

No.34011/24/2016-CPAM
Government of India
Ministry of Coal

Shastri Bhawan,
 New Delhi, the 10th November, 2016

To

M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
 Vidyut Bhawan, Janpath, Jyoti Nagar,
 Jaipur-302005
 Fax: 0141-2744927,2740006
 E-mail: fuel.rvun@gmail.com

Subject :	Mining Plan and Mine Closure Plan(1st Revision) of Parsa Coal Block(5 MTPA) of M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
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Sir,

I am directed to refer to your letter No. RRVUN/ACE(Fuel)/Dy CE(Fuel)/D. 1230 dated 13-06-2016 for approval of Mining Plan and Mine Closure Plan(1st Revision) for approval of the Central Government and to state that the Mining Plan and Mine Closure Plan(1st Revision) (September 2016) of Hasdo – Arand Coalfield, District – Surguja & Surajpur State Chhattisgarh of M/s. M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd) to be read alongwith company's letter No RRVUN/ACE(Fuel)/Dy CE(Fuel)/D. 1938 dated 14-09-2016 incorporating clarifications has been considered and the approval of the Central Government thereon is hereby conveyed under Section 5(2)(b) of the Mines & Minerals (Development & Regulation) Act, 1957 subject to the following conditions:-

- I. The Mining company shall take all necessary precautions regarding safety of mine workings and persons deployed therein;
- II. Mining lease of this block shall not encroach into any other adjacent block;
- III. The cost of abandonment for carrying out the closure activities envisaged in the Mine closure plan is indicative; the actual cost for carrying out the activities at the time of final closure may be higher. The actual cost of abandonment will have to be borne by the project proponent for carrying out the closure activities;
- IV. The approval of the mine closure plan is without prejudice to the requirement of approvals from competent /prescribed authority under the relevant rules/ regulations etc;

Two copies of the approved mine plan duly signed by the competent authority are returned herewith with the request that a copy of the approved mine plan may be submitted to the concerned State Government for necessary action and also a photocopy of the approved mine plan may be sent to the Coal Controller for monitoring the block.

Yours Faithfully

Signature valid

Digitally signed by ANANDA KUMAR MANDAL
 Date: 2016.11.10 11:18:14 IST
 Reason: Approved

(A K Mandal)

Under Secretary to the Govt. of India.

Encl: As Above

Copy to:

1. Under Secretary (CA-III Section)
2. Section Officer (Nominated Authority)



**MINING PLAN AND MINE CLOSURE PLAN
(FIRST REVISION)**

FOR

**PARSA COAL BLOCK
(BLOCK AREA - 12.52 SQ.KM)**

OF

**HASDO - ARAND COALFIELD
DISTRICT - SURGUJA & SURAJPUR
STATE - CHHATTISGARH**

VOLUME - I (TEXT)

**TARGET CAPACITY - 5.00 MTPA
SEPTEMBER 2016**

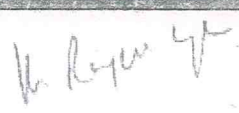
**RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
(UNDER GOVERNMENT OF RAJASTHAN)
VIDYUT BHAWAN, JANPATH
JYOTI NAGAR, JAIPUR
RAJASTHAN - 302005**

**PREPARED BY
KUMAR RAJESH SINGH
RQP - 34011/(29)/2008-CPAM**

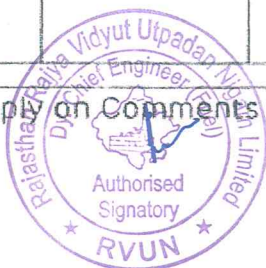


MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

Reply to the comments made by technical members of the committee of Ministry of Coal communicated vide letter no. 34011 / 24 / 2016 - CPAM, Dated 17th August, 2016

S/No	Ref Para	Observations
1	1 (i)	1.125 Mt of rejects are likely to be generated annually, the utilization of the same needs to be elaborated
	Reply	Annually generated 1.125 Mt rejects will be utilized in FBC based Thermal Power Plant which is located in adjacent coal block i.e. Parsa east & Kanta Basan Coal Block. Location of FBC based thermal power plant is shown in Plate No - II & V. Incorporated in 1 (i)
2	9 (a)	Base date of the mining plan is June 2016, while at para 5(c) two year of construction period has been envisaged. As such the production from the project should start from the year 2018-19, while at summary para (b) the starting year of production indicated as 2019-20, this needs to be reconciled
	Reply	As per the efficiency parameter given by MoC, coal production will start during 2019 - 20. However best effort will be taken to start coal production before 2019 - 20. Construction period will be of three years. Reconciled in 9 (b)
3	6 (c)	As indicated at para 6 (c) , 76% of end use coal requirement for unit 3 to 6 Chhabra TPS, 100% of Kalisindh Power Project unit 1 & 2 and 66% of Suratgarh Supercritical TPP unit 7 & 8 is to be met from this project coal, while at para 1 (i) the percentage of end use requirement to be met from this mine is different this needs to be reconciled
	Reply	Reconciled in 6 (c) as per table below:- 

Reply on Comments



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MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

		Power Plant (MW)	% of end use requirement to be met from this mine
		Chhabra Thermal Power Project Unit -3 to 6	26 %
		Kalisindh Power Project Unit - 1 & 2	19 %
		Suratgarh Supercritical TPP, Unit - 7 & 8	36 %
4	Table 9.4 & at Page 10-48, 11-6, 11-35 & Page 14, 21, 52 MCP	During mining, End of mining and post closure needs to be reconciled	
	Reply	Reconciled in table 9.4 & at Page 10-57, 11-6, 11-31 of Mining Plan & Page 6, 32 of Mine Closure Plan.	
5	Table 9.5 & page 10-49, 11-7, 11-36 & Page 15, 22, 53 MCP	The figures for Void and plantation indicated for End of mine closure needs to be reconciled	
	Reply	Reconciled in table 9.5 & page 10-58, 11-7, 11-32 of Mining Plan & Page 7, 33 of Mine Closure Plan.	
6	Page 11-55 & 11-56	Bar chart for the activities to be taken up for the period life of the mine plus 3 year should be provide indicating activity-wise breakup of the abandonment cost	
	Reply	Incorporated in page 69, 70 of Mining Plan & page 71, 72 of Mine Closure Plan.	
7	Page 11-61	WPI as on the base date should be considered for assessment of amount to be deposited in escrow account as a security against the mine activities to be carried out for the closure of the mine. Since the project is under implementation the base date indicated at summary needs to be kept as March 16	

Reply on Comments

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Reply

Incorporate in para 11.5.2 of Mining Plan & para 5.2 of Mine Closure Plan.

Base date for WPI index for calculation of closure cost has been considered as July 2016.

The annual closure cost as per new guidelines issued by MoC is calculated as follows. In this calculation closure cost of an opencast mine has been considered as 0.09 Crores per Hectare (as per WPI July, 2016).

WPI as on August, 2009	129.60
WPI as on Base date July, 2016	183.90
Escalation rate of Closure Cost	1.42
Rate of Compounding of Annual Closure Cost	5.00%
Amount to be deposited in to Escrow Account after Compounding @ of 5 % "Rs. In Crores" as per approved mine closure plan is given below	378.43
Base Rate of Closure Cost "Rs. Crs. / Ha."	0.06
Closure Cost "Rs. Crs. / Ha."	0.09
Lease Area "Ha."	1,252.45
Amount to be deposited into Escrow Account "Rs. In Crs."	106.63
Amount Already deposited into Escrow Account "Rs. In Crs."	-
Net Amount to be deposited into Escrow Account "Rs. In Crs."	106.63
Balance Life of the Project "in Years"(Include Three years Construction Period)	45.00
Annual Closure Cost "Rs. In Crs."	2.37

Amount to be deposited in escrow account for entire life is given below:-

(Compounding @ 5% annual escalation)

Year	in Rupees Crores	Year	in Rupees Crores
1	2.37	24	7.28
2	2.49	25	7.64

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		3	2.61	26	8.02
		4	2.74	27	8.43
		5	2.88	28	8.85
		6	3.02	29	9.29
		7	3.18	30	9.75
		8	3.33	31	10.24
		9	3.50	32	10.75
		10	3.68	33	11.29
		11	3.86	34	11.86
		12	4.05	35	12.45
		13	4.26	36	13.07
		14	4.47	37	13.72
		15	4.69	38	14.41
		16	4.93	39	15.13
		17	5.17	40	15.89
		18	5.43	41	16.68
		19	5.70	42	17.52
		20	5.99	43	18.39
		21	6.29	44	19.31
		22	6.60	45	20.28
		23	6.93	Total	378.43
8	Para 11.1.8 & 2.8 of MCP	Closure plan preparation needs to be in line with the guidelines of the Mine Closure plan			
	Reply	<p>Closure plan is prepared by RQP and the same will be put up for approval of competent authority of Company. The Board of the company approved and copy of such approval enclosed in annexure - XI of Mine Closure Plan.</p> <p>Incorporated in para 11.1.8 of Mining Plan & para 1.3 of Mine Closure Plan.</p>			
9	Para 11.1.8 & Para 3.1.6	As per guidelines the details of coal beneficiation facility and management of rejects should be furnished, which should include:- Coal beneficiation facility and its process, Proposal regarding future maintenance or dismantling of structures of washeries; Steps taken			



MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

		for proper functioning of Slurry pond and periodic desilting, water re-circulation, measures to prevent water pollution from slurry pond, arrangement for surplus water overflow, Utilization of Coal rejects, rejects dumps should be properly benched and graded on cession of washery/ mining operation; Slurry pond should dismantled and dewatered and area reclaimed at the end of washery																																													
	Reply	Incorporated in para 11.3.6 of Mining Plan & para 3.6 of Mine Closure Plan.																																													
10	Para 11.7, 11.8, 11.9 & Para 8, 9 & 10 of MCP	Para 11.7, 11.8 & 11.9 should be modified in line with the guideline for mine closure plan issued by MOC, New Delhi dated 07.01.2013																																													
	Reply	Incorporated in para 11.6, 11.7 and 11.8 of Mining Plan & para 6, 7, 8 of Mine Closure Plan.																																													
11		As the adjacent mine is allotted to same owner, coal locked in the barrier should be taken out for conservation point of view.																																													
	Reply	<p>The coal blocked in barrier & batter in eastern side of Parsa Coal Block is shown in table below:</p> <table><tr><th rowspan="3">SEAM</th><th colspan="3">GROSS COAL BLOCKED</th><th>NET COAL</th><th>MINABLE COAL</th><th rowspan="3">Total OB</th></tr><tr><th>BARRIER</th><th>BATTER</th><th>TOTAL</th><th>10% Loss</th><th>10% Loss</th></tr><tr><th>Mt</th><th>Mt</th><th>Mt</th><th>Mt</th><th>Mt</th></tr><tr><td>VI</td><td>0.05</td><td>1.06</td><td>1.11</td><td>1.00</td><td>0.90</td><td>24.20</td></tr><tr><td>V</td><td>0.19</td><td>3.84</td><td>4.03</td><td>3.63</td><td>3.26</td><td>6.17</td></tr><tr><td>IV</td><td>0.38</td><td>7.81</td><td>8.19</td><td>7.37</td><td>6.63</td><td>13.52</td></tr><tr><td>TOTAL</td><td>0.62</td><td>12.71</td><td>13.33</td><td>12.00</td><td>10.80</td><td>43.89</td></tr></table> <p>It is proposed to excavate 10.80 Mt of coal blocked in barrier & Batter in eastern side of Parsa Coal Block.</p> <p>Parsa Coal Block and Parsa East & Kanta Basan coal block are having common boundary. It is envisaged to do staggered working in both blocks in order to excavate coal blocked in barrier & batter.</p>	SEAM	GROSS COAL BLOCKED			NET COAL	MINABLE COAL	Total OB	BARRIER	BATTER	TOTAL	10% Loss	10% Loss	Mt	Mt	Mt	Mt	Mt	VI	0.05	1.06	1.11	1.00	0.90	24.20	V	0.19	3.84	4.03	3.63	3.26	6.17	IV	0.38	7.81	8.19	7.37	6.63	13.52	TOTAL	0.62	12.71	13.33	12.00	10.80	43.89
SEAM	GROSS COAL BLOCKED			NET COAL	MINABLE COAL	Total OB																																									
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		of common boundary. It is important to note that in order to excavate coal blocked in barrier & batter of both block, substantial quantity of overburden needs to be rehandled.																																																
		Incorporated in para 5.1.3 of Mining Plan.																																																
12		Land available after dismantling CHP and washeries should be properly utilized.																																																
	Reply	Land available after dismantling CHP and washeries will be utilized for public use and green belt development. Reconciled in table 9.4 & at Page 10-57, 11-6, 11-31 of Mining Plan & Page 6, 32 of Mine Closure Plan.																																																
13		Position of sumps should be indicated in the stage plans.																																																
	Reply	Incorporated in all stage plans. (Plate no – XVIII, XIX, XX, XXI, XXII, XXIV and XXVII)																																																
14		Width of central haul road may be increased																																																
	Reply	55 meter width of central haul road has been keep considering safety berm at the toe of dump in both side of haul road, belt conveyor alignment and transportation of man & machine. 55 meter of haul road will be sufficient in for mine operation keeping safety into consideration Reconciled in page 5-15 of Mining Plan.																																																
15		An average GCV may be calculated for the entire deposit or calendar program may have year wise quality/Grade of coal																																																
	Reply	<table><tr><th>Years</th><th>Year wise Coal in Mt</th><th>Composite Coal Quality range in GCV</th><th>Years</th><th>Year wise Coal in Mt</th><th>Composite Coal Quality range in GCV</th></tr><tr><td>1</td><td>1.50</td><td>G-14 to G-16</td><td>22</td><td>5.00</td><td>G-15 to G-17</td></tr><tr><td>2</td><td>3.00</td><td>G-13 to G-15</td><td>23</td><td>5.00</td><td>G-15 to G-17</td></tr><tr><td>3</td><td>5.00</td><td>G-13 to G-15</td><td>24</td><td>5.00</td><td>G-14 to G-16</td></tr><tr><td>4</td><td>5.00</td><td>G-13 to G-15</td><td>25</td><td>5.00</td><td>G-14 to G-16</td></tr><tr><td>5</td><td>5.00</td><td>G-13 to G-15</td><td>26</td><td>5.00</td><td>G-14 to G-16</td></tr><tr><td>6</td><td>5.00</td><td>G-14 to G-16</td><td>27</td><td>5.00</td><td>G-14 to G-16</td></tr><tr><td>7</td><td>5.00</td><td>G-14 to G-16</td><td>28</td><td>5.00</td><td>G-14 to G-16</td></tr></table>	Years	Year wise Coal in Mt	Composite Coal Quality range in GCV	Years	Year wise Coal in Mt	Composite Coal Quality range in GCV	1	1.50	G-14 to G-16	22	5.00	G-15 to G-17	2	3.00	G-13 to G-15	23	5.00	G-15 to G-17	3	5.00	G-13 to G-15	24	5.00	G-14 to G-16	4	5.00	G-13 to G-15	25	5.00	G-14 to G-16	5	5.00	G-13 to G-15	26	5.00	G-14 to G-16	6	5.00	G-14 to G-16	27	5.00	G-14 to G-16	7	5.00	G-14 to G-16	28	5.00	G-14 to G-16
Years	Year wise Coal in Mt	Composite Coal Quality range in GCV	Years	Year wise Coal in Mt	Composite Coal Quality range in GCV																																													
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Reply on Comments

(RGP NO. 34011/(29)/2008-CPAM)

STATIONER
ANANDAY
2008-09-01
10/Ministry
(Shastri Bhawan)
New Delhi



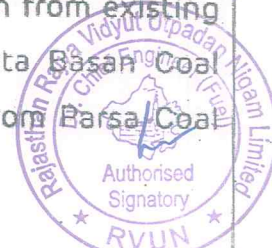
MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

8	5.00	G-14 to G-16	29	5.00	G-14 to G-16
9	5.00	G-14 to G-16	30	5.00	G-14 to G-16
10	5.00	G-14 to G-16	31	5.00	G-14 to G-16
11	5.00	G-14 to G-16	32	5.00	G-14 to G-16
12	5.00	G-15 to G-17	33	5.00	G-14 to G-16
13	5.00	G-15 to G-17	34	5.00	G-14 to G-16
14	5.00	G-15 to G-17	35	5.00	G-14 to G-16
15	5.00	G-15 to G-17	36	5.00	G-14 to G-16
16	5.00	G-15 to G-17	37	5.00	G-14 to G-16
17	5.00	G-15 to G-17	38	5.00	G-14 to G-16
18	5.00	G-15 to G-17	39	5.00	G-14 to G-16
19	5.00	G-15 to G-17	40	5.00	G-14 to G-16
20	5.00	G-15 to G-17	41	4.00	G-14 to G-16
21	5.00	G-15 to G-17	42	1.91	G-14 to G-16

Above data has been calculated from geological report, which may change during actual mining operation.

Reconciled in para 5.1.8, 11.1.5 of Mining Plan & Para 1.0.5 of Mine Closure Plan.

16		Less area can be taken for residential colony with multi storied buildings
	Reply	We are taken 30 Ha land for Colony which will be acquired outside of Parsa Coal Block. Colony has been designed with Multistoried Residential building with necessary facilities Like Playground, Garden, Shopping Complex, School etc. However effort will be taken to optimize requirement of land during detail design.
17		It would be difficult to get 33 KV line from 70 Km distance
	Reply	The power supply for Parsa Coal Block shall be taken from existing 132/33 KV switchyard at nearby Parsa East & Kanta Basan Coal Block (allotted to RRVUNL), which is about 5 KM from Parsa Coal Block. Incorporated in Para 3.2 of Mining Plan.
18		Results of Physio-mechanical and washability tests maybe incorporated In Geology chapter



Reply on Comments

Stamp: RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED (RRVUNL) and other official stamps.

(RQP NO 34011/(29)/2008-CPAM)

Handwritten signature and date 7.

MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

	Reply	Incorporate Physio-mechanical test in Geology Chepter - IV, and washability tests has not been done in Parsa Coal Block. However washability test result of adjacent coal block (Parsa East & Kanta Basan coal Block) has been considered for Parsa Mining Plan, which is also incorporated in Geological Chapter - IV. Washability test of parsa coal block will be done separately. Incorporated in Para 4.5 & 4.6 of Mining Plan.
19		Location of FBC for washery rejects to be indicated on the surface plan
	Reply	Incorporate and shown in Plate no. - V
20		Highwall mining is to be strongly recommended from coal conversation point of view as the seam thickness and gradient are quite favorable. Substantial amount of coal is locked in batters etc.
	Reply	26.83 Mt is blocked in batter on southern and western boundary of Parsa Coal Block and has not been considered for mining. Out of 26.83 Mt it is proposed to recover 20% of reserves blocked in batter by high wall mining method i.e. about 5.37 Mt. It is proposed to deploy equipment as mine will advance in dip direction. Attempt will be taken to extract coal in high wall mining before internal dump when mine reached to 100 m depth. So 5.37 Mt blocked in batter in southern and western side of Parsa coal Block and 10.80 Mt blocked in barrier and batter in common boundary between Parsa and Parsa East & kanta Basan coal blocks has been proposed to be excavated, Resulting in increase of 16.17 Mt minable reserve. Total minable Coal reserves is 200.41 Mt. Incorporated in para 5.1.3 of Mining Plan.
21		Land for rehabilitation colony may also be indicated
	Reply	40 Ha land for Rehabilitation Colony has been considered which will be acquired outside of Parsa Coal Block. Incorporated in Chapter - IX of Mining Plan.

Reply on Comments



SECRETARY
MINISTRY OF COAL
GOVERNMENT OF INDIA
NEW DELHI

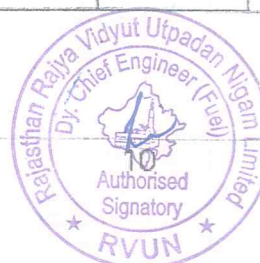
(RQP NO. 34011/(29)/2008-CPAM)

MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

24		Use of groundwater is not recommended for washing of coal, other sources of water from nearby region may be identified for Use																																										
	Reply	<p>Sufficient water will be available from mine seepage to cater water requirement of various mining & washery activities. Hence no ground water is required.</p> <p>Incorporated in page 7 – 6 of Mining Plan.</p>																																										
25		Bigger size of trucks maybe used for reduction in traffic density																																										
	Reply	<p>3.0 Cum Hydraulic Shovel in combination of 35 T Dump truck will be used for removal of overburden upto initial 40 m depth. Overburden below 40 m will be removed by using 15 cum Hyd. Shovel in combination of 100 T Rear Dumper. Excavator bigger than 15 Cum and Dumper bigger than 100T may be considered later In order to reduce traffic density.</p> <p>Incorporated in page 5 – 14 of Mining Plan.</p>																																										
26		Year wise top soil utilization should be furnished																																										
	Reply	<p>Year wise top soil generation and utilization are given table below:-</p> <table><tr><th rowspan="2">Year of mine operation</th><th colspan="2">Top soil</th><th colspan="2">Top soil Utilization</th><th rowspan="2">Remark</th></tr><tr><th>Generate (Mcum)</th><th>Cumulative (Mcum)</th><th>Utilization (Mcum)</th><th>Cumulative (Mcum)</th></tr><tr><td>1st</td><td>0.11</td><td>0.11</td><td>-</td><td>-</td><td rowspan="5">Spread on Green Belt, Infrastru cture & External Dump area</td></tr><tr><td>2nd</td><td>0.16</td><td>0.27</td><td>-</td><td>-</td></tr><tr><td>3rd</td><td>0.16</td><td>0.43</td><td>0.15</td><td>0.15</td></tr><tr><td>4th</td><td>0.18</td><td>0.61</td><td>0.10</td><td>0.25</td></tr><tr><td>5th</td><td>0.18</td><td>0.79</td><td>0.07</td><td>0.32</td></tr><tr><td>6th to 10th</td><td>0.55</td><td>1.34</td><td>-</td><td>0.32</td><td>Topsoil will be stored</td></tr></table>	Year of mine operation	Top soil		Top soil Utilization		Remark	Generate (Mcum)	Cumulative (Mcum)	Utilization (Mcum)	Cumulative (Mcum)	1 st	0.11	0.11	-	-	Spread on Green Belt, Infrastru cture & External Dump area	2 nd	0.16	0.27	-	-	3 rd	0.16	0.43	0.15	0.15	4 th	0.18	0.61	0.10	0.25	5 th	0.18	0.79	0.07	0.32	6 th to 10 th	0.55	1.34	-	0.32	Topsoil will be stored
Year of mine operation	Top soil			Top soil Utilization		Remark																																						
	Generate (Mcum)	Cumulative (Mcum)	Utilization (Mcum)	Cumulative (Mcum)																																								
1 st	0.11	0.11	-	-	Spread on Green Belt, Infrastru cture & External Dump area																																							
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6 th to 10 th	0.55	1.34	-	0.32	Topsoil will be stored																																							

Reply on Comments

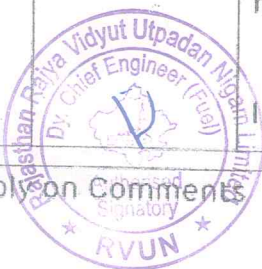
(RQP NO. 34011/(29)/2008-CPAM)



MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

22		Blasting practice in OB should be suitably modified to protect underlying seam that will be taken by Surface Miner															
	Reply	<p>Blast design study will be done by scientific bodies like CMPDI/ISM/CIMFR in order to protect underlying seam that will be taken by surface miner.</p> <p>Incorporated in para 5.2.1 of Mining Plan.</p>															
23		Grade wise departmental manpower to be indicated along with exact no. of outsourced manpower															
	Reply	<p>Grade wise manpower have been presented below for departmental option:-</p> <table border="1"> <thead> <tr> <th>Sl. No.</th><th>Particulars</th><th>Manpower</th></tr> </thead> <tbody> <tr> <td>1</td><td>Officer</td><td>45</td></tr> <tr> <td>2</td><td>Supervisor</td><td>98</td></tr> <tr> <td>3</td><td>Worker</td><td>625</td></tr> <tr> <td></td><td>Total</td><td>768</td></tr> </tbody> </table> <p>However, following activities are proposed to be outsourced.</p> <ol style="list-style-type: none"> 1) Security: - Entire security manpower is required to be arranged by outsourcing except skeleton manpower for supervision. 2) Welfare Facilities like Canteen, Transport requirement, civil repair & maintenance are proposed to be outsourced. Hence only skeleton supervision manpower is provided for this purpose. 3) Light Vehicles: - Only a few drivers are provided for Senior Executives. <p>If any operation will be proposed to be outsourcing, departmental manpower will get reduced accordingly.</p> <p>Incorporated in para 6.1.1 of Mining Plan.</p>	Sl. No.	Particulars	Manpower	1	Officer	45	2	Supervisor	98	3	Worker	625		Total	768
Sl. No.	Particulars	Manpower															
1	Officer	45															
2	Supervisor	98															
3	Worker	625															
	Total	768															

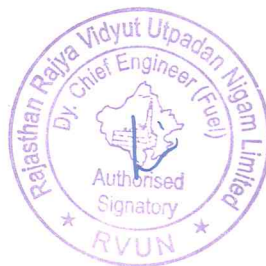
Reply on Comments



(RQP NO. 34011/(29)/2008-CPAM)

MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK – 5 MTPA (FIRST REVISION)

		11 th to 20 th	0.78	2.12	-	0.32	and kept fertile. So that same can be spread over Internal Dump at the time of Mine Closure
		20 th to 39 th	1.26	3.38	-	0.32	
		End of Mine Closure	-	3.38	3.07	3.39	
		Incorporated in page 5 – 25 of Mining Plan.					
27	Please refer para 11.4.0	This should be described as per the Mine Closure Plan Guidelines issued by MOC, New Delhi dated 07.01.2013.					
	Reply	Reconciled in Para 11.3.10 of Mining Plan & Para 3.10 of Mine Closure Plan.					

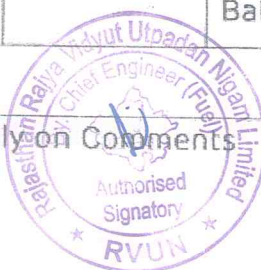


Handwritten signature and date: 16 Nov 14

MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

Annexure		
28		<p>A certificate by the RQP that he has been duly authorized by the mining company to prepare Mining plan on their behalf and that he has a valid recognition from MOC under MCR,1960 to prepare the Mining plan and that provisions of relevant rules and regulations made there under have been observed in the preparation of the mining plan.</p> <p>The Mining plan/ Mine Closure plan has been prepared considering the guidelines pertaining to mining plan/ mine closure plan issued by MoC, GOI & wherever specific permission will be required the applicant will approach the concerned authorities.</p>
	Reply	Reconciled in Annexure - V of Mining Plan & Annexure - V of Mine Closure Plan.
29		Certificate from empowered representative of / or Block allottee / applicant that he mine that the reclamation & rehabilitation work shall be carried out in accordance with the approved mine closure plan and any modification/amendments which may be made in the mine Closure Plan by Ministry of Coal, from time to time
	Reply	Incorporated in Annexure - VI of Mine Closure Plan.
30		Copy of the document to establish that the geological report has been duly purchased from CMPDI, GSI/ MECL as the case maybe
	Reply	Transfer letter from previous allottee is enclosed.
		Incorporated in Annexure - X of Mining Plan.
31		Documents in support of Mining Lease, in case the lease has already been granted.
	Reply	Mining lease is not yet Granted.
32		Hydro-geological Study & Water Balance Chart should be provided
	Reply	Hydro-geological Study Incorporated in Para 10.1. VII & Water Balance Chart Incorporated in Annexure - XI of Mining Plan.

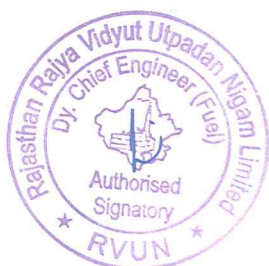
Reply on Comments



(RQP NO 34011/(29)/2008-CPAM)

MINING PLAN & MINE CLOSURE PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

Plates		
33		As envisaged in the dumping schedule of the Mining Plan and MCP the depth of the final void will be restricted to 30 m from surface, while as per the final stage quarry plan and reclamation plan the depth of the void has been shown to be more than 30 m this needs to be corrected.
	Reply	At the end of mining operation, depth of mine will be 275 meters shown in Final stage Dump Plan (Plate no - XXIV). After mine operation, top overburden will be dozed to fill void upto 30 meters from surface which has been shown in mine closure plan (Plate no. - XXVIII)
34		The plan indicating the lease boundary and block boundary & Mine boundary superimposed over it in distinct color.
	Reply	Refer Plate no. - XV (Conceptual plan with surface layout.)



14/12/2008
14/12/2008
14/12/2008

**MINING PLAN
(FIRST REVISION)**

FOR

**PARSA COAL BLOCK
(BLOCK AREA - 12.52 SQ.KM)**

OF

**HASDO - ARAND COALFIELD
DISTRICT - SURGUJA & SURAJPUR
STATE - CHHATTISGARH**

VOLUME - I (TEXT)

**TARGET CAPACITY - 5.00 MTPA
SEPTEMBER 2016**


**RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
(UNDER GOVERNMENT OF RAJASTHAN)
VIDYUT BHAWAN, JANPATH
JYOTI NAGAR, JAIPUR
RAJASTHAN - 302005**

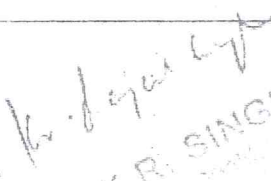
**PREPARED BY
KUMAR RAJESH SINGH
RQP - 34011/(29)/2008-CPAM**



List of Chapters

Chapter	Subject	Page Nos.
Mining Plan		
	Summarized data	a to p
I	Introduction	1-1 to 1-5
II	Details of earlier approval of mining plan	2-1 to 2-13
III	Location, topography & communication	3-1 to 3-6
IV	Exploration, geology, seam sequence, coal quality and reserves	4-1 to 4-66
V	Mining	5-1 to 5-27
VI	Manpower, safety and supervision	6-1 to 6-18
VII	Coal handling, washing & mode of dispatch	7-1 to 7-13
VIII	Infrastructure facilities proposed and their location	8-1 to 8-13
IX	Land requirement	9-1 to 9-7
X	Environment management	10-1 to 10-69
XI	Progressive and final mine closure plan	11-1 to 11-79


 अकण्डा कुमार मण्डल
 AKANDA KUMAR MANDAL
 Joint Secretary
 Ministry of Coal
 Govt. of India
 New Delhi


 K.R. SINGH
 Joint Secretary
 Ministry of Coal
 Govt. of India
 New Delhi



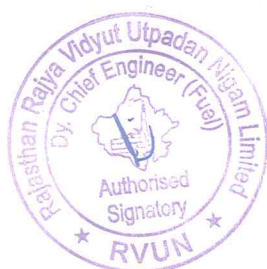
List of Volumes

Sl. No	Volume	Volume No
1	Text	Volume – I
2	Annexure	Volume – I
3	Plan	Volume – II

Mr. Rajat

K.P. SINGH

Joint Director



AS

ANANDA KUMAR MANDAL
Joint Secretary
Ministry of Coal
Government of India
New Delhi

List of Plans

Sl. No.	NAME OF DRAWING	PLATE NO	SCALE
1	Location Plan	I	NTS
2	Key Plan	II	NTS
3	Plan Showing of Block Boundary (Mining Lease Area) (Certified Map of Geological Coordinate used in Preparation of Mining Plan of Parsa Coal Block by CMPDIL.)	III	1:10000
4	Geological Plan	IV	1:10000
5	Surface Feature Plan & Topographical Plan	V	1:10000
6	Existing Land Use Pattern Plan / Revenue Map	VI	1:10000
	Floor contour plans		
7	Floor Contour Plan - Seam VI	VII	1:10000
8	Floor Contour Plan - Seam V	VIII	1:10000
9	Floor Contour Plan - Seam IV	IX	1:10000
	Seam folio & Iso grade plans		
10	Seam Folio & Iso Grade Plan - Seam VI	X	1:10000
11	Seam Folio & Iso Grade Plan Seam V	XI	1:10000
12	Seam Folio & Iso Grade Plan - Seam IV	XII	1:10000
13	Mining Cross Sections	XIII	1:2000
14	Mining System at the End of 5 th , 10 th and 20 th Year	XIV	1:2000
15	Conceptual Plan with Proposed Surface Layout	XV	1:10000
16	Total Coal and Total Overburden Thickness Plan	XVI	1:10000
17	Stripping Ratio Plan	XVII	1:10000
18	Mine Stage Plan - 1 st year	XVIII	1:10000
19	Mine Stage Plan - 3 rd year	XIX	1:10000
20	Mine Stage Plan - 5 th year	XX	1:10000
21	Mine Stage Plan - 10 th year	XXI	1:10000
22	Mine Stage Plan - 20 th year	XXII	1:10000
23	Final stage Quarry Plan	XXIII	1:10000

MINING PLAN OF PARSA COAL BLOCK – 5 MTPA (FIRST REVISION)

Sl. No.	NAME OF DRAWING	PLATE NO	SCALE
24	Final stage Dump plan	XXIV	1:10000
25	Layout Of Coal Handling Plant (CHP)	XXV	1:5000
26	Schematic Diagram Of Coal Handling Plant (CHP)	XXVI	NTS
27	Reclamation Plan	XXVII	1:10000
28	Mine closure Plan	XXVIII	1:10000
29	Project Implementation Schedule	XXIX	NTS

NTS : Not to Scale

K.R. Singh
K.R. SINGH
 Authorised Person
 Date: 05/05/2018

AK

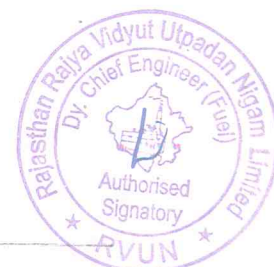
ANANDA KUMAR MANDAL
 Dy. Chief Engineer (Fuel)
 Ministry of Coal
 Government of India
 New Delhi



List of Annexure

Sl. No.	Name of Annexure	Nos.
1	Allotment letter / Vesting order of Parsa Coal Block	I
2	Copy of MOC's letter granting recognition to RQP for preparation of Mining Plan	II
3	Merger Certificate from Adani Mining Pvt. Limited (AMPL) to Adani Enterprises Limited (AEL)	III
4	Letter of Authorization in favor of Shri Kumar Rajesh Singh, Recognised Qualified Person (RQP) for preparation of Mining Plan & Mine Closure plan (First Revision) of Parsa Coal Block (5 MTPA)	IV
5	Certificate by RQP that he has been by RVUNL to prepare Mining Plan (First Revision) of Parsa Coal Block.	V
6	Certification that Mine will be developed as per the approved (First Revision) Mining Plan	VI
7	Certificate by RQP	VII
8	Certificate of approval of Earlier Mining Plan, 5 MTPA	VIII
9	Certificate of CMPDIL that the block boundary considered in the mining plan is in line with the block allotted to the project proponent	IX
10	Transfer of Geological Report From Previous Owner of Parsa Coal Block to M/s. Rajasthan Rajya Vidyut Utpadan Nigam Limited,	X
11	Water Balance Chart	XI

अनन्दा कुमार मण्डल
ANANDA KUMAR MANDAL
Joint Mining Secretary
Central Coalfield / Ministry of Coal
New Delhi / Govt. of India
VIT-8, New Delhi-110 016
30, Kirti Nagar, Delhi



List of Abbreviations

AMSL	Above Mean Sea Level
A%	Ash %
bgl	Below ground level
CSM	Continuous Surface Miner
Cum	Cubic meter
E&M	Electrical and Mechanical
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FC	Fixed Carbon
FE Loader	Front End Loader
GSI	Geological Survey of India
GCV	Gross Calorific Value
HEMM	Heavy Earth Moving Machinery
IB	Inter-burden
K.Cal/kg	Kilo Calorie per Kilogram
m	Meter
MBCM	Million Bank Cubic Meter
MCPA	Million Cubic Meter Per Annum
Mcum	Million Cubic Metre
ML	Mining Lease
Mt	Million Tons
MTPA	Million Tons Per Annum
M%	Moisture %
OB	Overburden
OC	Opencast
PA	Per Annum
RH	Relative Humidity
ROM	Run of Mine
RQP	Registered Qualified Person
SC	Scheduled Cast
SPM	Suspended Particulate Matter
ST	Scheduled Tribe
TS	Topsoil
UHV	Useful Heat Value
VM	Volatile Matter



Handwritten signature and stamp of ANANDA KUMAR, Dy. Chief Engineer (Fuel), Authorised Signatory, with a date stamp '10/11/2008' and 'Delhi'.

SUMMARISED DATA

1. GENERAL									
a)	Name and address of the Applicant Company Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL) Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur, Rajasthan – 302 005								
b)	Name and address of the Block Allottee Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL) Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur, Rajasthan – 302 005								
c)	Relationship between the applicant and allottee company NA								
d)	Status of the Applicant Company : Central /Public Sector Undertaking/State Government Undertaking/JV Company/Pvt. Company/ Public Co/Others (Specify) State Government Undertaking								
e)	Name of the Coal Block together with name of Coalfield & State where located PARSA COAL BLOCK COAL FIELD - HASDO – ARAND, STATE - CHHATTISGARH								
f)	Date of allotment (As per Vesting Order) 08 th September, 2015								
g)	End Use of Coal/Lignite as per Approval by the Competent Authority <table border="1"> <tr> <th>Sl. No.</th> <th>Name of Specified End Use Plant</th> </tr> <tr> <td>1</td> <td>Chhabra TPP, Unit 3 to 6</td> </tr> <tr> <td>2</td> <td>Kalisindh TPP, Unit-182</td> </tr> <tr> <td>3</td> <td>Suratgarh Supercritical TPP, Unit-7&8</td> </tr> </table>	Sl. No.	Name of Specified End Use Plant	1	Chhabra TPP, Unit 3 to 6	2	Kalisindh TPP, Unit-182	3	Suratgarh Supercritical TPP, Unit-7&8
Sl. No.	Name of Specified End Use Plant								
1	Chhabra TPP, Unit 3 to 6								
2	Kalisindh TPP, Unit-182								
3	Suratgarh Supercritical TPP, Unit-7&8								
h)	ROM Quantity proposed to be produced as per Mining Plan 5 Mty								
i)	Norms adopted for calculating ROM quantity requirement in case it differs from the quantity indicated in the Allotment Order, See table Below:-								

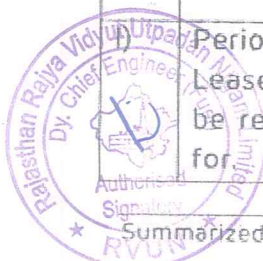


MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

	Power Plant (MW)		
	Chhabra Thermal Power Project, Unit -3 to 6	Kalisindh Power Project, Unit - 1 & 2	Suratgarh Supercritical TPP, Unit- 7 & 8
	1820 MW	1200 MW	1320 MW
Coal availability from this project (MTPA)	2	1	2
Washed coal availability (MTPA)	1.55	0.775	1.55
Reject (MTPA)	0.45	0.225	0.45
Thermal Power Plant/Sponge Iron	Thermal Power Plant	Thermal Power Plant	Thermal Power Plant
Station Heat Rate (K.Cal/KWHrs)	# 3 & 4 - 2500 # 5 & 6 - 2250	2375	2250
Avg. Calorific Value of coal (K.Cal/Kg)	4000-4300	4000-4300	4000-4300
Specific Consumption (Kg/Kwhr)	0.602 (Unit 3 & 4) 0.542 (Unit 5 & 6)	0.572	0.542
Plant Load Factor/Capacity Utilization	85%	85%	85%
Coal Requirement (MTPA)	7.855	5.305	5.528
Coal availability from this project (MTPA) (ROM)	2.0	1.0	2.0
Linkages/E-auction from CIL (MTPA)			
Other block of the Company (MTPA)	6.0	5.31	3.69
Percentage of end use requirement to be met from this mine	26 %	19 %	36 %

Annually generated 1.125 Mt rejects will be utilized in FBC based Thermal Power Plant which is located in adjacent coal block i.e. Parsa East & Kanta Basan Coal Block. Location of FBC based thermal power plant is shown in Plate No - II & V

j)	Beneficiation required - Yes/No	yes								
k)	Proposed End Use Projects linked with Coal Block with raw coal requirement	<table><tr><th>Sl. No.</th><th>Name of Specified End Use Plant</th></tr><tr><td>1</td><td>Chhabra TPP, Unit 3 to 6</td></tr><tr><td>2</td><td>Kalisindh TPP, Unit-1&2</td></tr><tr><td>3</td><td>Suratgarh Supercritical TPP Unit-7&8</td></tr></table>	Sl. No.	Name of Specified End Use Plant	1	Chhabra TPP, Unit 3 to 6	2	Kalisindh TPP, Unit-1&2	3	Suratgarh Supercritical TPP Unit-7&8
Sl. No.	Name of Specified End Use Plant									
1	Chhabra TPP, Unit 3 to 6									
2	Kalisindh TPP, Unit-1&2									
3	Suratgarh Supercritical TPP Unit-7&8									
l)	Period for which Mining Lease has been granted/is to be renewed/ is to be applied for	30 years and to be renewed up to project life. <i>16.09.2014</i>								

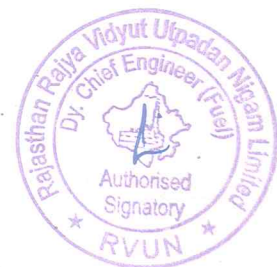


Summarized Data

MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

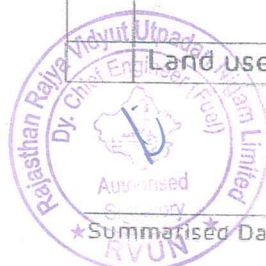
m)	Date of Expiry of earlier Mining Lease, if any	Mining lease is not yet Granted.
n)	RQP who has prepared the Mining Plan Name Address Phone No/Fax/Email ID Registration No & date till valid Date of grant/Renewal of RQP Status Validity	Kumar Rajesh Singh Adani House, plot No 83, Sector 32, Gurgaon, Haryana, India - 122002 RQP No. : -34011(29)/2008 - CPAM

अतिरिक्त सचिव
ANANDA KUMAR MANDAL
Under Secretary
Ministry of Coal
Govt. of India
New Delhi



MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

2. Information regarding earlier approved Mining Plans, if any.			
a)	Approval Letter no. and Date • Earlier Mining Plan (5 MTPA)	13016/90/2006-CA-I dated 19 th May, 2014.	
b)	Lease Area	1252.447 Ha	
c)	Date of grant of Lease	NA	
d)	Date of Expiry of Lease	NA	
e)	Targeted Production	5 MTPA	
f)	Proposed date of start of Production	NA	
g)	Proposed date of achieving the targeted production level	NA	
h)	Envisaged life of the mine (in years)	41 years	
i)	Date of actual commencement of Mining Operations, if operations already started	NA	
j)	Likely date of Mining Operations, if operations not yet started & reasons for non-commencement of operations	NA	
k)	Planned production and actual levels achieved in last 3 years Coal :- U/G TOTAL	NA NA NA	
l)	Reasons for difference between the planned and actual production levels	NA	
m)	Reason for revision of the Mining Plan	1 End use plant has been changed due to change of block allottee. 2 Construct washery for Parsa Coal Project	
n)	Details of changes in the new mining plan compared to earlier approval	Old Plan (5 MTPA)	(5 MTPA), First Revision
	(i) Lease Area	1252.447 Ha	1252.447 Ha
	(i) Block Boundary	1252.447 Ha	1252.447 Ha
	(i) Production level	5.00 MTPA	5.00 MTPA
	(ii) Coal Reserves		
	a. Geological (Gross)	230.76 Mt	230.76 Mt
	b. Mineable	184.26 Mt	200.41 Mt
	(i) Mining Technology (Additional sheets to be used, if required)	Coal- Surface miner OB - shovel dumper combination	Coal- Surface miner OB - shovel dumper combination
	Land use pattern	1252.447 Ha	1252.447 Ha



(RQP NO. 34011/25/2008-CPAM)

MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

3. LOCATION		
a)	Location of the Block Taluka/Village/Khasra/Plot/Block Range/etc. District / State	Parsa coal block Tehsil - Udaipur & Premnagar District.- Surguja & Surajpur, State - Chhattisgarh
b)	Name of the Coalfield/ Coal belt	Hasdo - Arand Coal Field
c)	Particulars of adjacent blocks: North, South, East, West	North: No identified block South: No identified block, East: Parsa East & Kanta Basan Coal Block West: Tara Coal Block
d)	Area of the Allotted Block (hectares) i Geological block area ii Mining Block Area	1252.447 Ha 1252.447 Ha
e)	Reference no. of plan of block boundary issued by CMPDI/ SCCL/ NLC (A copy of the Plan along with the coordinates of the boundaries to be annexed)	Reference no. of plan of block boundary issue by CMPDIL:- CMPDI / BD / C (886) / 266 Dated:- 08.06.2016
f)	Whether the lease boundary/required boundary is same as demarcated by CMPDI/ SCCL/ NLC for delineating block/sub-block	Yes
g)	Existing mining Lease Area in case of existing mines, (hectares)	1252.447 Ha
h)	Applied/ required Lease Area as per the Mining Plan under consideration (hectares)	1252.447 Ha
i)	Whether the applied lease area falls within the allotted block	Yes
j)	Area (hectares) of lease which falls outside the block/sub-block delineated by CMPDI/SCCL/NLC.	Nil
k)	Details of outside area: - Whether forms part of any other coal block - Whether it contains any coal/lignite reserves - Purpose for which it is required, e.g. roads/ OB dumps/ service buildings/ colony/ safety zone/ others (specify)	NA NA NA <i>K. Singh</i> K. P. SINGH 2016.06.08
l)	Whether some part(s) of the allotted block has not been applied for mining lease. - Total area in Ha. of such part(s). - Total reserves in such part(s). - Brief reasoning for leaving such part(s).	NA <i>G. S.</i> अभिषेक कुमार मुखर्जी ANANDA KUMAR MANDAL अभिषेक कुमार मुखर्जी / Under Secretary कोयला विभाग / Ministry of Coal भारत सरकार / Govt. of India शांति भवन / Shanti Bhawan एन.एन.टी. रोड / New Delhi
m)	Type of Land involved in Hectares	

MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

	<ul style="list-style-type: none"> - Forest Land - Govt Land - Tenancy Land - Chhote Bade Jhar Ka Jungle o Total 	<p>556.004 Ha</p> <p>45.543 Ha</p> <p>365.366 Ha</p> <p><u>285.534 Ha</u></p> <p>1252.447 Ha</p>																								
n)	Broad Land Use Pattern (Forest, Township, Industrial, Agricultural, Grazing, Barren etc.)	<table border="1"> <thead> <tr> <th colspan="3">Broad Land Use Pattern "Ha"</th> </tr> </thead> <tbody> <tr> <td rowspan="7">Tenancy</td><td>Agriculture</td><td rowspan="7">365.336</td></tr> <tr> <td>Township</td></tr> <tr> <td>Grazing</td></tr> <tr> <td>Barren</td></tr> <tr> <td>Water Bodies</td></tr> <tr> <td>Road</td></tr> <tr> <td>Community Inhabitated</td></tr> <tr> <td rowspan="4">Govt. Non-Forest</td><td>Non Agriculture</td><td rowspan="4">45.543</td></tr> <tr> <td>Township</td></tr> <tr> <td>Grazing</td></tr> <tr> <td>Barren</td></tr> <tr> <td>Forest</td><td></td><td>841.538</td></tr> <tr> <td>Total</td><td></td><td>1252.447</td></tr> </tbody> </table>	Broad Land Use Pattern "Ha"			Tenancy	Agriculture	365.336	Township	Grazing	Barren	Water Bodies	Road	Community Inhabitated	Govt. Non-Forest	Non Agriculture	45.543	Township	Grazing	Barren	Forest		841.538	Total		1252.447
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	Barren																									
Forest		841.538																								
Total		1252.447																								
o)	Proximity of public road / railway line/major water body if any and approximate distance	<p>Block is connected to the State Highway -2A and passing at a distance of about 0.5 km from its northwestern corner.</p> <p>Nearest railhead Bistrampur on the Bijuri-Ambikapur section of the South East Central Railway (SECR)</p> <p>(New Railway Line from Surajpur RS to Pit Head is in under Construction)</p> <p>Major water body - No major water body.</p>																								
p)	Topo sheet No. with latitude and longitude	<p>Toposheet no. 64J/13</p> <p>Latitude</p> <p>22°48'57.01" N & 22°51'56.85" N</p> <p>Longitude</p> <p>82°45'10.50" E & 82°47'22.86" E</p>																								

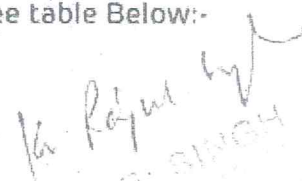
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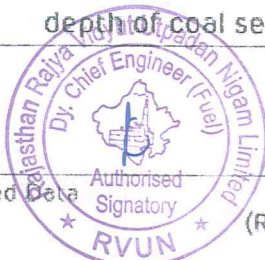
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MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

4. GEOLOGY AND EXPLORATION			
a)	Name of the Geological Block and area in hectares	Parsa coal block, 1252.447 Ha.	
b)	Name of the Geological Report (GR) with year of preparation	Geological report of Parsa Coal Block. April, 2012	
c)	Name of the agency which conducted exploration and prepared GR	Adani Mining Private Limited, Allottee company has given work order to Adani Mining private Limited for Exploration and preparation of Geological report.	
d)	Period of conducting exploration	November, 2011- March, 2012	
e)	Details of drilling (by all agencies)	Agency	No. of Boreholes
		GSI	7
		AMPL	107
		Total	114
		Meterage	
		2,457.50	
		13,062.00	
		15,519.50	
f)	No. of boreholes drilled within the block	114	
g)	Overall borehole density within the block (no./sq. km)	9.11 per sq. km	
h)	Area covered by 'detailed' exploration within the block (hectares)	1252.447 Ha	
i)	Area covered by 'detailed' exploration outside the block (hectares) - No. of boreholes drilled outside the block - Bore hole density for outside area (no./sq. km)	NA	
		Na	
		Na	
j)	Whether entire lease area has been covered by 'detailed' exploration.	Yes	
k)	Whether any further exploration is required or suggested and timeframe in which it is to be completed	No	
l)	Number of coal/lignite seams/horizons - thickness range of coal seams - mean Thickness of total coal horizon - Standard Deviation of thickness - Minimum & maximum depth of coal seams	See table Below:-  K. RAJU SINGH Date: 05/05/2016	



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नई दिल्ली / New Delhi

Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
 Dy. Chief Engineer (Electrical)
 Jaipur
 Authorised
 Signature
 RVUN

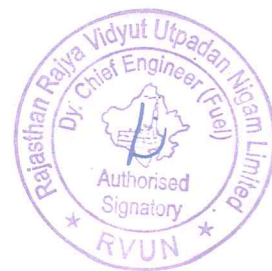
MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

	by opencast by Underground	256.40 Mt Nil
s)	Corresponding Extractable reserves: by opencast by underground	200.41 Mt Nil
t)	Percentage of recovery w.r.t. geological reserves: by opencast by Underground	78.16 % Nil

Handwritten signature: M. Raju
Stamp: CHIEF ENGINEER (FUEL) RVUN
Date: 08/08/2018

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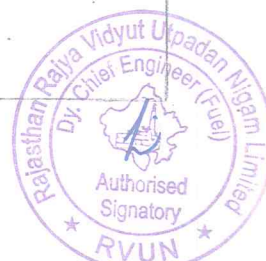
MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

5. MINING						
a)	Existing and proposed method of mining				By Opencast:-	
	<ul style="list-style-type: none"> (Opencast for OB & coal separately with dragline/ shovel/ surface miners/ manual/ etc.) (underground by longwall/ bord & pillar/ continuous miners/LHD/ SDL/ manual/ etc.,) 				OB : Shovel-dumper Coal : Surface miner Nil	
b)	Targeted capacity in mty when the mine is fully developed and the year in which proposed to be achieved				NA	
	By Underground :				5.00 MTPA (3rd year of mine operation)	
	By opencast :				5.00 MTPA (3rd year of mine operation)	
	Total :				5.00 MTPA (3rd year of mine operation)	
c)	Life of the mine :				45 including 3 year construction period	
	Underground workings :					
	Opencast workings :				45 including 3 year construction period	
	Overall :				45 including 3 year construction period	
d)	d) Indicate quantum of production and expected grade as in table below :-					
	Year	By UG (Mt)	Opencast			
			Year	Production (Mt)	OB (Mcu m)	Stripping ratio (cum/t)
	Year wise till targeted production is reached	Not Applicable	Yr-1	1.50	3.51	2.34
Yr-2			3.00	6.07	2.02	
Yr-3			5.00	12.60	2.52	
Yr-4			5.00	12.60	2.52	
Yr-5			5.00	12.60	2.52	
e)	Furnish the detailed calendar programme of coal production year wise and seam wise along with OB removal in the chapter V					
	Whether the proposed external OB dump site is coal/ lignite bearing: If so, whether coal/lignite below waste disposal area is extractable.				External OB dump is non-coal bearing.	
f)	Whether negative proving for coal / lignite in the proposed site for OB dump infrastructure has been done.				Yes	
g)	Proposed configuration of NEMM for OC (Coal & OB)					

MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

Sl No	Particulars	Size/Cap	Year Wise Phasing							
			1	2	3	4	6	13	23	29
A	Overburden									
1	Diesel Hyd. Shovel	15 Cum	0	1	2	2	4	7	10	13
2	DH Shovel	3.0 Cum	5	5	6	6	6	4	3	1
3	Rear Dumper	100 T	0	6	11	11	25	43	61	80
4	Dump truck	35 T	25	25	30	30	37	25	19	7
5	Drill	250 mm	0	1	2	2	3	4	6	8
6	Dozer	410 hp	1	2	3	3	4	6	7	8
7	Wheel dozer	320 hp		1	1	1	2	2	2	2
8	Drill	160 mm	2	2	2	2	2	1	1	1
B	Coal									
1	FEL	4.5 Cum	1	1	2	2	2	2	2	2
2	Dump truck	35 T	5	5	10	12	12	12	12	12
3	Surface Miner	3800 SM	1	1	2	2	2	2	2	2
C	Common									
1	Grader	280 hp	1	1	2	2	2	2	2	2
2	Crane	50T				1	1	1	1	1
3	Crane	30 T		1	2	2	2	2	2	2
4	Crane	10/8/5 T	1	1	2	2	2	2	2	2
5	Diesel B'hoer	0.9-1.2 Cum	1	1	1	1	1	1	1	1
6	Vibratory compactor	25 T	1	1	1	1	1	1	1	1
7	Fork lift truck			1	2	2	2	2	2	2
8	Tyre handler			1	2	2	2	2	2	2
9	Mobile Maintenance Van		1	1	2	2	2	2	2	2
10	Water sprinkler	28kl	1	4	6	6	6	6	6	6
11	Fuel bowser	12 KL	1	1	2	2	2	2	2	2
12	Tipping Truck	8 T	1	1	2	2	2	2	2	2
13	Dozer	410 HP	1	2	2	2	2	2	2	2
14	Fire Tender			1	1	1	1	1	1	1
h)	Mode of entry for underground mines (shaft, incline, adit)	Not Applicable (Opencast working)								
i)	Operations that are proposed to be outsourced	Coal and OB operations is proposed to be Outsourced								
	Proposed coal evacuation facilities 1. Face to Surface 2. Surface to end use plants	1. By combinations of Dump Truck and Belt Conveyor. 2. By Rail.								

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Joint Secretary
Ministry of Coal
Government of India
New Delhi



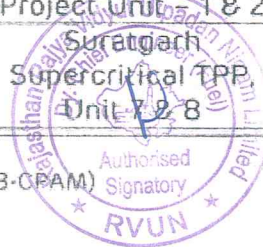
MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

6. END USE OF COAL/ LIGNITE		
a)	Capacity of the approved end use plants	Power Plant (MW)
		Chhabra Thermal Power Project Unit -3 to 6 1820 MW
		Kalisindh Power Project Unit - 1 & 2 1200 MW
		Suratgarh Supercritical TPP, Unit - 7 & 8 1320 MW
b)	Coal/ lignite requirement for end use plant with grade/quality	5.00 MTPA ROM
c)	%age of end use requirement to be met from this mine	Power Plant (MW)
		Chhabra Thermal Power Project Unit -3 to 6 26 %
		Kalisindh Power Project Unit - 1 & 2 19 %
		Suratgarh Supercritical TPP, Unit - 7 & 8 36 %
d)	If washing / beneficiation of the coal/ lignite is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the beneficiation and recovery rate.	<p>Plant capacity Quality of Raw Coal: 39.75% (Approx.) Moisture of Raw Coal: 6.3% (at 60% RH & 40°C) Approx.</p> <p>Quality & quantity of Washery product</p> <p>Clean Coal: 32% Ash (3.80 MTPA) Approx. Rejects: 60% Ash (1.20 MTPA) Approx. Yield : 77.5 %</p>
e)	Proposed Use of Rejects/Middlings	Rejects are envisaged to generate Power by FBC Power Plant.
f)	Distance of end use power plant	Power Plant and Distance
		Chhabra Thermal Power Project Unit -3 to 6 830 Kms
		Kalisindh Power Project Unit - 1 & 2 1080 Kms
		Suratgarh Supercritical TPP, Unit - 7 & 8 1700 Kms

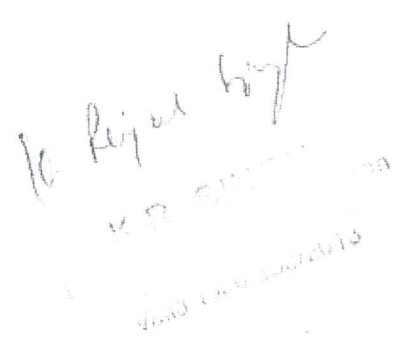
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7. ENVIRONMENTAL MANAGEMENT

a)	Existing land use pattern	Pre Mining land Use "Ha"		
		Tenancy	Agriculture Township	365.336
			Grazing	
			Barren	
			Water Bodies	
			Road	
			Community	
			Inhabitated	
		Govt Non	Non Agriculture Township	45.543
			Grazing	
Barren				
Forest		841.538		
Total		1252.447		
b)	Land area (In Ha.) indicating the area likely to be degraded due to mining, dumping, roads, workshop, washery, township etc. 	PARTICULAR		Land in Ha
		MINING		
		EXCAVATION AREA & BARRIER		1,129.375
		INFRASTRUCTURE & OB DUMP AREA		
		EXTERNAL DUMP		64.084
		TOP SOIL DUMP		2.600
		ELECTRIC LINE & INFRASTRUCTURE AREA		13.228
		COAL EVACUATION ROUTE & APPROACH ROAD		2.370
		CHP & WASHERY		13.586
		DIVERSION OF NALA		14.801
		SETTLING POND		2.260
		RATIONALIZATION AREA		10.143
		TOTAL (B)		123.072
		GRAND TOTAL (A + B)		1,252.447
		c)	Surface features over the block area	No Major Surface feature
d)	No. of villages/Houses to be shifted	Six villages namely Tara, Fatepur, Ghatbara, Hariharpur, Salhi. And Janardanpur/141 Houses.		
e)	Population to be affected by	4181 Persons		
f)	Year wise proposal for reclamation of land affected by mining activities	Given in Chapter X		
g)	Monitoring schedules for different	For air quality	Two days in a	

Summarised Data

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शांति भवन / Shanti Bhavan

MINING PLAN OF PAKSA COAL BLOCK – 5 MTPA (FIRST REVISION)

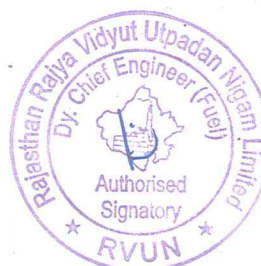
environmental components after the commencement of mining and other related activities.		month at each station (once in a fortnight).
	For water and effluent quality	Once in a month for each station (for drinking water quality), once in a fortnight (for 4 parameters) and once in a year (23 parameters) (for effluent quality)
	For ground water level monitoring	4 times in a year in a year (i.e. April/May, August, November & January)
	For noise level	Once in a day-time and once in a night-time in fortnight from each station.

for Rajesh Singh

K.R. SINGH
20/08/2018

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ANANDA KUMAR SHARMA
Secretary
Ministry of Coal
Government of India
New Delhi / New Delhi

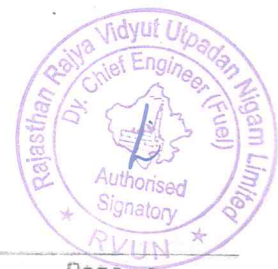


8. PROGRESSIVE AND FINAL MINECLOSURE PLAN (A separate chapter is also to be incorporated)	
1	Dismantling of Structures
	Service Buildings
	Residential Buildings
	Industrial structures like CHP, Workshop, Field, Sub-station, etc.
2	Permanent Fencing of mine void and other dangerous area
	Random rubble masonry of height 1.2 metre including leveling up in cement concrete 1:6:12 in mud mortar
3	Grading of high wall slopes
	Levelling and grading of high wall slopes
4	OB Dump Reclamation
	Handling/Dozing of external OB Dump into mine void
	Bio-reclamation including soil spreading, plantation and maintenance
5	Landscaping
	Landscaping of the cleared land for improving its esthetic
6	Plantation
	Plantation over area obtained after dismantling
	Plantation around the fencing
	Plantation over the cleared off external OB Dump
7	Monitoring/testing of parameters for three years
	Air Quality
	Water Quality
8	Entrepreneurship Development (Vocational/skill development training for sustainable income of affected people)
9	Miscellaneous and other mitigative measures
10	Manpower cost for supervision

Approximately Rs. 378.43 Crs. (Cost base July, 2016) will be deposited in Escrow Account as per the guidelines for Mine Closure circulated by Ministry of Coal.

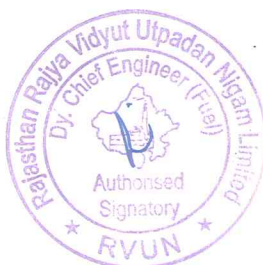
Details of closure cost have been incorporated in the Mine Closure Chapter and Report.

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अखिल कोयला / Ministry of Coal
मंत्रालय - ई. ई. / Govt. of India
आर. टी. रोड, शास्त्री भवन
48, B-1/2, New Delhi



MINING PLAN OF PARSA COAL BLOCK - 5 MTPA (FIRST REVISION)

9. OTHERS	
a) Base date of Mining Plan.	June, 2016
b) Calendar year from which the production will start	2019-20 (As per First revision)
	As per the efficiency parameter given by MoC, coal production will start during 2019 - 20. However best effort will be taken to start coal production before 2019 - 20. Construction period will be of three years.
c) Results of any investigation carried out for scientific mining, conservation of minerals and protection of environment; future proposals.	Not Applicable
d) Signature of RQP	<i>K.R. Singh</i>
Date	15/9/2016
Place	Wingara



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 Joint Secretary Under Secret
 Ministry of Coal
 Government of India
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K.R. SINGH
 Dy. Chief Engineer (Fuel)
 RVUN
 Valid till 30/09/2016