MINERAL BLOCK SUMMARY
PART A - GENERAL INFORMATION ABOUT THE MINERAL BLOCK

Sl. No.	Features	Details	
	Location	AT/P.O. Kalarangiatta, District : Jajpur,	
1		State : Odisha, PIN – 755028	
	Mineral block	Sukinda Chromite Mine, Tata Steel Limited	
	(Lease Pillars)	Latitude	Longitude
	A	21°01'29.30376"	85°44'27.10140"
	A2	21°01'22.97964"	85°44'31.27056"
	B	21°01'19.03116"	85°44'33.99720"
	C	21°01'16.73724"	85°44'30.19992"
	C1	21°01'14.20284"	85°44'31.92720"
	C3	21°01'04.93932"	85°44'38.07348"
	C6	21°00'51.83352"	85°44'46.85316"
	D	21°00'50.06700"	85°44'48.03396"
	D1	21°00'53.79552"	85°44'54.37860"
	D2	21°00'55.67364"	85°44'57.60132"
	D6	21°01'08.14404"	85°45'18.73368"
	E	21°01'09.14844"	85°45'20.42280"
	E2	21°01'01.64676"	85°45'25.47360"
	E3	21°00'51.44724"	85°45'32.40072"
	E4	21°00'42.93972"	85°45'38.05236"
	F	21°00'39.59856"	85°45'40.24836"
	F1	21°00'43.53804"	85°45'47.08476"
	F2	21°00'47.22408"	85°45'53.17092"
	G	21°01'04.39824"	85°46'22.37448"
	G8	21°01'22.03104"	85°46'10.56360"
	G9	21°01'27.59592"	85°46'06.86532"
	G10	21°01'29.13096"	85°46'05.85480"
	G11	21°01'30.39024"	85°46'04.98396"
	G12	21°01'31.99656"	85°46'03.91296"
	H	21°01'52.37472"	85°45'50.06628"
	H7	21°01'30.50868"	85°45'13.19796"
	I	21°01'26.07996"	85°45'05.67360"
	J	21°01'34.32468"	85°45'00.19440"
	K	21°01'39.35028"	85°45'08.71884"
	L	21°01'47.47944"	85°45'03.35592"
	M	21°02'03.53184"	85°45'30.76020"
	N	21°02'05.81100"	85°45'29.25360"
	N9	21°01'31.34712"	85°44'30.62292"
	Villages	Kalarangiatta, Kaliapani, Mahulkhal & Forest Block No. 27	

	Tahasil	Sukinda
	District	Jajpur
	State	Odisha
2	**Area/Hects/Sq. kms**	
	Total block area	406 Ha
	Mineralised area	48.840 Ha
	Non-mineralised area	357.160 Ha
3	**Exploration**	
		G1: 213.323 Ha (48.840 Ha mineralised area with chromite & pyroxenite; Rest 164.483 Ha area is non mineralized comprising of limonite, altered/ unaltered ultrabasic & dolerite dyke & quartzite which has been proven by drilling100mx100m grid spacing)
	Status (G2/G3/G4)	G2: 98.880 (Entire 98.880 Ha area is non mineralised comprising of limonite, altered/ unaltered ultrabasic & dolerite dyke & quartzite which has been proven by drilling in 200mx200m grid spacing)
		G3: 93.797 (Entire 93.797 Ha is non- mineralized comprising of limonite, altered/unaltered ultrabasic & dolerite dyke & quartzite which has been proved through few widely based boreholes & where facilities lie COB plant, Administrative office, colony & other infrastructure as well as old OB dumps exist) Three number of steeply dipping chromite bands (covering around 31.690 Ha surface area within the leasehold) & two number of pyroxenite bands (covering around 17.150 Ha surface area within the leasehold), all striking approximately at 59 degree North, are present within the leasehold area of Tata Steel. The non-mineralised area (357.160 Ha) consists of rock types like limonite, quartzite, dolerite dyke & altered/unaltered ultrabasic rocks.
	Exploration agency	Upto 2003: Tata Steel Limited
		2003-08: M/s ACC Ltd
		2008 onward: M/s South West Pinnacle Exploration Pvt. Ltd
	Total nos. of boreholes with meterage	627 nos with a total of 85152.51m
	Bore hole spacing	G1: 100m x 100m
		G2: 200m x 200m
		G3: 400m x 400m
4	**Qty. of minerals grade-wise**	
	Mineral	Chromite & Pyroxenite
	Total Geological Resource as on 01.10.2018	Chromite: **95.821** million tonnes (>=10% Cr_2O_3)
		Pyroxenite: **10.132** million tonnes
		Chromite:
		Total Resource: **95.821** million tonnes
		Cr_2O_3 (>=50%) : 5.09 million tonnes (as per GR)
		Lumps: 454384.30 tonnes, Fines: 4635615.70 tonnes
		Cr_2O_3 (40 - 50%) : 51.266 million tonnes (as per GR)
		Lumps: 4576515.82 tonnes, Fines: 46689484.18 tonnes

		Cr_2O_3 (10-40%): 39.465 million tonnes (as per GR)
		Lumps: 3523040.55 tonnes, Fines: 35941959.45tonnes
		Lumps: Fines=8.927 : 91.073
	Projected Resources EC for 2019-20: 2.4million tonnes Projected production from October 2018 to March 2019: 0.873207 mt Total: 3.273207 mt	Cr_2O_3 (>=50%) : 4916127.64 tonnes
		Lumps: 438862.71 tonnes, Fines: 4477264.92 tonnes
		Cr_2O_3 (40-50%) : 49514773.96 tonnes
		Lumps: 4420183.87 tonnes, Fines: 45094590.09 tonnes
		Cr_2O_3 (10-40%): 38116891.4 tonnes
		Lumps: 3402694.90 tonnes, Fines: 34714196.50 tonnes
		Total : 92547793 tonnes or **92.548** million tonnes
5	**Mineralised zone**	
	Nos. of mineralised zones	Three number of steeply dipping chromite bands (covering around 31.690 Ha surface area within the leasehold) & two number of pyroxenite bands (covering around 17.150 Ha surface area within the leasehold), all striking approximately at 59 degree North, are present within the leasehold area of Tata Steel. The non- mineralised area (357.160 Ha) consists of rock types like limonite, quartzite, dolerite dyke & altered/unaltered ultrabasic rocks.
	Trend (Dip & Strike)	All bands are near vertical (80º-85º dip) and regional trend is 59º
	Total thickness	Northern Band (Regional band no I - Lower Brown Ore seam): Average thickness 15-18M
		Middle Band (Regional band no II - Upper Brown Ore seam): Average thickness 7-8m
		Southern Band (Regional band no VI - Grey Ore seam/ Mahagiri Ore seam): Average thickness 7-8m
6	**Grade**	Chromite:
		Cr_2O_3 (>=50%) :Avg: 52.2 %
		Cr_2O_3 (>=40 to 50%) : Avg: 47.772 %
		Cr_2O_3 (10-40%): Avg: 31.905 %
7	**Accessibility**	
	Nearest Railhead	Sukinda Chromite Mine is connected with Jajpur Keonjhar Road Railway Station on the Howrah-Chennai trunk line of East Coast Railways by 52 km all weather road.
	Road	The all-weather road connecting Sukinda Chromite Mine with JK Road Railway Station meets NH-200 at Mangalpur at a distance of 21 km and Express Highway No.1 connecting Daitari with Paradip at Duburi at a distance of 32 km from the mine.
	Airport	The nearest airport from Sukinda Chromite Mine is Bhubaneswar which is at a distance of 100 km.
8	**Hydrography**	

	Local surface drainage pattern (channels)	There is no perennial source of water viz, river, streams or nala running through the lease area. However, during rainy season, the collected water from periphery of the open pit is diverted through a network of garland drains having settling pits to arrest the suspended solids. These garland drains together with a network of drains alongside the mineral and chrome concentrate storage areas led to the effluent treatment plants located near the lease boundary.
	River/Streams	Damsala Nallah, which is perennial stream, forms the main drainage system. It flows from the north-east towards the south, at a distance of 0.8 km away from the leasehold.
9	**Climate**	
	Mean Annual Rainfall	1342mm (based on last 10 years rainfall data)
	Temperature (December	Maximum: 30º-32 ºC
		Minimum: 10º-12º C
		Maximum: 42º-44º C
		Minimum: 20º-22º C
10	**Topography**	
	Toposheet nos.	F45N12 (73-G/12), F45N16 (73-G/16), F45T9 (73-H/9), F45T13 (73-H/13)
	Morphology of the area	The leasehold area is an undulating hilly terrain with maximum elevation of 280 mRL along the southeastern lease boundary, close to eastern corner and minimum elevation at 110 mRL in camp area close to western corner. From the peak elevation close to eastern corner, the terrain slopes in all directions at different gradients. A large part of the existing 406 ha lease area is covered by quarry excavations and associated mineral/overburden stacks.

SUKINDA

PART-B PARTICULARS OF STATUTORY LICENSES, PERMITS, PERMISSIONS, CONCESSIONS, APPROVALS AND CONSENTS RELATED TO MINING OPERATIONS

Sl. No.	Particulars	Details/ Status
1	**Forest Clearance**	**To be obtained by the Successful / not applicable/ if available, State to provide details**
2	Wild life clearance(sanctuary, reserve or special zone clearances)	-do-
3	Environmental clearance	-do-
4	Consent to establish	-do-
5	Explosive license	-do-
6	Permission for mines opening	-do-
7	Permission of installation/ trial operation of equipment	-do-
8	Ground Water clearance (Centre/ State)	-do-
9	Railway siding approval	-do-
10	Approval for diesel storage	-do-
11	Power line from State Discom.	-do-
12	Clearances relating to work under an existing transmission line or shifting of the transmission line	-do-
13	Gramasabha consent	-do-

PART-C PARTICULARS OF LAND

Sl. No.	Area	Details
1	Total Concession Area	406.420 hects.
2	Forest Land with Status	404.669 hects.
3	Government land with status	1.751 hects.
4	Private land with status	Nil
5	Revenue survey details of the area	Refer : Land Schedule