m.

BRGM Block: The aeromagnetic data in this block was acquired in 1971-72 under the project Operation Hard Rock with a line spacing of 500 m at the survey altitude of 120 m.

TOASS-1: The aeromagnetic data in this block was acquired in 1994-96 through the inhouse TOASS system with a line spacing of 500 m at the survey altitude of 120 m.

The aeromagnetic data of these blocks was brought to a common height of 122 m and was merged together to create a single grid under the Rajasthan aero-magnetic data compilation project during 2010-12.

TOASS-2: The aeromagnetic data in this block was acquired in 2019-20 using the inhouse TOASS system with a line spacing of 300 m at the survey altitude of 80 m.

Theme	Type of layer / data	Format	Remarks
Geology	Lithology	shapefile	50K
	Structure	shapefile	50K Lineament, foliation, axial trace, fold, Fault, Shear zone, bedding, Dyke,
	Geomorphology	shapefile	50K (NGLM)
	Mineralisation	shapefile	Mineral occurrence and status map of exploration
	Exploration report	PDF	M:II- 42 (G4- 20, G3-14, G2- 3, unclassified-5)
	STM report	PDF	STM- 12 (with coordinates)

Theme	Type of layer / data	Format
Exploration report	PDF	M:II- 42 (G4- 20, G3-14, G2- 3, unclassified-5)

Theme	Type of layer / data	Format
Exploration report	PDF	M:II- 42 (G4- 20, G3-14, G2- 3, unclassified-5)
STM report	PDF	STM- 12 (with coordinates)