

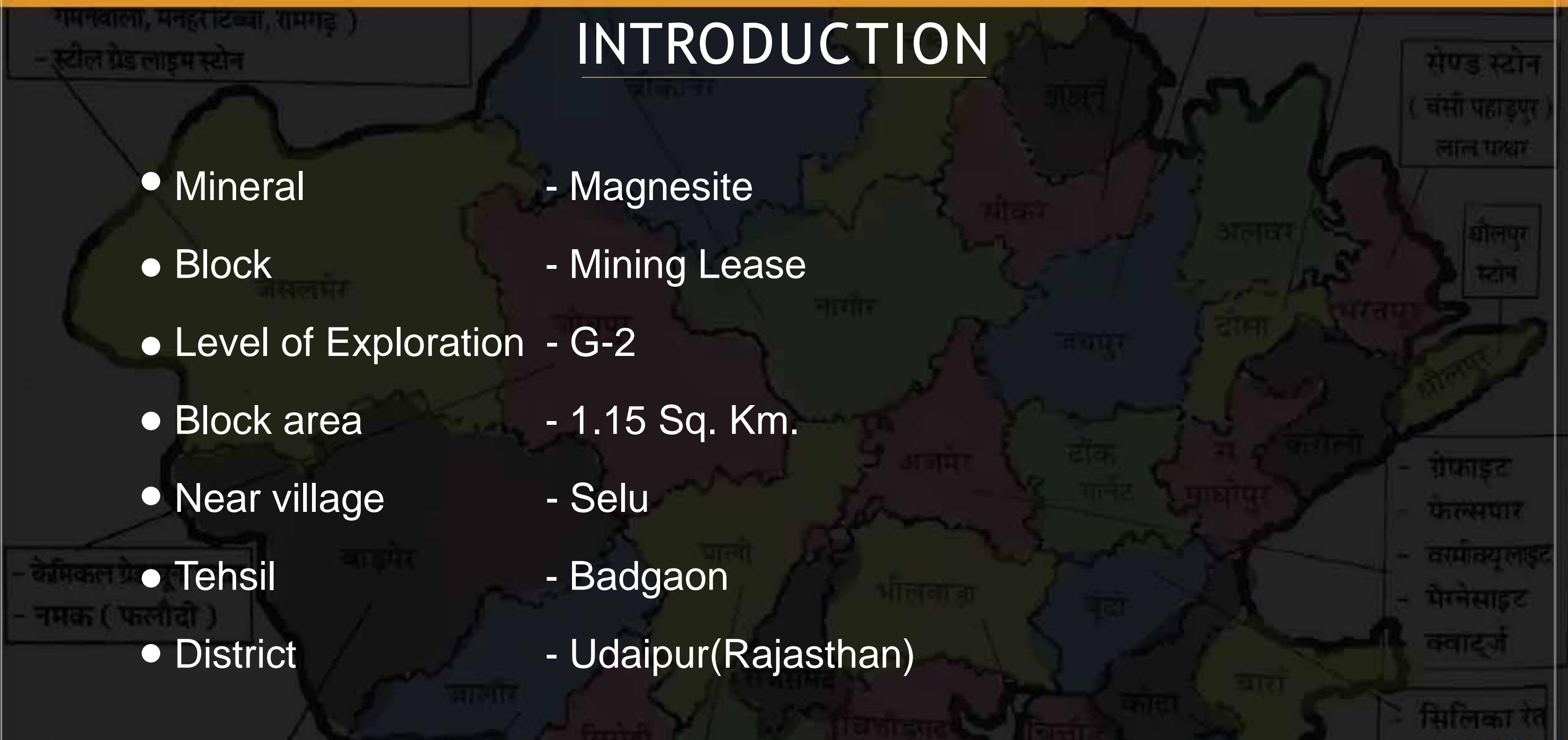


MINING LEASE BLOCK MAGNESITE

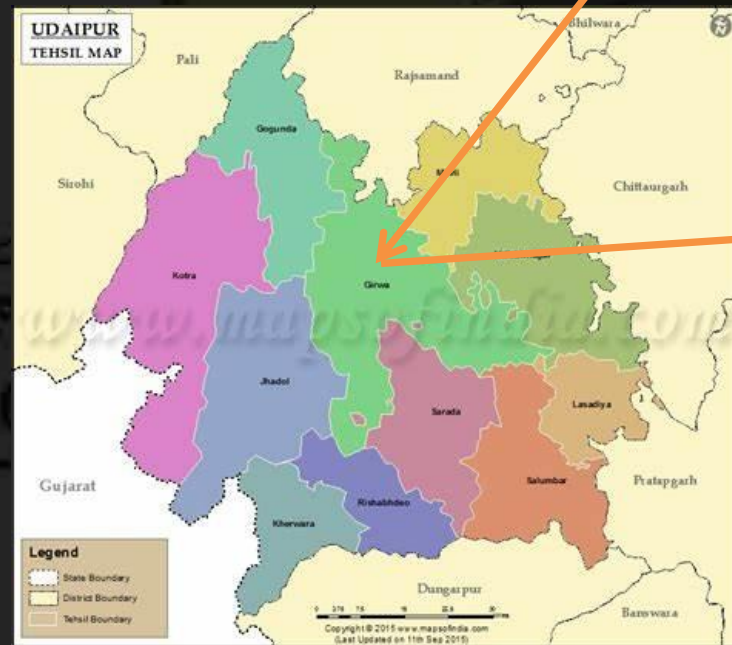
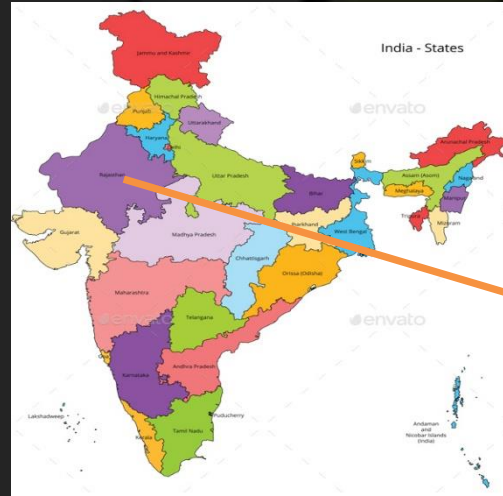
RAJASTHAN STATE MINERAL EXPLORATION TRUST
3rd/5th Floor, Khanij Bhawan, Udhyog Bhawan, C- Scheme, Jaipur - 302005
PH-8290211477, 9928012308

INTRODUCTION

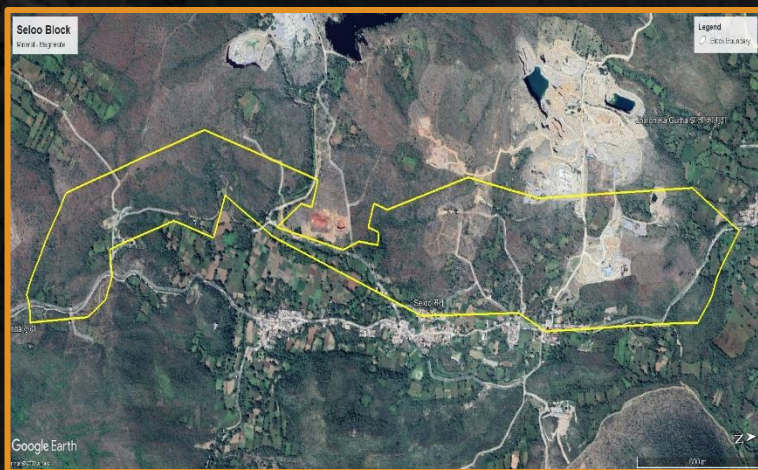
- Mineral - Magnesite
- Block - Mining Lease
- Level of Exploration - G-2
- Block area - 1.15 Sq. Km.
- Near village - Selu
- Tehsil - Badgaon
- District - Udaipur(Rajasthan)



BLOCK LOCATION MAP



Features of Block: Infrastructure & Connectivity



The Selu block area is **30 km.** North-West of Udaipur city.



The nearest Railhead is Udaipur City about **30 km** from Selu village.



The Selu block is connected by roads Udaipur to Iswal **NH-27** further by moterable roads.



The nearest airport is Dabok(Udaipur) **43 km** far from Selu block.

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Features of Block: Infrastructure



Most of the infrastructure that is Police Station, Bank Facility, Hospital, Workshop Facility, Bus Stand, etc. are available in Udaipur City.

LAND CLASSIFICATION OF BLOCK AREA

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Land Status:- Block area falls under government and private land.

Government Land
55 Hectares

Private Land
52 Hectares

Forest Land
Non Forest

Geology

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- The block area is in Aravalli fold belt.
- The area comprises of meta-sediments belonging to the Aravalli Supergroup.
- It comprises of litho-units of phyllite, dolomitic marble, serpentinite, talc-carbonate rock, phyllite, dolomite and carbonaceous phyllites belonging to Bari Lake Group and Jharol/Dovda/Nathdwara Group of Aravalli Supergroup

- Magnesite mineralization in the block, outcrops trending N-S series of patches within dolomitic/dolomite marble, these are carbonate-hosted crystalline magnesite.
- Commonly magnesite disposition as lenses and irregular masses having strike length few meters to several meters. Small dimensions of the magnesite patches (meters to tens of meters) are generally common in the block.

- Surface exposures of magnesite in this block are typically beige or pale brown in colour and characterized by “Granola-like” weathering texture which is a useful prospecting indicator of magnesite.

Exploration

GSI initiated geological investigation of the area and reported indications of mineralization

MECL further accomplished G-4 level of exploration through NMET fund in this area.

During reconnaissance survey, series of magnesite patches trending to N-S were observed, mapped and a total of 51 bedrock samples were collected and analysed for magnesite.

All the 51 samples indicated good value of magnesite with its strike and width continuity in which value of CaO ranging from 1.26% to 7.28%, MgO ranging from 38.20% to 44.70%, Fe₂O₃ ranging from 3.40% to 8.08%, SiO₂ ranging from 0.17% to 2.72%, Al₂O₃ ranging from 0.01% to 0.90% and LOI ranging from 45.70% to 48.71%.

Exploration

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On the basis of results of reconnaissance survey, MECL drilled 63 vertical boreholes total of 2019.00 meters during G-4 and G-2 level exploration.

The mineralized zones for magnesite have been demarcated at minimum 35% MgO cut-off. Magnesite with 42.5%(min) MgO, 2.5% to 4%(max) SiO₂ and 1.5%(max) CaO have been considered as medium grade (grade-2) i.e Directly useable for making ordinary DBM, magnesite with 38% to below 42.5% MgO have been considered as beneficial/low grade.

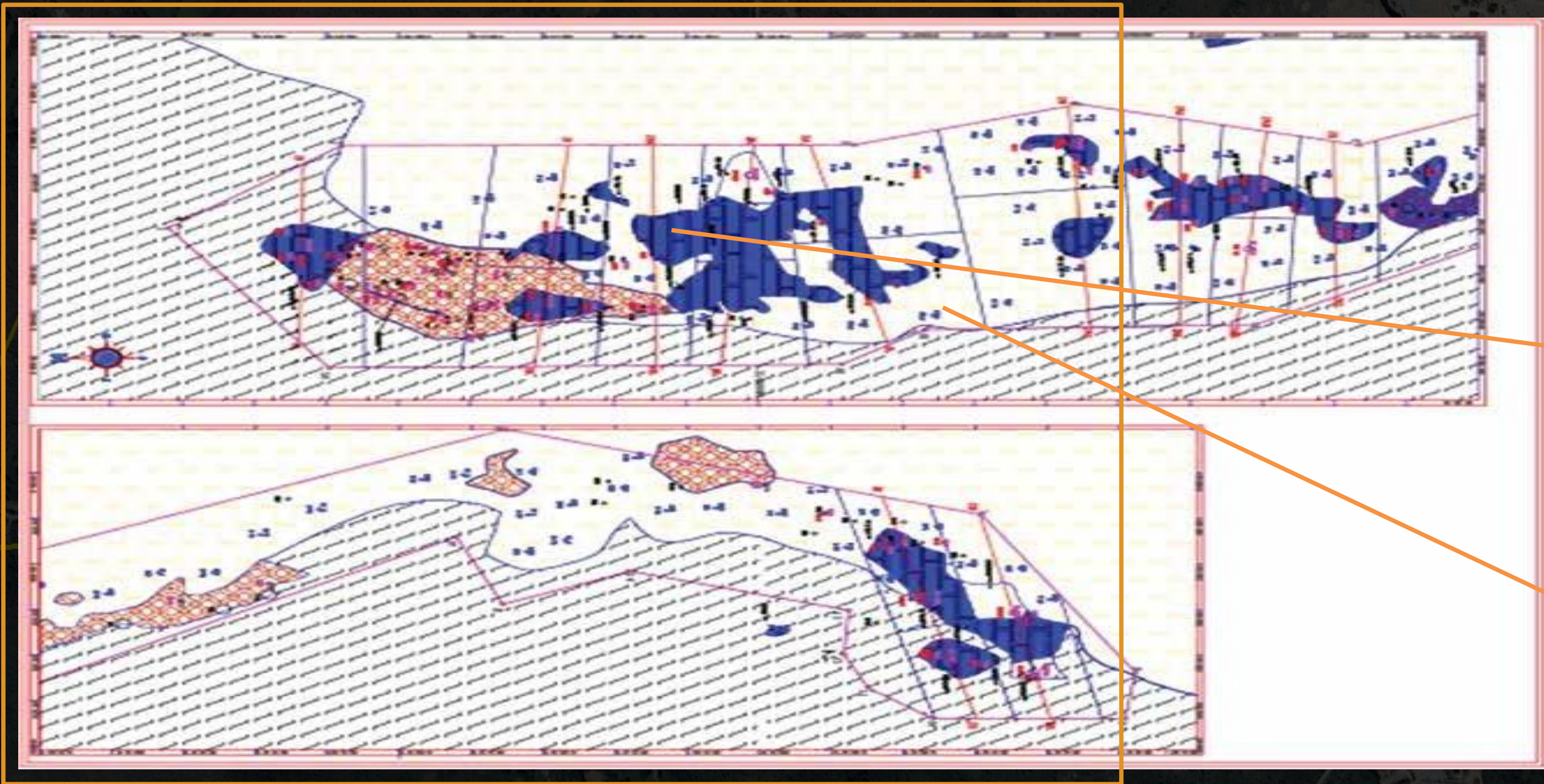
Within block, < 35% to \geq 15% MgO has been considered as dolomite for Resource estimation.

Location of Boreholes



Exploration

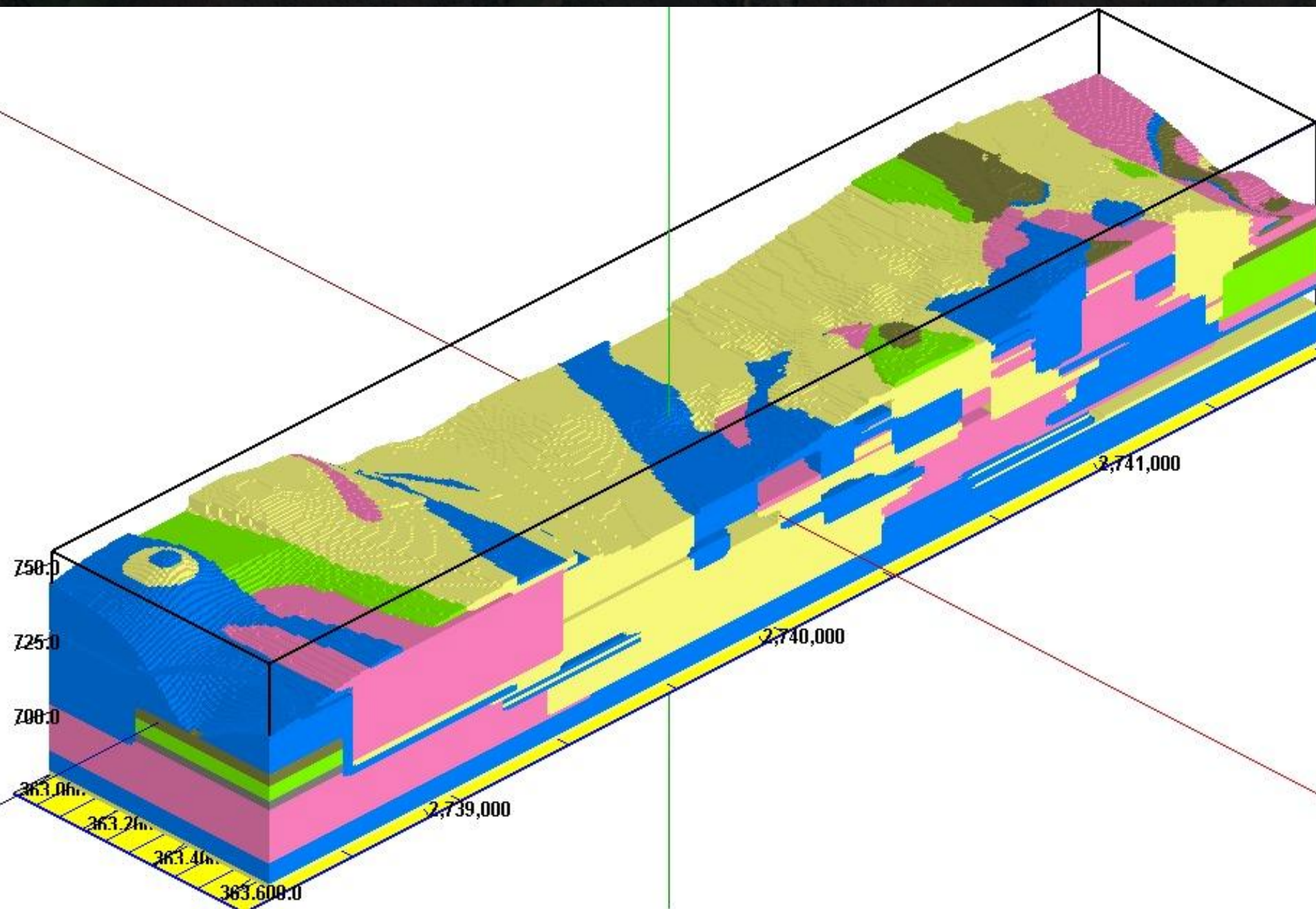
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Magnesite

Dolomite

MODEL OF MAGNESITE ZONES



Lithology

- Clay
- Dolomite
- Dolomitic Marble
- Ferruginous material
- Graphitic Phyllite
- Magnesite
- Phyllite
- Sludge
- Soapstone
- Soil

Features:- Magnesite

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DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH Code	BH No.	Total Depth (m)	RL (m)	Northing UTM (m)	Easting UTM (m)	Date of Commencement	Date of Closure
1	MMS-01	33	731.023	2741634.031	363457.149	20.09.2018	22.09.2018
2	MMS-02	36	744.561	2741144.607	363430.478	24.09.2018	25.09.2018
3	MMS-03	30	750.068	2741036.694	363550.543	26.09.2018	27.09.2018
4	MMS-04	30	743.039	2741021.898	363427.582	27.09.2018	28.09.2018
5	MMS-05	18	737.346	2740896.494	363362.850	28.09.2018	29.09.2018
6	MMS-06	36	737.821	2741012.477	363299.830	30.09.2018	02.10.2018
7	MMS-07	30	742.005	2740857.597	363519.545	05.10.2018	07.10.2018
8	MMS-08	30	728.686	2740564.205	363232.145	07.10.2018	08.10.2018
9	MMS-09	30	734.123	2740414.504	363366.979	09.10.2018	10.10.2018
10	MMS-10	30	728.085	2740305.493	363324.286	11.10.2018	12.10.2018
11	MMS-11	30	732.319	2740198.337	363425.010	13.10.2018	14.10.2018
12	MMS-12	57	758.979	2738806.749	363151.062	15.10.2018	18.10.2018
13	MMS-13	36	739.398	2738760.936	363273.439	18.10.2018	20.10.2018
14	MMS-14	33	738.313	2738740.796	363399.798	21.10.2018	22.10.2018
15	MMS-15	39	739.451	2738646.372	363305.782	23.10.2018	24.10.2018
16	MMS-16	36	725.892	2738618.152	363434.466	25.10.2018	26.10.2018
17	MMS-17	30	739.706	2741297.384	363579.796	27.10.2018	28.10.2018
18	MMS-18	48	746.743	2741282.479	363430.269	29.10.2018	30.10.2018
19	MMS-19	27	739.181	2740551.972	363428.996	31.10.2018	01.11.2018
20	MMS-20	30	739.777	2740318.774	363461.679	02.11.2018	03.11.2018

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe2O3 %	SiO2 %	Al2O3%	LOI%	GRADE
MMS-01	0.00	1.60	1.60	2.78	41.88	4.41	1.28	0.43	48.73	3A
	5.44	6.56	1.12	4.71	38.72	5.56	1.26	0.50	48.42	3A
	8.05	11.29	3.24	7.90	36.35	5.22	0.99	0.31	48.54	4
	11.29	29.56	18.27	2.49	41.20	5.42	1.87	0.37	47.51	3A
	32.07	33.00	0.93	3.37	41.09	5.42	0.73	0.05	48.87	3A
MMS-02	0.00	1.65	1.65	2.48	41.07	6.10	1.23	0.16	48.63	3A
	9.90	33.32	23.42	2.70	40.69	6.21	1.24	0.19	48.23	3A
	33.32	35.48	2.16	4.94	37.40	6.43	2.91	0.15	46.35	4
MMS-03	0.00	10.09	10.09	2.49	41.09	5.91	1.37	0.10	48.38	3A
	10.24	20.60	10.36	3.07	40.69	5.30	1.71	0.20	48.36	3A
	22.44	28.28	5.84	2.26	42.50	3.73	1.97	0.30	48.16	3A

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	LOI%	GRADE
MMS-04	0.00	1.43	1.43	3.87	38.20	4.78	6.83	0.10	42.32	3A
	2.88	4.48	1.60	2.52	38.71	4.21	9.98	0.14	39.33	3A
	5.05	15.18	10.13	2.34	40.64	3.29	7.90	0.09	41.69	3A
	15.43	30.00	14.57	2.44	40.31	4.14	7.31	0.18	42.19	3A
MMS-05	0.00	9.80	9.80	2.37	42.09	4.42	2.19	0.10	47.86	3A
	11.10	12.00	0.90	2.36	42.01	5.15	0.82	0.10	49.01	3A
MMS-06	22.06	33.00	10.94	6.26	38.71	4.17	0.86	0.10	48.77	3A
MMS-07	0.00	1.10	1.10	3.02	36.18	4.53	1.87	0.08	48.06	4
	1.88	4.85	2.97	2.20	40.07	4.92	2.77	0.06	47.39	3A
	4.97	13.38	8.41	4.70	39.65	4.74	1.78	0.14	48.11	3A
	16.86	28.09	11.23	5.31	39.69	4.21	1.56	0.07	48.17	3A

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	LOI%	GRADE
MMS-08	0.00	6.57	6.57	7.05	36.86	6.57	1.17	0.10	47.65	4
	21.00	22.00	1.00	7.32	37.12	4.41	2.18	0.06	47.87	4
MMS-09	0.00	1.73	1.73	3.33	40.04	6.38	0.67	0.08	48.97	3A
	10.56	11.56	1.00	3.79	37.81	5.08	0.61	0.06	49.13	4
	20.38	24.00	3.62	3.67	41.20	5.42	0.66	0.08	48.34	3A
	26.82	29.20	2.38	7.10	37.94	5.11	0.57	0.07	48.50	3A
MMS-10	0.00	4.30	4.30	2.71	40.94	5.60	1.41	0.08	48.76	3A
	5.40	8.29	2.89	6.01	38.55	5.31	0.91	0.08	48.49	3A
	8.29	30.00	21.71	2.45	39.65	5.24	0.92	0.06	46.53	3A
MMS-11	0.00	14.10	14.10	4.34	39.35	5.43	1.09	0.24	48.42	3A
	17.17	18.17	1.00	4.12	39.04	4.44	3.73	0.10	45.62	3A

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	LOI%	GRADE
MMS-12	0.00	1.75	1.75	4.30	38.75	7.61	0.55	0.07	48.36	3A
	6.00	13.27	7.27	2.79	38.63	8.03	0.51	0.08	49.37	3A
	14.34	19.10	4.76	5.65	34.99	9.27	0.75	0.26	48.27	4
	21.00	24.64	3.64	3.67	37.57	8.69	0.67	0.19	48.57	4
	28.26	52.03	23.77	5.04	37.60	7.49	1.35	0.41	47.14	4
MMS-13	0.00	4.23	4.23	4.13	39.31	6.60	0.54	0.10	48.79	3A
	5.14	7.91	2.77	5.37	37.78	7.06	0.62	0.15	48.51	4
	14.23	16.30	2.07	5.58	35.55	8.98	4.17	0.97	42.51	4
MMS-14	0.00	3.08	3.08	2.73	35.82	10.11	7.05	1.50	39.90	4
	5.88	22.13	16.25	2.97	34.82	11.57	6.95	1.34	39.65	4
	22.28	23.12	0.84	2.16	39.64	7.90	3.01	0.71	46.08	3A

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	LOI%	GRADE
MMS-15	3.32	3.80	0.48	7.20	34.97	6.87	0.66	0.17	49.00	4
	6.46	8.61	2.15	8.74	35.01	7.09	0.59	0.14	47.99	4
	8.61	32.30	23.69	2.73	40.19	7.56	0.61	0.14	48.30	3A
	33.40	38.12	4.72	4.17	39.09	7.12	0.76	0.27	48.10	3A
MMS-16	4.75	23.94	19.19	1.99	42.29	5.20	1.16	0.30	48.45	3A
	24.39	25.41	1.02	1.80	34.50	8.97	23.17	2.85	25.53	4
	25.73	26.59	0.86	2.00	35.78	7.74	19.25	2.13	32.51	4
	27.75	33.23	5.48	2.15	40.46	5.76	3.57	0.30	46.29	3A
MMS-17	0.00	2.17	2.17	2.59	41.12	3.68	0.79	0.07	50.14	3A
	2.67	4.93	2.26	2.98	39.74	4.01	0.59	0.06	50.39	3A
	5.45	7.76	2.31	4.24	39.85	5.11	0.49	0.08	49.77	3A

DETAILS OF THE BOREHOLES DRILLED IN THE BLOCK

BH No.	From (m)	To (m)	Thickness (m)	CaO%	MgO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	LOI%	GRADE
MMS-18	0.00	6.92	6.92	3.57	41.09	3.73	1.29	0.06	49.26	3A
	7.10	8.11	1.01	3.30	41.31	3.95	1.15	0.07	49.82	3A
	9.11	11.35	2.24	3.31	38.35	4.31	2.96	0.13	46.80	3A
	12.09	28.54	16.45	4.13	39.57	4.40	2.48	0.18	47.26	3A
	30.90	46.65	15.75	4.58	40.32	3.83	2.18	0.15	47.90	3A
MMS-19	0.00	1.70	1.70	2.67	41.48	3.20	2.94	0.07	47.52	3A
	11.97	12.97	1.00	4.99	38.97	3.39	1.46	0.06	50.79	3A
	15.17	21.00	5.83	4.95	39.49	3.33	1.68	0.06	48.65	3A

Resources

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➤ A total of **14.85 million tonnes** with average grade of **3.66% CaO**, **39.95% MgO** and **1.97% SiO₂** have been estimated by **polygonal method**.

➤ Out of the total **14.04 million tonnes** Resource of magnesite, **83.90%** are indicated category **(332)** and **16.10%** of inferred category **(333)**.

➤ Since majority of the Resource is of **332 category**, the estimated Resource of the block is assigned **332 category** as per **UNFC**.

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Resources

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- Total net resources are **10.045 million tonnes** of magnesite with an average grade of **39.76%MgO, 3.46%CaO, 2.40%SiO₂, 5.65%Fe₂O₃, 0.23%Al₂O₃ and 46.94% LOI** in the area.
- The net resources established in **Grade 3A category** are **8.600 million tonnes** with an average grade of **40.32%MgO, 3.22%CaO, 2.30%SiO₂, 5.22%Fe₂O₃, 0.17%Al₂O₃& 47.22% LOI**.
- The net resources established in **Grade 4 category** are **1.445 million tonnes** with an average grade of **36.42%MgO, 4.88%CaO, 2.99%SiO₂, 8.24%Fe₂O₃, 0.60% Al₂O₃ & 45.28% LOI**. With **reduction of 10%**

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Procedure for Mining Lease



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Thanks

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