

**INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT AND REGULATION DIVISION**

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

Mine file No : ORI/BXT/KPT/MCDR-1/BBS

Mine code : 07ORI09001

- (i) Name of the Inspecting : **RAM** ) **RAMKISHAN R**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri B K Dash, Mine Manager  
Official with  
Designation
- (iv) Date of Inspection : 16/01/2020
- (v) Prev.inspection date : 30/09/2019

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **PANCHPATMALI (C&N BLOCK)**
- (b) **Registration NO.** : **IBM/116/2011**
- (c) **Category** : **A Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **ORISSA**
- District : **KORAPUT**
- Village : **PANCHPATMALI**
- Taluka : **POTTANGI**
- Post office : **DAMANJODI**
- Pin Code : **763008**
- FAX No. : **06853- 55002, 55003**
- E-mail : **sbnayak@nalcoindia.co.in,**
- Phone : **06853- 34514**
- (f) **Police Station** :
- (g) **First opening date** : **18/03/1983**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **PANCHPATMALI BAUXITE MINE, M/S.NALCO LTD**  
**correspondance** : **AT & PO. DAMANJODI, PANCHPATMALI,**  
: **KORAPUT: 763 008**
3. (a) **Lease Number** : **ORI0227**
- (b) **Lease area** : **1244 1315.26u ha**
- (c) **Period of lease** : **30**
- (d) **Date of Expiry** : **~~20/07/2009~~ 16/11/2032**
4. **Mineral worked** : **BAUXITE** Main

## 5. Name and Address of the

Lessee : M/S NALCO LTD  
 NALCO Bhavan P/1, Nayapalli  
 BHUBANESWAR KHURDA ORISSA  
 Phone:  
 FAX :

Owner : M/S.Nalco  
 P/1, Nayapalli Bhubaneswar  
 KHURDA ORISSA  
 Phone: 0674 442301, 2.3  
 FAX : 06853 32214, 32

Agent : SHRI ARUN KUMAR DAS  
 AT- PANCHEPATMALI PO-  
 DAMANJODI KORAPUT KORAPUT  
 ORISSA  
 Phone:  
 FAX :

## Mining Engineer

Name : C.M.D.MURTHY, Full Time  
 Qualification : BE (Mining), Ist Class MMCertificate  
 Appointment/  
 Termination date

## Mining Engineer

Name : E.SAHOO, Full Time  
 Qualification : BE MINING, IST CLASS COMPETENCY  
 Appointment/ : 20/07/1999  
 Termination date

## Geologist

Name : P.K.BEHERA, Full Time  
 Qualification : MSC GEOLOGY  
 Appointment/ : 08/08/2002  
 Termination date

## Manager

Name : A.CHAKRABORTY  
 Qualification : B.Tech(Mining) & FCC Metal, MMR 1961  
 Appointment/ : 20/11/1999  
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	25/01/2000
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	30/04/2004
		Mining Scheme rule 12 MCDR1988	19/12/2008
		FMCP under 23C(1)	11/06/2012
		Renewal under rule 24 MCR1960	10/07/2012
		Modif.of approved Mining Plan	01/05/2015
		Modif.approved Mining Scheme	01/05/2015
		Mining Scheme rule 12 MCDR1988	11/11/2016
		Modif.approved Mining Scheme	05/01/2017
		MS modif under MCR 1960	25/10/2019

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such specific proposal.	Nil	
1b	Exploration over lease area for geological axis 1 or 2	G1 level: 1075.722ha & un-explored area: 239.542ha	G1 level: 1075.722ha & un-explored area: 239.542ha	The steeply sloping area / escarpment are inaccessible for exploration and kept under unexplored category.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not applicable	Nil	
1d	Balance area to be explored to bring Geological axis in 1 or 2	239.542ha. The said area has not been explored as the part of escarpment/steeply sloping area and not accessible for exploration and kept under unexploration category.	239.542ha. The said area has not been explored as the part of escarpment/steeply sloping area and not accessible for exploration and kept under unexploration category.	
1e	Balance reserve as on 01/04/20	In the review of mining plan, approved on 11.11.2016 for the period from 2017-18 to 2021-22, the reserves/resources for Bauxite reserves are 126.44 mil.t. and resources of 17.33 mil.t..	due to depletion/addition over the period of time the updated bauxite reserves as on 01.04.2019 are 109.44 million tonnes & remaining resources of 17.33 million tonnes	

1f General remarks of inspecting officers on geology, exploration etc

The ML area of north & central block is a part of Panchpatmali hill, which is characterised by north-south trending Bauxite capping surrounded by Khondalite on the slopes.

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	North block	North block.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches for overburden & Bauxite zone are envisaged in the approved review of mining plan. The topsoil is proposed to be scraped & stacked separately.	Separate benches in overburden & Bauxite zone are made. The topsoil is scraped & stacked separately.	
2c	Stripping ratio or ore to OB ratio	1:0.052 t/cu.m. for the year 2018-19.	1:0.052 t/cu.m.	
2d	Quantity of topsoil generation in m <sup>3</sup>	213904 cu.m.	52035 cu.m.	
2e	Quantity of overburden generation in m <sup>3</sup>	359444 cu.m.	357615 cu.m.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		development is carried out by opencast mining method.	

## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1 quarry during the year 2018-19	1 quarry	
3b	Quantity of ROM mineral production proposed	6824960 tonnes during the year 2018-19.	6825000 tonnes	
3c	Recovery of sailable/usable mineral from ROM production	6824960 t	6825000 t	
3d	Quantity of mineral reject generation	Not proposed.	Nil	
3e	Grade of mineral rejects generation and threshold value declared.	Not applicable	Nil	
3f	Quantity of sub grade mineral generation.	Not applicable	Nil	
3g	Grade of sub grade mineral generation	Not applicable	Nil	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised.	Mechanised.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Nil	
3j	Provision of drilling and blasting in mineral benches	drilling and blasting is proposed.	carried out.	
3k	Provision of mining machineries in mineral benches	shovel and dumper combination is proposed for excavation and hauling.	shovel and dumper combination is deployed for excavation and hauling.	

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	The proposed height of the benches are 2m overburden and the same for Bauxite ore zone is for 6-8m.	maintained.	
3m	Total area covered under excavation/pits	546.375 ha at the end of plan period.	541.19 ha	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1:0.052 t/cu.m. for the year 2018-19.	1:0.052 t/cu.m.	
3o	Total area put in use under different heads at the end of year	Total area put to use is 721.64 ha at the end of plan period.	716.455 ha	
3p	Production of ROM mineral during the last five year period as applicable	2014-15: 6825000 tonnes, 2015-16: 6825000 tonnes & 2016-17 : 6825000 tonnes, 2017-18: 6824912 tonnes & 2018-19: 6824960 tonnes	2014-15: 5739120 tonnes, 2015-16: 6340142 tonnes, 2016-17: 6825000 tonnes, 2017-18: 6825000 tonnes & 2018-19:6825000 tonnes	
3q	General remarks of inspecting officers on method of mining etc.		prodcution is carried out by opencast mining method.	

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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No external dumping proposal & mineral reject generation. However, the overburden material/aluminous laterite is proposed for concurrent backfilling and the topsoil is spread over the backfilled area.	The top soil so generated was spread over the backfilled area during the year 2018-19 & no separate dump for the same was made. The OB & waste generated was backfilled in the mined out areas concurrently.
4b	Location of topsoil, OB and mineral reject dumps	The OB/aluminous laterite has been proposed to be backfilled concurrently and no proposal for mineral rejects generation. So, no separate dumps for the same has been made.	The OB/aluminous laterite generated was backfilled concurrently in the mined out areas and the topsoil so generated was spread over the backfilled area during 2018-19.
4c	Number of dumps within lease area and outside of lease area	Not applicable	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable	Nil
4e	Number of active and alive dumps.	Not applicable	Nil
4f	Number of dead dumps.	Not applicable	Nil
4g	Number of dumps established.	Not applicable	Nil

4h	Whether Retaining wall or garland drain all along dumps are there.	Not applicable Nil	
4i	Length of Retaining wall or garland drain all along dumps	Not applicable Nil	
4j	Number of settling ponds	Not proposed.	Nil
4k	Specific comments of inspecting officer on waste dump management		Concurrent backfilling is done in the mined out areas.

#### Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Concurrent backfilling of mined out area is proposed.	Concurrent backfilling in the mined out area is being practised.	
5b	Area under backfilling of mined out area	22 ha during the year 2018-19	22.68 ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	The topsoil so generated is proposed to be spread over the reclaimed/back filled area.		
5d	Total area fully reclaimed and rehabilitated	22 ha	22.68 ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Concurrent backfilling of mined out areas is being practised	



## Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	PMCP report to submitted submitted before 1 st July		
6b	Area available for rehabilitation (ha) .	22 ha during the year 2018-19	22.68 ha	
6c	afforestation done (ha).	22 ha	22.68 ha	part of the work has been done in the year 2019-20.
6d	No. of saplings planted during the year	65000 nos	75351 nos	
6e	Cumulative no .of plants		1654988 nos	
6f	Any other method of rehabilitation	Not applicable	Nil	
6g	Cost incurred on watch and care during the year		Rs. 23 lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	22 ha	22.68 ha	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	22 ha	22.68 ha	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	22 ha	22.68 ha	part of the work has been done during the year 2019-20.

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable Nil	
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Not proposed. Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Not applicable Nil	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not applicable Nil	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Not applicable Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB.	Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB is carried out.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		PMCP measures were carried out as proposed.

## Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	The entire ROM carried out. Bauxite produced from the mine is proposed to be dispatched to their Alumina refinery through belt conveyor.		
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	The entire ROM carried out. Bauxite produced from the mine is proposed to be dispatched to their Alumina refinery through belt conveyor.		
7c	Different grade of mineral sorted out at mines.	+20% Alumina.	+20% alumina	
7d	Any beneficiation process at mines	Not proposed.	Nil	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			The entire ROM produced from the mining operations are supplied to the Alumina plant

## Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Scrapping of topsoil and spreading the same over the backfilled area was proposed	carried out.	

8b	Concurrent use or storage of topsoil	The topsoil so carried out. generated is proposed to be spreading over the backfilled area.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Not propsoed.	Concurrent backfilling of minrd out area is in practice
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Concurrent backfillig of overburden/alu laterite is proposed in the mining plan.	Concurrent backfillig of overburden/aluminous laterite is in practice
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	concurrent backfilling of mined out area was proposed	carried out.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	65000 nos	75351 nos
8g	Survival rate		80%
8h	Water sprinkling on roads to control airborne dust	water sprinkling on haul raods for dust supression is proposed	carried out.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Aesthetic beauty in and around the mine is well mainatined.

## Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly and annual returns are to be submitted as per rule 45 of MCDR, 2017	submitted.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer 15, Diploma Mining Engineer 7, Geologist 1	Graduate Mining Engineer 15, Diploma Mining Engineer 7, Geologist 1	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under current (O/C) workings: 201.38ha, Reclaimed and Rehabilitated: 337.050ha, Occupied by plant, bulidings etc. : 165.700ha & progressive mine closure plan: 22.68ha	found to be in order.	
9d	Scrutiny of Annual return on afforestation	75531 nos	75531 nos	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Nil	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM clsoing stock of Bauxite is Nil	found to be in order.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Prodcution cost Rs. 736.9	Prodcution cost Rs. 736.9	
9h	Scrutiny of Annual return on fixed assets	Rs. 3225400000	Rs. 3225400000	

9k      Scrutiny of                      DUMPER 100.000 found to be in order.  
Annual return on TONNE 6, BACK  
mining                                HOE 3.000 CUM  
machineries                           2, BACK HOE  
   6.500 CUM 4,  
   WHEEL LOADER  
   8.700 CUM 10  
   WHEEL LOADER  
   11.000 CUM 2,  
   BLAST HOST  
   DRILL 150.000  
   MM 5, DOZER  
   525.000 HP 2,  
   etc.,

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Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date : 21/7/2020

NO violation.

*R. Rauli*  
(RAMKISHAN R)

Indian Bureau of Mines