

Ministry of Mines
National Mineral Exploration and Development Trust
Minutes of 10th Joint Meeting of Technical-cum-Cost Committees held on 24th
August, 2026 through video conferencing mode

The 10th Joint meeting of Technical Cum-Cost Committees (TCC-I & TCC-II) of National Mineral Exploration and Development Trust (NMEDT) was held on 24th August, 2026 in VC mode. The meeting was combined chaired by Dr. S. Ravi, Dy. Director General, Geological Survey of India (GSI) and Chairman, TCC-I and Shri Pradeep Singh, Addl. Director General, Geological Survey of India (GSI) and Chairman, TCC-II.

The list of participants is provided in Annexure-1.

Dr. S. Ravi, Chairman, TCC-I, extended a warm welcome to all members and apprised them of the purpose of the meeting. Shri Pradeep Singh, Chairman, TCC-II, also extended a warm welcome to all members of the committee and participants.

10.1: Review of Ongoing Exploration Projects in Siwana Ring Complex

Agenda 10.1.1. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 1 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s M/s Hindmetal Exploration Services Pvt. Ltd.]

1. The agency informed that the block covers 2.00 sq. km, with exposed outcrops comprising rhyolitic rocks intruded by later-phase felsic and basic dykes. The exposed volcanic flows generally dip 15°–25° towards SE (150°–170°).
2. The agency informed that desktop studies of historical data, camp establishment, geological mapping of the 2.00 sq. km area at 1:2000 scale, and drone-based topographic survey and contouring have been completed. A joint inspection with the Balotra Forest Department for forest demarcation has also been completed.
3. The agency informed that desktop studies of historical data, camp establishment, geological mapping (2.00 sq. km at 1:2000 scale), and drone-based topographic survey and contouring have been completed. A joint inspection with the Balotra Forest Department for forest demarcation has also been completed.
4. The agency informed that detailed channel planning was undertaken after geological mapping and integration of historical data, and the channel sampling methodology was discussed with the GSI team during a joint field visit. Nine flows have been identified across the three blocks, along with rhyolitic and basic dykes.
5. Channel sampling (78 samples, with 5–6 samples per channel) and BRS sampling (22 samples) have been completed in the block. Phase-I drilling has commenced with two rigs deployed, and the first borehole of 150 m against the planned 750 m has been completed. Core logging and sampling are in progress.
6. The agency informed that 100 samples (22 BRS and 78 channel samples) have been dispatched for laboratory analysis and the results are awaited. No analytical results for the BRS or channel samples have been received so far.
7. The agency presented the interpretation of airborne magnetic and radiometric data from NGDR, indicating a low magnetic zone in the central part of the block and a moderate thorium trend, with the thorium anomaly occurring within the magnetic-

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low zone. The agency recommended high-resolution ground magnetic and radiometric surveys to delineate the boundaries of magnetic sources and establish the relationship between REE mineralisation and thorium anomalies.

8. The Committee reviewed the progress of work and observed that, despite these projects being of top priority, the progress is slow and not satisfactory.
9. The Committee enquired about the channel sampling area and analytical results and noted with concern that, although sampling has been completed, the BRS and channel samples are yet to be analysed, leaving no analytical data available for review.
10. The Committee advised the agency to deploy additional rigs, manpower and machinery to ensure timely completion of all three projects.
11. The Committee observed that the number of samples is limited and can be analysed expeditiously, and advised the agency to opt for NABL-accredited laboratory analysis for timely completion of the analytical work.
12. The Committee directed the agency to submit, within 15 days, a written progress report, action plan and timeline for all three blocks, clearly indicating the targets achieved against the allotted timeline, and to adhere strictly to the submitted timeline.
13. The Committee advised that, with effect from 15.09.2026, the agency shall appear for regular progress review before TCC-I/TCC-II, as applicable, for rigorous monitoring of the work. The agency was given one month to demonstrate tangible progress/results.

Recommendations of TCC:

The Committee advised the agency to deploy additional rigs, manpower and machinery to ensure timely completion of the project and to get the BRS and channel samples analyzed through NABL-accredited laboratories. The agency shall submit, within 15 days, a written progress report along with a time-bound action plan and shall appear for regular review before TCC-I/TCC-II/Joint TCC from 15.09.2026 onwards.

Agenda 10.1.2. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 2 block (2 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s Mining Tech Consultancy Services Limited]

1. The agency informed that detailed geological and geophysical data review, ASTER-based remote sensing analysis, and drone-based topographic survey have been completed. Geophysical survey parameters were finalised in consultation with GSI, Western Region.
2. The agency presented the reinterpretation of aeromagnetic data, indicating an E–W magnetic trend of 1,100–2,300 nT and a N–S linear anomaly in the western part. Source depths were estimated at approximately 78 m, 296 m and 2.15 km.
3. The agency presented the reinterpretation of gravity and radiometric data and integrated K-means clustering, which identified four geophysical domains, including anomalous patches potentially representing alteration, intrusions or mineralisation.


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4. The agency informed that 1:2,000-scale geological mapping of the 2.00 sq. km block has been completed, and presented field observations of Flows 10, 11 and 12, comprising different varieties of rhyolite.
5. The agency informed that 75 bedrock/channel samples have been collected against 100 approved samples, with analytical results available for 38 samples. TREE values range from 58.72–1,668.86 ppm, with an average of 908.67 ppm; average Y is 213.98 ppm, while Zr ranges from 98.34–2,779.55 ppm with an average of 1,393.56 ppm.
6. The agency informed that DGPS survey has been completed for 4 of 28 block boundary/borehole points. Trenching (50 cu. m) and Phase-I drilling (800 m) are yet to commence, while laboratory analysis is complete for 38 of 100 primary samples and other laboratory studies are pending.
7. The agency informed that the in-house drilling team has completed the site visit and rig mobilisation for Phase-I drilling is planned for the last week of August 2026, with drilling to commence in non-forest, soil-covered areas. 5 Phase-I and 19 Phase-II boreholes are proposed on a 400 m × 200 m grid, with borehole locations and drilling plan to be discussed with GSI, Western Region.
8. The agency informed that the ground magnetic survey comprising 13 profiles at 150 m line spacing and 60 m station spacing will be completed and interpreted, and the remaining samples analysed, by the first week of September 2026. Phase-I drilling is planned to commence in the first week of September 2026, with borehole locations finalized based on GSI recommendations.
9. The agency requested approval to replace the proposed trenching with additional channel sampling, as trenching is considered unsuitable due to the block being predominantly soil-covered.
10. The Committee reviewed the progress and observed that Phase-I drilling has not commenced, despite two-thirds of the scheduled timeline having elapsed, with only four months remaining, indicating significant delay in project execution.
11. The Committee observed that approximately 20% of the block falls under forest area, while the remaining 80% is soil-covered, and noted that forest clearance cannot be cited as a reason for delay in the non-forest area.
12. The Committee observed that the soil-cover thickness has not been established and borehole planning is yet to be finalised, indicating that the approach adopted by the agency requires improvement.
13. The Committee enquired about the sequence of BRS and channel sampling. The agency informed that the initially collected samples were discarded and channel samples were subsequently collected, with analytical results received only one day prior to the meeting.
14. The Committee advised the agency to consult GSI, Western Region, and finalise the borehole plan for Phase-I drilling, with a proposed 400 m × 200 m drilling grid.
15. The Committee agreed to drop the trenching component from the project.

Recommendations of TCC:

The Committee recommended that the agency expedite Phase-I drilling, finalise the borehole plan in consultation with GSI, Western Region, and adhere to a time-bound schedule for completion of the project. The Committee also agreed


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to the removal of the trenching component.

Agenda 10.1.3. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 3 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s United Exploration India Pvt. Ltd.]

1. The agency informed that out of the 2.00 sq. km block, ~0.75 sq. km falls in forest area. The Form-C application for forest clearance was submitted through PARIVESH on 01.04.2026, compliance of EDS was submitted on 10.06.2026, and field inspections were completed in July 2026; forest clearance is awaited.
2. The agency informed that Phase-I geophysical desktop study, camp establishment, 1:2000-scale geological mapping with contouring, and drone-based topographic survey (2 m contour interval) over the 2.00 sq. km block have been completed.
3. The agency presented the geophysical interpretation, identifying a prominent E–W to ENE–WSW magnetic belt and magnetic highs associated with intrusive contacts, dyke corridors and fracture zones. The southern part of the block, particularly structurally intersected zones, was identified as the prime target for REE and associated rare-metal mineralization.
4. The agency informed that the northern part is predominantly covered by aeolian sand and soil, requiring subsurface drilling, while the southern part exposes basalt, rhyolite and pyroclastic units, intruded by mafic and felsic dykes. The flow units generally dip 20°–25° southwards, with Flow 7 having the maximum lateral extent (~300 m).
5. The agency informed that 73 bedrock and 38 channel samples have been collected and verified by GSI. Chemical analysis and petrographic studies are in progress, while trenching, DGPS survey, Phase-I drilling (800 m/5 boreholes) are yet to commence.
6. The agency presented the proposed Phase-I borehole locations and the ground magnetic survey layout, with a 150 m profile spacing and 60 m station spacing.
7. The Committee reviewed the progress and observed that the project is delayed, with the ground geophysical survey and analysis of collected samples still pending.
8. The Committee observed that the agency has not yet coordinated with GSI, Western Region, and the drill-hole planning has not been discussed with GSI.
9. The Committee advised the agency to expedite the work and proactively coordinate with GSI, Western Region for finalisation of the geophysical survey and borehole plans, and to obtain approval for Phase-I drilling. An email may also be sent to GSI, SU Rajasthan regarding the status of the geophysical survey.
10. The Committee directed the agency to submit a detailed action plan and complete Phase-I drilling expeditiously, with the project to be closely monitored for timely execution.

Recommendations of TCC:

The Committee recommended that the agency expedite the work, finalise the geophysical survey and borehole plans in consultation with GSI, Western Region, obtain approval for Phase-I drilling, and complete the drilling expeditiously. The

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agency shall submit a detailed action plan, and the project shall be closely monitored by the Committee for timely execution.

Agenda 10.1.4. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 5 block (1.98 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s GeoExpore Pvt. Ltd.]

1. The agency informed that geophysical overlay analysis, geological mapping (1.98 sq. km), BRS/channel sampling, and trenching have been completed. Drilling is in progress with 362.43 m completed against 800 m. ICP-MS analysis of 100 samples is completed.
2. The agency presented the integrated radiometric and magnetic interpretation, delineating two target zones, T-A along the western margin (~221 nGy/h) and T-B in the central-northern part (~205 nGy/h), both coinciding with magnetic highs. A prominent ENE–WSW magnetic gradient along the southern margin was interpreted as the ring-margin contact.
3. The agency presented the detailed geological mapping, identifying rhyolite Flows 14, 15, 16, 17, 22, 23, 24 and 25, tuff, alkali olivine and amygdaloidal basalt, an E–W rhyolite sill, and NW–SE felsic dykes, along with structural features including faults, veins and slickensides.
4. The agency presented geochemical results of 30 bedrock, 45 channel and 25 trench samples, with 43 samples (57%) recording TREE >1,000 ppm; Flows 15 and 17 showed the highest values, reaching 6,509.63 ppm, while Zr values were ~2,000 ppm. Among the trenches, Trench-5 recorded the highest TREE value of 6,629 ppm.
5. The agency informed that drilling of BH-01 (150 m) and BH-02 has been completed, while BH-04 and BH-05 are under progress. The boreholes intersected aeolian sand, banded/porphyritic/brecciated rhyolite and amygdaloidal basalt, with brecciation, calcite veining, limonitisation and epidotisation observed in Flow 17.
6. The Committee noted that approximately 0.5 m of soil cover was observed in trenches, while thicker aeolian horizons were encountered in boreholes. It was also observed that TREE values decrease in areas where felsic dykes are present; the dykes should be represented vertically in the profile sections.
7. The Committee advised core sampling at 3 m intervals and recommended that the remaining three boreholes be drilled up to the basalt, with cumulative borehole depths adjusted based on the lithological conditions encountered.
8. The Committee advised the agency to complete Phase-I drilling within one month and return for review with the analytical results of the completed borehole samples.
9. The Committee advised the agency to coordinate with GSI, Western Region, Jaipur, for the geophysical survey after obtaining the borehole sample results.
10. The Committee suggested using handheld XRF for preliminary/immediate results to facilitate further planning, considering its comparable results and faster turnaround compared to ICP-MS.


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Recommendations of TCC:

The Committee advised the agency to complete Phase-I drilling within one month by completing the remaining three boreholes up to the basalt, with core sampling at 3 m intervals, and to submit the analytical results of the completed borehole samples for review.

The agency was further advised to coordinate with GSI, Western Region, Jaipur, for undertaking the geophysical survey based on the results of the borehole investigations.

Agenda 10.1.5. Preliminary Exploration (G3) for REE and associated critical minerals in the modified NB 9 and NB 10 block (2.85 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: Mineral Exploration and Consultancy Ltd.]

1. The agency informed that desktop study and 1:2000-scale geological mapping over 2.85 sq. km have been completed, while the topographic survey is in progress. Channel sampling and ICP-MS analysis of 25 samples have been completed, whereas the remaining channel/trench samples, borehole core sampling (250), and external check samples (40) are yet to be taken up.
2. The agency informed that Phase-I drilling (5 boreholes; 125–150 m depth each; 800 m total) is yet to commence due to the ongoing tendering process, wherein only one bidder participated. The agency requested permission to undertake the allotted drilling component in-house instead of through outsourcing.
3. The Committee informed that, as decided in the last PSC meeting, interchange of outsourced and in-house work components should be discouraged; accordingly, the in-house drilling component cannot be recommended.
4. The agency presented field observations indicating that REE mineralization is associated with evolved, late-stage alkaline/peralkaline rocks, with fine- to medium-grained granite showing higher REE concentrations than coarse-grained porphyritic granite.
5. The agency presented geochemical results of 25 channel samples from the exposed in the northern part of the area, with TREE+Y values ranging from 306.37 to 2,874.02 ppm (mean: 1,360.78 ppm); 18 samples recorded values >1,000 ppm.
6. The Committee observed that the granites of the Siwana Ring Complex are generally not fertile, whereas the late-stage intrusions are enriched in TREE and should be identified as potential drilling targets. Agencies were advised to review relevant AMD research papers regarding microgranites.
7. The Committee advised the agency to complete Phase-I drilling within one month and present the results for review; further discussion on geophysical surveys and Phase-II drilling would be taken up thereafter.

Recommendations of TCC:

The Committee advised the agency to complete the Phase-I drilling within one month and come for review with the results, after which the geophysical survey and the Phase-II drilling will be discussed and planned.


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Agenda 10.1.6. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 11 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: FCI Aravali Gypsum and Minerals India Limited]

1. The agency informed that geophysical data reinterpretation, 1:2000-scale geological mapping with contouring over 2 sq. km, and pitting/trenching (50 cu. m) have been completed, with 70 BRS/trench samples collected against the target of 100. HR-ICP-MS analysis of 32 BRS samples and WD-XRF analysis of 20 samples have been completed, while results for 40 additional samples are awaited.
2. The agency informed that the ICP-MS work order has been placed (GeM contract dated 27.07.2026) and approval for non-forestry use of 15 ha of forest land has been granted by the Government of Rajasthan, subject to stipulated conditions. Approximately 0.1 sq. km of the block falls under forest area.
3. The agency further informed that GSI, Jaipur, approved the proposed five Phase-I borehole locations, based on integrated geological, geophysical and ICP-MS data. The Phase-I and Phase-II boreholes are planned on a 400 m × 200 m grid, with the geological map and flow nomenclature revised as suggested by GSI; the Phase-I locations were subsequently approved by the 100th TCC-I.
4. The agency informed that BH-1 drilling is in progress, with two additional rigs to be deployed next week, and that Phase-I drilling is expected to be completed within two months. Rock exposures are limited to about 0.1 sq. km, with the remaining area covered by alluvium; seven rhyolitic flows have been mapped, trending ENE–WSW to E–W and dipping generally 20–30° towards SSE–S (locally up to 60–65°).
5. The agency presented BRS geochemical results showing TREE+Y+Sc values up to 3,354 ppm (average 2,059 ppm), with LREE predominance over HREE. The analysed rocks comprise rhyolite, trachyte, trachyandesite and dacite of the high-K calc-alkaline to shoshonite series.
6. The Committee advised that the average TREE value of samples exceeding 1,000 ppm be calculated based on the actual anomalous values, rather than the average of minimum and maximum values.
7. The Committee further advised that Nb and Th concentrations be included in the analytical results.
8. The Committee observed that HREE typically constitutes about 10–15% of TREE, whereas in the Siwana Ring Complex, HREE constitutes approximately 30–35% of TREE.
9. The Committee advised the agency to complete the analysis through an external laboratory without waiting for installation of its own ICP-MS, to ensure timely progress of the work.
10. The Committee advised the agency to return for review after 1.5 months, following completion of Phase-I drilling, along with the analytical results.

Recommendations of TCC:

The Committee recommended that the agency complete the Phase-I drilling and undertake sample analysis through an external laboratory without awaiting installation of its own ICP-MS. The agency was advised to return for review in 1.5 months with the analytical results.


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The Committee further recommended that the average TREE value be calculated for anomalous samples (>1,000 ppm TREE) and that Nb and Th concentrations be included in the analytical results.

Agenda 10.1.7. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 12 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan
[Implementing Agency: Natural Resource Division, Tata Steel Ltd.]

1. The agency informed that desktop study, 1:2000-scale geological mapping and DGPS topographic survey over 2.00 sq. km have been completed. Of the 60 targeted BRS samples, 56 have been collected and analysed; trenching and trench/channel sampling could not be undertaken due to extensive soil cover.
2. The agency informed that Phase-I drilling was completed with five boreholes totalling 800 m drilling. The boreholes intersected 24–60 m of loose/weathered formation, followed by porphyritic and non-porphyritic rhyolites with felsic dykes; only Flow 26 could be tentatively identified, while the remaining flows remain unclassified.
3. The agency informed that core logging, marking and photography have been completed, while core splitting and sampling are in progress. ICP-MS analysis of 385 samples is underway, with XRF (55) and XRD (10) analyses partly pending; results will be presented after completion.
4. BRS results showed TREE+Y values of 842–5,490 ppm, with the highest values recorded in grey rhyolite, Rhyolite Flow 25 and a felsic dyke.
5. The Committee noted that Phase-I drilling has been completed, with encouraging results from felsic dykes and Flows 25 and 26. The agency requested permission to undertake the geophysical survey concurrently and proceed with forest permission for Phase-II boreholes.
6. The Committee advised the agency to characterise and group the rhyolitic flows based on lithological/mineralogical characteristics, rather than colour variation, to facilitate their identification and correlation.
7. The Committee further advised the agency to identify a suitable marker bed for correlation of the flows across the area.
8. The Committee observed that a systematic approach for identifying and correlating the different flows needs to be formulated, as correlation of flows across other blocks may otherwise be difficult.
9. The Committee advised that the geophysical survey be undertaken only after approval of the geophysical plan by GSI, in consultation with GSI, Western Region, and that the analytical results be presented to the Committee.
10. The Committee further advised the agency to use handheld XRF for obtaining preliminary analytical results.

Recommendations of TCC:

The Committee recommended undertaking the geophysical survey after approval of the plan by GSI, Western Region, and presenting the analytical results for review. The agency was also advised to use handheld XRF for preliminary analysis.


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Agenda 10.1.8. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 13 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan
[Implementing Agency: Natural Resource Division, Tata Steel Ltd.]

1. The agency informed that desktop study, 1:2000-scale geological mapping and DGPS topographic survey over 2.00 sq. km have been completed, with 46 of the targeted 60 BRS samples collected and analysed. Trenching (50 cu. m) and trench/channel sampling (40 samples) are yet to be undertaken.
2. The agency informed that Phase-I drilling was completed with five boreholes totalling 816 m. The boreholes intersected loose/weathered formations followed by porphyritic and non-porphyritic rhyolites with felsic dykes; Flows 25 and 26 were tentatively identified, while the remaining flows remain unclassified.
3. The agency informed that thick soil/unconsolidated cover (up to 56 m) in boreholes near a dried-up nala indicates possible buried palaeochannels, which may be delineated before Phase-II drilling. The agency also informed that only a magnetic survey of 250 stations/block is proposed as per the approved NQT and sought the Committee's advice.
4. BRS results showed TREE+Y values of 135–5,271 ppm, with the highest values recorded in rhyolite from the nala section, porphyritic/pinkish rhyolite, and felsic dykes.
5. The Committee noted that Phase-I drilling has been completed, with encouraging results from felsic dykes and Flows 25 and 26. The agency requested permission to undertake the geophysical survey concurrently and proceed with forest permission for Phase-II boreholes.
6. The Committee advised the agency to characterise and group the rhyolitic flows based on lithological/mineralogical characteristics, rather than colour variation, to facilitate their identification and correlation.
7. The Committee further advised the agency to identify a suitable marker bed for correlation of the flows across the area.
8. The Committee observed that a systematic approach for identifying and correlating the different flows needs to be formulated, as correlation of flows across other blocks may otherwise be difficult.
9. The Committee advised that the geophysical survey be undertaken only after approval of the geophysical plan by GSI, in consultation with GSI, Western Region, and that the analytical results be presented to the Committee.
10. The Committee further advised the agency to use handheld XRF for obtaining preliminary analytical results.

Recommendations of TCC:

The Committee recommended undertaking the geophysical survey after approval of the plan by GSI, Western Region, and presenting the analytical results for review. The agency was also advised to use handheld XRF for preliminary analysis.

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Agenda 10.1.9. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 14 block (2.42 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s Gemcokati Exploration Pvt. Ltd.]

1. Against the Phase-I NQT, mapping and survey over 2.42 sq. km, 62 BRS samples, 800 m drilling in five boreholes, 271 core samples, 50 WD-XRF samples, 10 polished thin sections, 36 check samples, and geophysical data reinterpretation have been completed.
2. Trenching (70 cu. m) remains pending, while samples for XRD analysis have been dispatched.
3. The agency presented analytical results of 271 core samples, with TREE+Y+Sc values of 114.5–4,958.42 ppm, including 139 samples exceeding 1,000 ppm; the 62 BRS samples showed 102–7,342.20 ppm, with 29 samples exceeding 1,000 ppm, along with elevated Nb (751.70 ppm), Ta (44.5 ppm), Sn (145.20 ppm) and Li (214.7 ppm).
4. The agency informed that based on the review of lithologs and analytical results by SU: WR, GSI, Jaipur, three additional boreholes (BH-07, BH-19 and BH-25) were approved by the 100th TCC-I held on 13–14.07.2026, and a ground magnetic survey of ~300 stations was suggested in the sand-covered southern part.
5. Five boreholes have been completed, two are under drilling, and 20 boreholes have been proposed for Phase-II.
6. The Committee reviewed the progress and observed that the earlier five boreholes had been drilled without obtaining prior approval from GSI, Western Region.
7. The Committee clarified that these boreholes shall not be treated as additional drilling and their drilling shall be adjusted within the approved quantum of drilling for Phase-I and Phase-II combined.
8. The Committee observed that, after fixation of the initial boreholes/quantum of work, a review is scheduled after three months to provide technical guidance. The agency is expected to approach the Committee for review and guidance before undertaking any additional work, and work carried out independently without prior approval shall not be considered.
9. The Committee observed that all relevant guidelines had already been discussed at the time of allotment of work in the Siwana Ring Complex and advised the agency to strictly adhere to the technical advice and recommendations of the TCC/Joint TCC. No deviation from the approved recommendations should be made, and uniformity in the exploration methodology and work across all blocks should be maintained.
10. The Committee observed that uniform 1 m core sampling had been advised, but the agency adopted varying sample thicknesses without supervision and without following the GSI, WR guidelines or obtaining prior TCC approval. Any increase in sample quantum should have been discussed with and approved by the TCC before sampling.
11. The Committee noted that non-uniform core sampling may adversely affect correlation with adjacent blocks and subsequent resource estimation, and advised strict adherence to the prescribed sampling guidelines.


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12. The Committee advised GSI, Western Region, to inspect and supervise the sampling process being undertaken by different agencies.
13. The Committee directed the agency to repeat the core sampling at 1 m intervals, as per the prescribed norms, at its own cost, analyse the samples, and present the results for review in the next TCC.
14. The agency requested that the proposed trenching be dropped, as the area is covered by thick aeolian sand, soil and kankar, with bedrock not encountered even at ~2.5 m depth; SU: WR, GSI, Jaipur, also did not recommend trenching, and adjacent agencies have not undertaken the same. The committee agreed for dropping of trenching component.
15. The agency further requested permission to undertake the proposed ground magnetic survey of 300 stations in the southern part and to initiate Phase-II drilling.
16. The Committee advised the agency to consult GSI, Western Region, regarding the proposed geophysical survey.
17. The Committee stated that no deviation on an ex post facto basis will be recommended by the TCC.

Recommendations of TCC:

The Committee directed the agency to repeat core sampling at 1 m intervals, at its own cost and under GSI, Western Region inspection, analyse the samples and present the results in the next TCC; the agency shall consult GSI, Western Region, for the geophysical survey, and no additional boreholes or ex-post facto deviations shall be permitted.

The committee agreed for dropping of trenching and associated analysis.

Agenda 10.1.10. Preliminary Exploration (G3) for REE and associated critical minerals in the NB 15 block (2.00 sq. km.) in the northern part of the Siwana Ring Complex, Balotra district, Rajasthan

[Implementing Agency: M/s Ocean Drilling and Exploration Private Limited]

1. The agency informed that geophysical desktop study, 1:2000-scale geological mapping, trenching, 100 BRS/channel sampling and DGPS fixing of borehole locations have been completed; 400 m of the planned 800 m drilling has been completed in three boreholes.
2. ICP-MS results for 190/350 samples and WD-XRF results for 40/50 samples have been received, while XRD and EPMA studies are yet to commence.
3. The agency informed that the block comprises eight rhyolitic flows (Flows 12–15 and 25–28), intruded by felsic dykes and overlain by aeolian sand; the flows trend NE–SW and dip SE at 25–30°.
4. Trench results showed TREE+Y values of 731–982 ppm in Trench 4 and 255–788 ppm in Trench 5, undertaken to assess flow continuity and REE potential.
5. The agency informed that 24 boreholes are approved on a 200 m × 400 m grid, with three Phase-I boreholes completed and two under drilling.
6. Borehole results showed TREE+Y values of 474.93–3,742.44 ppm, with NB15RJBS-19 recording an average of 2,381.63 ppm; 19 samples exceeded 2,000 ppm and 8 exceeded 2,500 ppm.
7. The agency informed that NB15RJBS-19 yielded a positive REE+Y response

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despite being in a low magnetic-anomaly zone, indicating that such zones cannot be considered barren solely on geophysical response. 11 Phase-II boreholes have been proposed in similar low-magnetic, high-gradient zones.

8. The agency sought permission to undertake the ground magnetic survey (5 line-km/sq. km, 200 m line spacing and 20 m station interval; 250 stations) and to drill the remaining borehole up to 250 m depth.
9. The Committee advised that high-potential zones should not be demarcated based on physical appearance alone and should instead be identified using BRS and channel-sample results.
10. The Committee suggested using handheld XRF for preliminary assessment of unanalysed zones.
11. The Committee noted that the sand thickness in the three drilled boreholes ranges from 15–30 m and advised that an additional depth of 10–20 m may be permitted, if required, to complete the approved 800 m drilling quantum; however, extension up to 250 m was not recommended.
12. The Committee advised the agency to consult GSI, Jaipur, for geophysical planning and obtain approval of the plan from GSI, Western Region. The approved plan, along with analytical results, should be presented in the next review before TCC-I/TCC-II for planning of Phase-II boreholes.

Recommendations of TCC:

The Committee recommended that the agency obtain approval of the geophysical plan from GSI, Western Region, after due consultation with GSI, and present the Phase-II borehole plan along with analytical results in the next TCC.

The Committee agreed to permit an additional 10–20 m depth in the remaining borehole of 1st phase, if required, within approved 800 m drilling quantum, but did not recommend drilling up to 250 m.

Agenda 10.1.11. Preliminary exploration (G3) for REE and associated critical minerals in the NB 16 block (2.00 sq. km) of the northern part of the Siwana Ring Complex, District-Balotra, Rajasthan [Implementing Agency: M/s Hindmetal Exploration Services Pvt. Ltd.]

1. The agency informed that desktop studies, camp setup, 1:2000-scale geological mapping over 2 sq. km, and drone-based topographic survey with contouring have been completed. The area comprises rhyolitic outcrops intruded by felsic and basic dykes, with volcanic flows generally dipping 15–25° towards SE (150–170°).
2. The agency identified nine flows across the three blocks, along with rhyolitic and basic dykes. 84 channel samples and 16 BRS samples have been collected.
3. The agency informed that Phase-I drilling is yet to commence and will start after completion of drilling in NB-1 block, while BRS/channel sample analysis results are awaited.
4. The agency presented airborne magnetic and radiometric interpretations identifying two broad magnetic-high domains and a high-thorium zone in NB-16 and NB-17 within a magnetic-low area, and proposed high-resolution ground magnetic/radiometric surveys followed by flow mapping, channel sampling and drilling.


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5. The Committee noted that progress is slow despite the project being a top priority, with drilling yet to commence and sample analysis still pending, leaving insufficient data for review.
6. The Committee advised the agency to deploy additional rigs, manpower and machinery and opt for NABL-accredited laboratory analysis to expedite the work.
7. The Committee directed the agency to submit, within 15 days, a written progress report and block-wise action plan with timelines and targets for all three blocks, and to adhere to the approved schedule.
8. The Committee advised the agency to appear regularly before TCC-I/TCC-II from 15.09.2026 for progress review.

Recommendations of TCC:

The Committee recommended expediting the project through additional resources and NABL-accredited laboratory analysis, with a progress report and time-bound action plan to be submitted within 15 days.

Agenda 10.1.12. Preliminary exploration (G3) for REE and associated critical minerals in the NB 17 block (2.00 sq. km) of the northern part of the Siwana Ring Complex, District-Balotra, Rajasthan
[Implementing Agency: M/s Hindmetal Exploration Services Pvt. Ltd.]

1. The agency informed that desktop studies, camp setup, 1:2000-scale geological mapping over 2 sq. km, and drone-based topographic survey with contouring have been completed. The area comprises rhyolitic outcrops intruded by felsic and basic dykes, with volcanic flows generally dipping 15–25° towards SE (150–170°).
2. The agency identified nine flows across the three blocks, along with rhyolitic and basic dykes. 84 channel samples and 16 BRS samples have been collected.
3. The agency informed that Phase-I drilling is yet to commence and will start after completion of drilling in NB-1 block, while BRS/channel sample analysis results are awaited.
4. The agency presented airborne magnetic and radiometric interpretations identifying two broad magnetic-high domains and a high-thorium zone in NB-16 and NB-17 within a magnetic-low area, and proposed high-resolution ground magnetic/radiometric surveys followed by flow mapping, channel sampling and drilling.
5. The Committee noted that progress is slow despite the project being a top priority, with drilling yet to commence and sample analysis still pending, leaving insufficient data for review.
6. The Committee advised the agency to deploy additional rigs, manpower and machinery and opt for NABL-accredited laboratory analysis to expedite the work.
7. The Committee directed the agency to submit, within 15 days, a written progress report and block-wise action plan with timelines and targets for all three blocks, and to adhere to the approved schedule.
8. The Committee advised the agency to appear regularly before TCC-I/TCC-II from 15.09.2026 for progress review.


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Recommendations of TCC:

The Committee recommended expediting the project through additional resources and NABL-accredited laboratory analysis, with a progress report and time-bound action plan to be submitted within 15 days.

Agenda 10.1.13. Preliminary exploration (G3) for REE and associated critical minerals in the NB 18 block (2.00 sq. km) of the northern part of the Siwana Ring Complex, District-Balotra, Rajasthan

[Implementing Agency: Natural Resource Division, Tata Steel Ltd.]

1. The agency informed that desktop study, 1:2000-scale geological mapping and DGPS topographic survey over 2.00 sq. km have been completed. Of the 60 targeted BRS samples, 59 have been collected and analysed; trenching and trench/channel sampling could not be undertaken due to extensive soil cover.
2. The agency informed that Phase-I drilling was completed with five boreholes totalling 800 m drilling. The boreholes intersected 24–60 m of loose/weathered formation, followed by porphyritic and non-porphyritic rhyolites with felsic dykes; only Flow 14-17 could be tentatively identified, while the remaining flows remain unclassified.
3. The agency presented results of 51 bedrock/channel samples, showing average TREE of 1,446 ppm (131–2,300 ppm) and average TREE+Y+Sc of 1,896 ppm (maximum 2,908 ppm). Average Zr and Nb contents were 3,633 ppm and 132 ppm, respectively, with higher TREE values recorded in Flows 15–17 and felsic dykes.
4. The agency requested permission to undertake the geophysical survey concurrently and proceed with forest permission for Phase-II boreholes.
5. The Committee reviewed the progress of work and noted that, although the Phase-I drilling has been completed, no potential zone has been identified so far.
6. It was noted that the tuffaceous horizon shows good thickness only in BH-01.
7. The Committee advised the agency to characterise and group the rhyolitic flows based on lithological/mineralogical characteristics, rather than colour variation, to facilitate their identification and correlation.
8. The Committee further advised the agency to identify a suitable marker bed for correlation of the flows across the area.
9. The Committee observed that a systematic approach for identifying and correlating the different flows needs to be formulated, as correlation of flows across other blocks may otherwise be difficult.
10. The Committee advised that the geophysical survey be undertaken only after approval of the geophysical plan by GSI, in consultation with GSI, Western Region, and that the analytical results be presented to the Committee.

Recommendations of TCC:

The Committee recommended undertaking the geophysical survey after approval of the plan by GSI, Western Region, and presenting the analytical results for review. The agency was also advised to use handheld XRF for preliminary analysis.

Agenda 10.1.14. Preliminary exploration (G3) for REE and associated critical


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**minerals in the SB 1 block (2.00 sq. km) of the northern part of
the Siwana Ring Complex, District-Balotra, Rajasthan**

[Implementing Agency: M/s Geo Marine Solutions Pvt. Ltd.]

1. The agency informed that against the Phase-I NQT, the agency has completed geological mapping and topographic survey (2.16 sq. km), 92 BRS/channel samples, 625.5 m drilling in five boreholes, 362 ICP-MS and 50 WD-XRF analyses, 10 petrographic studies, and geophysical data reinterpretation.
2. Detailed geological mapping indicates grey granite in the central part and pink granite in the northern and southern parts, with minor fine-grained granite and dykes; the granites are peralkaline, with riebeckite and aegirine as the principal mafic minerals.
3. Results from 311 core samples showed TREE+Y of 376–4,162 ppm (average 1,388 ppm), $(\text{Nb}+\text{Ta})_2\text{O}_5$ up to 334 ppm (average 120 ppm) and Zr_2O_5 of 583–12,359 ppm (average 2,715 ppm). Of these, 238 samples exceeded 1,000 ppm TREE+Y, 33 exceeded 2,000 ppm, 214 exceeded 100 ppm $(\text{Nb}+\text{Ta})_2\text{O}_5$, and 8 exceeded 5,000 ppm Zr_2O_5 .
4. The agency reported significant REE, Nb+Ta and Zr enrichment, with BH-02 showing an average TREE+Y of 1,871.67 ppm and all 63 samples exceeding 1,000 ppm; dyke, BRS and channel samples recorded TREE+Y up to 4,162, 6,400 and 3,741 ppm, respectively, with notable Nb+Ta and Zr enrichment.
5. The agency presented the reinterpretation of NAGMP aeromagnetic and radiometric data, with borehole locations plotted on the geophysical map and planned on a 200 × 400 m grid, partly falling within forest area.
6. The Committee observed that Phase-I drilling was undertaken without prior approval of the borehole plan and without consultation with GSI, Western Region.
7. The Committee advised the agency to undertake the geophysical study in consultation with GSI, Western Region, before planning the Phase-II drilling.
8. The Committee noted that the dykes are subvertical, whereas the boreholes intersected an inclined contact with a dip of 60°–70°.
9. The Committee enquired about the feasibility of vertical boreholes on the hill, and the agency informed that inclined boreholes are planned.
10. The Committee advised the agency to undertake inclined boreholes targeting the microgranite.
11. The Committee observed that forest clearance is required before initiating drilling in the forest area, while for the non-forest area, the agency should consult GSI, Western Region, for the geophysical survey and Phase-II drilling plan.

Recommendations of TCC:

The Committee recommended that the agency undertake the geophysical study and finalize the Phase-II drilling plan in consultation with GSI, Western Region, obtain approval before drilling, and undertake inclined boreholes targeting microgranite.

Drilling in the forest area shall commence only after obtaining the requisite forest clearance.

Agenda 10.1.15. Preliminary exploration (G3) for REE and associated critical


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**minerals in the SB 2 block (2.00 sq. km) of the northern part of
the Siwana Ring Complex, District-Balotra, Rajasthan**
[Implementing Agency: M/s Mining Tech Consultancy Services Limited]

1. The agency presented the reinterpretation of aeromagnetic, ground gravity and radiometric data, indicating multiple source-depth levels.
2. Integrated K-means clustering of magnetic and radiometric data delineated four geophysical domains, including isolated anomalies potentially representing alteration zones, intrusions or mineralisation.
3. Fieldwork and 1:2000-scale geological mapping have been completed in the hilly, rugged block, comprising porphyritic felsic volcanic rocks with pyroclastic, basic and felsic dykes.
4. Flows 32, 33 and 34 have been identified, with flow directions ranging from N20°W to N40°W and dominant NW–SE and NE–SW joint sets.
5. The agency informed that 36 samples were collected in SB-2 block, with analytical results received for 34 samples. TREE values (excluding Y and Sc) range from 303.78–2,517.43 ppm (average 1,079.84 ppm), with average Y of 279.23 ppm and Zr of 2,499.60 ppm (range 1,023.71–5,338.19 ppm).
6. The Committee observed slow progress across all three blocks (NB-2, SB-2 and SB-3) and noted that the borehole plan for SB-2 has not yet been discussed with GSI, Western Region.
7. The Committee directed the agency to complete Phase-I drilling in all blocks within one month and expedite the work, and to submit the reasons for delay along with a time-bound action plan for the remaining work within the approved schedule. These directions shall apply to the entire MTCS project.

Recommendations of TCC:

The Committee recommended completion of Phase-I drilling in all blocks within one month and directed the agency to expedite the work and return for review.

The agency shall submit the reasons for delay and a time-bound action plan for completing the remaining work within the approved schedule.

**Agenda 10.1.16. Preliminary exploration (G3) for REE and associated critical
minerals in the SB 3 block (2.00 sq. km) of the northern part of
the Siwana Ring Complex, District-Balotra, Rajasthan**
[Implementing Agency: M/s Mining Tech Consultancy Services Limited]

1. The agency presented the reinterpretation of aeromagnetic, ground gravity and radiometric data, indicating multiple source-depth levels.
2. Integrated K-means clustering delineated four geophysical domains, including isolated anomalies potentially representing alteration zones, intrusions or mineralisation.
3. Fieldwork and 1:2000-scale geological mapping have been completed, identifying Flows 34–38 with flow directions ranging from N35°W to N50°W and dominant NW–SE and NE–SW joint sets.
4. Lithological and structural variations were observed within individual flows, with a


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- N50°W-trending felsic dyke exposed in the Flow-38 domain.
5. The agency informed that 49 samples were collected in SB-3, with analytical results received for 22 samples. TREE values (excluding Y and Sc) range from 809.15–1,453.15 ppm (average 1,063.78 ppm), with average Y of 288.84 ppm and Zr of 2,117.40 ppm (range 1,690.36–2,766.20 ppm).
 6. The Committee observed slow progress across all three blocks (NB-2, SB-2 and SB-3) and noted that the borehole plan for SB-2 has not yet been discussed with GSI, Western Region.
 7. The Committee directed the agency to complete Phase-I drilling in all blocks within one month and expedite the work, and to submit the reasons for delay along with a time-bound action plan for the remaining work within the approved schedule. These directions shall apply to the entire MTCS project.

Recommendations of TCC:

The Committee recommended completion of Phase-I drilling in all blocks within one month and directed the agency to expedite the work and return for review.

The agency shall submit the reasons for delay and a time-bound action plan for completing the remaining work within the approved schedule.

Agenda 10.1.17. Geological and Geophysical Investigation in part of Siwana Ring Complex, Balotra district, Rajasthan (Block A)
[Implementing Agency: M/s Shijay Projects India Pvt. Ltd.]

1. The agency informed that against the Phase-I NQT, geological mapping, gravity survey (1,077 stations), DGPS surveys, fixation of 11 borehole locations and ICP-MS analysis of 20 BRS samples have been completed; drilling of 1,008 m out of 1,375 m is completed and is under progress.
2. ICP-MS, WD-XRF and XRD analyses of core samples are in progress, while 2 polished thin sections/petrographic studies have been completed.
3. The agency informed that 6 of the 11 planned boreholes have been completed, 4 are under drilling, and BH-11 is yet to commence and is currently on hold; drilling started on 30.07.2026.
4. A 3–4 m soil cover has been encountered, and the agency stated that Phase-I drilling is expected to be completed by the end of September 2026.
5. The agency informed that the block is largely covered by aeolian sand (~91 m thick), with limited exposures of alkali granite, rhyolite, porphyritic rhyolite and basic volcanics.
6. Borehole sections and core photographs of BH-01 to BH-05 indicate weathered to vesicular rhyolite in BH-01, BH-02, BH-04 and BH-05, while BH-03 intersected alkali granite.
7. The agency informed that 20 BRS samples (9 channel and 11 grab) were collected from alkali granite, porphyritic rhyolite, rhyolite, basic volcanics and their contact zones.
8. ICP-MS results showed TREE+Y values of 202.6–5,343.1 ppm, with 10 samples exceeding 2,000 ppm and 6 exceeding 3,000 ppm; 8 of 9 alkali granite samples exceeded 2,000 ppm.


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9. The results indicate LREE enrichment with significant HREE concentrations, with the highest TREE+Y value recorded in an alkali granite sample.
10. The agency informed that the ground gravity survey was completed at 1,077 stations on a 200 × 400 m grid and presented the Bouguer, residual gravity, upward continuation, first-order derivative, analytic signal and Euler depth maps, with borehole locations superimposed on the residual gravity map.
11. The Committee advised the agency to complete Phase-I drilling and present the analytical results in the next TCC, wherein the Phase-II drilling plan would be discussed.
12. The Committee advised that core sampling should be planned based on borehole logging, with systematic sampling to be undertaken for at least one borehole.
13. The Committee observed that the Phase-II work would be finalised based on the analytical and other results and advised the agency to undertake synthesis of the data generated so far by integrating the geophysical and chemical data of the boreholes.

Recommendations of TCC:

The agency shall complete Phase-I drilling and present the analytical results in the next TCC for finalisation of the Phase-II drilling plan.

Core sampling shall be planned based on borehole logging, with systematic sampling of at least one borehole.

The agency shall undertake integrated synthesis of the geophysical, borehole and analytical data generated so far before finalising Phase-II work.

Agenda 10.1.18. Geological and Geophysical Investigation in part of Siwana Ring Complex, Balotra district, Rajasthan (Block B)
[Implementing Agency: M/s MMPL Pvt. Ltd.]

1. The agency informed that desktop study, field reconnaissance, 41 BRS sampling, XRF/ICP-MS analysis, DGPS survey of 16 borehole points and gravity survey of 1,625 stations have been completed.
2. No previous 1:12,500-scale map is available; an outcrop map has been prepared and outcrop delineation completed, while 1:12500-scale geological mapping is in progress.
3. The agency informed that drilling of 16 boreholes (2,000 m) on a 1 BH/8 sq. km grid is underway using three crawler-mounted hydrostatic rigs; 1,890 m has been completed in 15 boreholes, with BH-11 under drilling, and core logging of 1,890 m completed. Drilling was hindered by cultivated/grasslands and unwilling landowners.
4. The agency informed that, in 15 completed boreholes, hard rock was encountered at 20.45–90 m depth (avg. ~60 m), with 35–104.55 m thickness (avg. ~65 m), comprising mainly rhyolite and porphyritic rhyolite with local granite, micro-granite, felsite dyke, basalt and dolerite.
5. The agency presented ICP-MS results of 41 BRS samples showing TREE+Y of 387–4,480 ppm (avg. ~1,885 ppm), with 36 samples >1,000 ppm, 16 >2,000 ppm, 6 >3,000 ppm and 2 >4,000 ppm; the REE pattern is predominantly LREE-rich (75–87% of TREE), with TREE+Y showing strong association with Th, U and Nb and

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moderate–good association with Ta, Hf and Zr, indicative of alkaline to highly fractionated lithologies.

6. The agency informed that the gravity survey (400 m profile × 200 m station spacing) delineated five gravity domains, with Bouguer anomalies of –15.8 to +13.0 mGal; Zone-A correlates with basalt-bearing BH-14–16, while Zones D–E define a major concealed N–S to NNE–SSW density/lithological boundary, and residual anomalies correlate with rhyolite and peralkaline granite as supported by borehole data.
7. The agency informed that integrated Euler, first vertical derivative and total horizontal derivative maps delineated eight probable lithological/structural boundaries, while SPI depths of 36–368 m represent geophysical source depths and not hard-rock depths; borehole–geophysics calibration, 2.5D/3D modelling and an integrated bedrock accessibility/drilling efficiency map are planned.
8. The agency informed that a calibrated handheld XRF (HHXRF) has been deployed for core sampling interval selection as per GSI, Western Region directions and that BH-05 was treated as the blind borehole for establishing the protocol, with 1 m composite samples from the moderate to high priority zones. For BH after BH-05, the sampling intervals are selected on the HHXRF TREE values with 1 m sampling for TREE >2,500 ppm, 4 m composite sampling for 2,000–2,500 ppm, and representative 1 m sampling from each flow. The agency also stated that HHXRF values are indicative and qualitative and differ from ICP-MS results.
9. The agency informed that 480 drill-core samples are planned for analysis, with the first lot of 89 samples from BH-07 are dispatched and study of 10 polished thin sections is in progress and expected to be completed by September 2026.
10. The agency proposed 33 Phase-II infill boreholes (~1 BH/4 sq. km) based on Phase-I mineralisation trends and gravity data, planned for September–November 2026, and requested increasing borehole depth from 125 m to 175 m due to deeper REE-bearing zones and increasing Zr+TREE+Y values towards borehole bottoms.
11. The committee reviewed the progress of work and opined that to complete Phase-I drilling and present the analytical results in the next TCC, wherein the Phase-II drilling plan would be discussed.

Recommendations of TCC:

The agency shall complete Phase-I drilling and present the analytical results in the next TCC for finalization of the Phase-II drilling plan.

Agenda 10.1.19. Geological and Geophysical Investigation in part of Siwana Ring Complex, Balotra district, Rajasthan (Block C)

[Implementing Agency: M/s Critical Mineral Trackers]

1. The agency presented progress of Phase I work and informed that Geological mapping (1:12500 scale) over the entire 114 sq. km, gravity survey of 1,425 stations 30 BRS sampling, petrography of 10 samples, and WD-XRF analysis of 25 samples have been completed. 1,722.8 m out of 1,750 m drilling completed (99%).
2. ICP-MS analysis is partly pending, with 234 of 450 samples analysed to date.
3. The agency presented geological mapping separately for the Western, Central and Eastern blocks, reporting that the area is largely covered by aeolian sand, with


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granite and rhyolite as the dominant exposed lithologies, along with ignimbrite/welded tuff, basalt, pegmatitic, felsite and microgranite dykes.

4. A granite–rhyolite contact, joint sets in the exposed lithologies, and flow folds within rhyolites were observed and recorded during field mapping.
5. The agency presented borehole logs and core photographs for SBH-01 to SBH-14, each drilled to a planned depth of 125 m, with core recovery of about 98–100%.
6. The boreholes intersected porphyritic rhyolite, rhyolite, welded tuff, volcanic breccia, trachyte, trachy-andesite, andesite, microgranite and granite; however, SBH-06 encountered continuous soil cover up to 125 m without intersecting bedrock.
7. The agency presented ICP-MS results showing REE values of ~5,500 ppm in rhyolites and up to 16,186.7 ppm $\Sigma\text{REE}+\text{Y}$ in dykes, with the highest $\Sigma\text{HREE}+\text{Y}$ of 4,149.4 ppm; samples exceeding 300 ppm $\Sigma\text{HREE}+\text{Y}$ numbered 13, 8 and 4 in the Western, Central and Eastern blocks, respectively.
8. The agency informed that a ground gravity survey was conducted on a 200 × 400 m grid covering 1,425 stations and presented Bouguer anomaly, regional–residual, first-order derivative and Euler depth solution maps.
9. Four major high-density zones were identified, with the central and east-central anomalies concealed beneath aeolian sand and causative bodies estimated at ~171–765 m depth; a conjugate NW–SE and NE–SW fault framework and prominent N–S to NNW–SSE lineaments were also identified.
10. The agency informed that borehole locations were selected by integrating high REE geochemical values, geological mapping results, and gravity highs/strong density contrasts.
11. The Committee noted that the entire area has been covered under the geophysical survey.
12. The Committee advised the agency to complete the pending analytical work, including the remaining ICP-MS analyses.
13. The Committee advised the agency to present the complete analytical results in the next TCC meeting for consideration of the proposed Phase-II borehole planning.

Recommendations of TCC:

The Committee advised the agency to complete the pending analytical work, including the remaining ICP-MS analyses, and present the complete analytical results in the next TCC meeting for consideration and discussion of the Phase-II borehole planning.

General Comments Applicable to All SRC Projects

1. Most of the blocks are scheduled for completion by March 2027. The agencies were advised to expedite the drilling, sampling and analytical work to adhere to the approved timelines.
2. To obtain early indications of REE potential, the agencies were advised to use handheld XRF on powdered samples for rapid screening. The results may assist in identifying prospective rhyolitic flows and planning subsequent Phase-II drilling.


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3. The agencies were advised to maintain regular coordination with the GSI, WR team to ensure uniformity in the exploration workflow and compliance with the NQT.
4. Correlation of rhyolitic flows across the blocks was identified as a key challenge. The agencies were advised to work concurrently on correlation with adjoining blocks and share relevant field observations and core-logging parameters/characteristics with other agencies.

10.2: Review of Ongoing Regional Mineral Targeting Projects

Agenda 10.2.1. Regional Mineral Targeting for Manganese, Graphite, Tungsten, Cobalt, REE and associated critical minerals in parts of Alluri Sitharama Raju District, Andhra Pradesh

[Implementing Agency: M/s Critical Mineral Trackers]

1. The agency informed that Phase-I work, involving collation and integration of NGCM, NGPM, geophysical, airborne, geological, structural and ASTER datasets over 1,450 sq. km, has been completed.
2. Under Phase-II, 1:25000 scale traverse mapping has been completed over 543.75 sq. km of 725 sq. km in toposheet 65K/5; the remaining 181.25 sq. km (SW part) and entire 65K/1 are yet to be covered. Additional lithounits including laterite, charnockite, pyroxene granulite, quartzo-feldspathoid and leptynite were identified, with 11–12 lithounits delineated along with structural data.
3. The agency informed that 114 of 250 BRS samples have been collected and analysed for REE/trace elements by ICP-MS and major oxides by XRF; petrographic/ore-micrographic studies of 30 TS slides have also been completed.
4. The agency informed that fieldwork has remained suspended since 18.06.2026 due to agitation by local tribal communities, and no further progress has been achieved since the 9th Joint TCC held on 25.06.2026 owing to the prevailing law-and-order situation.
5. The agency informed that, following agitation by the local tribal communities, the Principal Secretary (Mines) and DMG, Andhra Pradesh directed the agency to vacate the area; APMDC has also withdrawn from the area.
6. The representative of DMG, Andhra Pradesh informed that the local authorities may permit resumption of work in the area after the local elections.
7. The Committee advised the agency to submit a detailed note on the matter to DMG, Andhra Pradesh and a detailed plan of action to NMEDT.

Recommendations of TCC:

The Committee advised the agency to submit a detailed note on the matter to DMG, Andhra Pradesh and a detailed plan of action to NMEDT.

10.3: Preservation of BH Cores of NPEAs in GSI Core Repository

The issue regarding preservation of drill cores generated under exploration projects was deliberated upon. It was brought to the notice of the Committee that several Regional Core Repositories are declining requests from NEAs and NPEAs for preservation of drill

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cores, including cores generated under NMEDT-funded projects, primarily due to constraints in available storage space. As a result, agencies are facing difficulties in depositing and safely preserving the cores generated during exploration.

The Chairman, TCC-II, apprised the Committee that GSI is also facing constraints in terms of available space for core preservation and that the matter is already under discussion for exploring a suitable solution.

He further informed that additional storage capacity could be created by GSI, subject to availability of the requisite funding for augmentation of core repository infrastructure. He indicated that financial support, if approved, could facilitate creation of additional space for systematic preservation of drill cores generated through exploration programmes.

The Committee noted the importance of ensuring proper and systematic preservation of drill cores and the need to address the existing storage constraints through augmentation of repository capacity.

10.4: Standardisation of ICPMS Analysis being carried out

The Committee deliberated on the need for standardization of ICP-MS analysis being undertaken by different agencies across exploration projects. It was observed that variations in analytical procedures, sample preparation, analytical parameters and quality-control practices may affect the comparability and consistency of results generated from different projects. The Committee, therefore, emphasized the need for a uniform and standardized procedure for ICP-MS analysis.

The Chairman, TCC-I, informed the Committee that GSI has already documented a process for standardization of analytical procedures being followed for such analysis. It was suggested that the existing GSI procedure may be examined and considered for adoption as a common standard for projects.

The Committee further observed that standardization should not be limited to the analytical stage and that uniformity in the sampling and preparation of core samples is also essential. Accordingly, the procedure may include clear guidelines for selection of samples from drill cores, core logging, sampling intervals, sample splitting, preparation and dispatch of samples for analysis, so as to ensure consistency and representativeness of the analytical results.

It was accordingly suggested that a draft standardized procedure covering core sampling, sample preparation and ICP-MS analysis, including relevant quality-control requirements, may be prepared and circulated among the Committee members for examination and comments. The procedure may subsequently be finalized for adoption across the exploration projects.


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Annexure -1

**List of participants attended 10th Joint Meeting of Technical-cum-cost Committees
(TCC-I & TCC-II) of NMEDT held on 24th August, 2026 through VC mode**

S.no	Name	Designation	Email ID	Contact No	Organization
1.	Dr. S. Ravi	Dy. Director General, GSITI, Hyderabad	s.ravi1@gsi.gov.in	9441138834	Chairman, TCC-I
2.	Shri. Pradeep Singh	Addl. Director General, GSI, Kolkata	ddg.it@gsi.gov.in	9810233957	Chairman, TCC -II
3.	Shri. I.R. Kirmani	ADG (Retd.), GSI	irkirmani@yahoo.com	9414014723	Member TCC-1
4.	Shri. K. Koteswara Rao	Dy.D.G. (Retd.) GSI	kkrao1957@gmail.com	9000117969	Member TCC-1
5.	Dr. S. K. Kulshrestha	DDG-RMH-III, NER, GSI, Shillong	s.kulshrestha@gsi.gov.in	9413330658	Member TCC-1
6.	Dr. E.V.S.S.K. Babu	Scientist (G), NGRI	evsskbabu@ngri.res.in	9441535852	Member TCC-1
7.	Shri. S.K. Adhikari	Chief Mining Geologist, IBM, Nagpur	skadhikari@ibm.gov.in	7588690545	Member TCC-1
8.	Shri. S Dhanendran	Director, GSI & Member Secretary, TCC-I, NMEDT, GSI TI Hyderabad	s.dhanendran@gsi.gov.in	9944882204	Member Secretary TCC-1
9.	Shri. Sanjay Singh	Director, GSI, Western Region, Jaipur	sanjay.singh3@gsi.gov.in	9928860884	Member Secretary TCC-II
10.	Shri. B S Jodha	Dy. Director General (Retired), GSI	jodha1961@gmail.com	9414023478	Member TCC-II
11.	Shri. Sunil Kumar Vashisth	GM (Retired), Hindustan Zinc Limited, Udaipur	sunilhzi@gmail.com	9829059236	Member TCC-II
12.	Shri. D.S.Jeere	Director, GSI, RSAS Bengaluru.	dattatreya.jeere@gsi.gov.in	-	Member TCC-II
13.	Shri M.K.Patel	Dy. Director General (Retired), GSI	patelmk27@gmail.com	9040011231	Member TCC-II
14.	Dr. T.S.Sunil Kumar	Addl. Director (Retired), AMD	ts.sunilkumar@gmail.com	9502560153	Member TCC-II
15.	Shri. Anoop Kumar	CAO, GSI, CHQ Kolkata, GSI	anoop.kumar2@gsi.gov.in	-	Member TCC-II
16.	Representatives of DGM, Andhra Pradesh				
17.	Representatives of M/s. MMPL Pvt. Ltd.				
18.	Representatives of M/s. Critical Mineral Trackers				
19.	Representatives of M/s. Hindmetal Exploration Services Pvt. Ltd.				
20.	Representatives of M/s. Mining Tech Consultancy Services Pvt. Ltd.				
21.	Representatives of M/s. United Exploration India Pvt. Ltd.				

Signature
27/09/2026

Signature

22.	Representatives of M/s. GeoExpore Pvt. Ltd.
23.	Representatives of MECL
24.	Representatives of FCI Aravali Gypsum and Minerals India Ltd.
25.	Representatives of M/s. NRD-TATA Steel Ltd.
26.	Representatives of M/s. Gemcokati Exploration Pvt. Ltd.
27.	Representatives of M/s. Ocean Drilling Pvt. Ltd.
28.	Representatives of M/s. Geo Marine Solutions Pvt. Ltd.
29.	Representatives of Shijay Projects India Pvt. Ltd.

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