



MCL

MAHANADI COALFIELDS LIMITED

(A Subsidiary of Coal India Limited)

Presentation on Compliance of EC conditions in respect of Lakhanpur OCP of MCL.

Date: 19.07.2021-Reviewed by Secretary (Coal), Ministry of Coal

CONTENT

Sl No	Description	Slide No
1	Introduction	3
2	Location of Lakhanpur OCP	4
3	Location Plan of Lakhanpur OCP	5
4	Brief note on Environment Clearance of Lakhanpur OCP	6
5	Observation of last inspection of Regional Office, MoEF&CC, Bhubaneswar	7
6	Summary of compliance of EC conditions for Lakhanpur OCP	8
7	Summary of condition-wise compliance status of EC conditions of Lakhanpur OCP	9-15
8	Summary of Environmental expenditure for last 3 years for Lakhanpur OCP	16
9	Details of environmental expenditure during last three years of Lakhanpur OCP	17
10	Pre-mining land use of Lakhanpur OCP	18-19
11	Planned land use-during mining of Lakhanpur OCP	20-21
12	Post Mining land use of Lakhanpur OCP	22-23
13	Present land use of Lakhanpur OCP	24-26
14	EC Compliance Status-details of Lakhanpur OCP	27-120



MAHANADI COALFIELDS LIMITED
LAKHANPUR OPENCAST PROJECT

Ib Valley Coalfield, Tehsil: Lakhanpur
District: Jharsuguda, Odisha

EC Capacity- 21 MTPA

EC No. J-11015/391/2012-IA.II (M), Dt. 10.01.2020

PROJECT AREA: 2452 Ha ; MINING LEASE AREA:2240 Ha

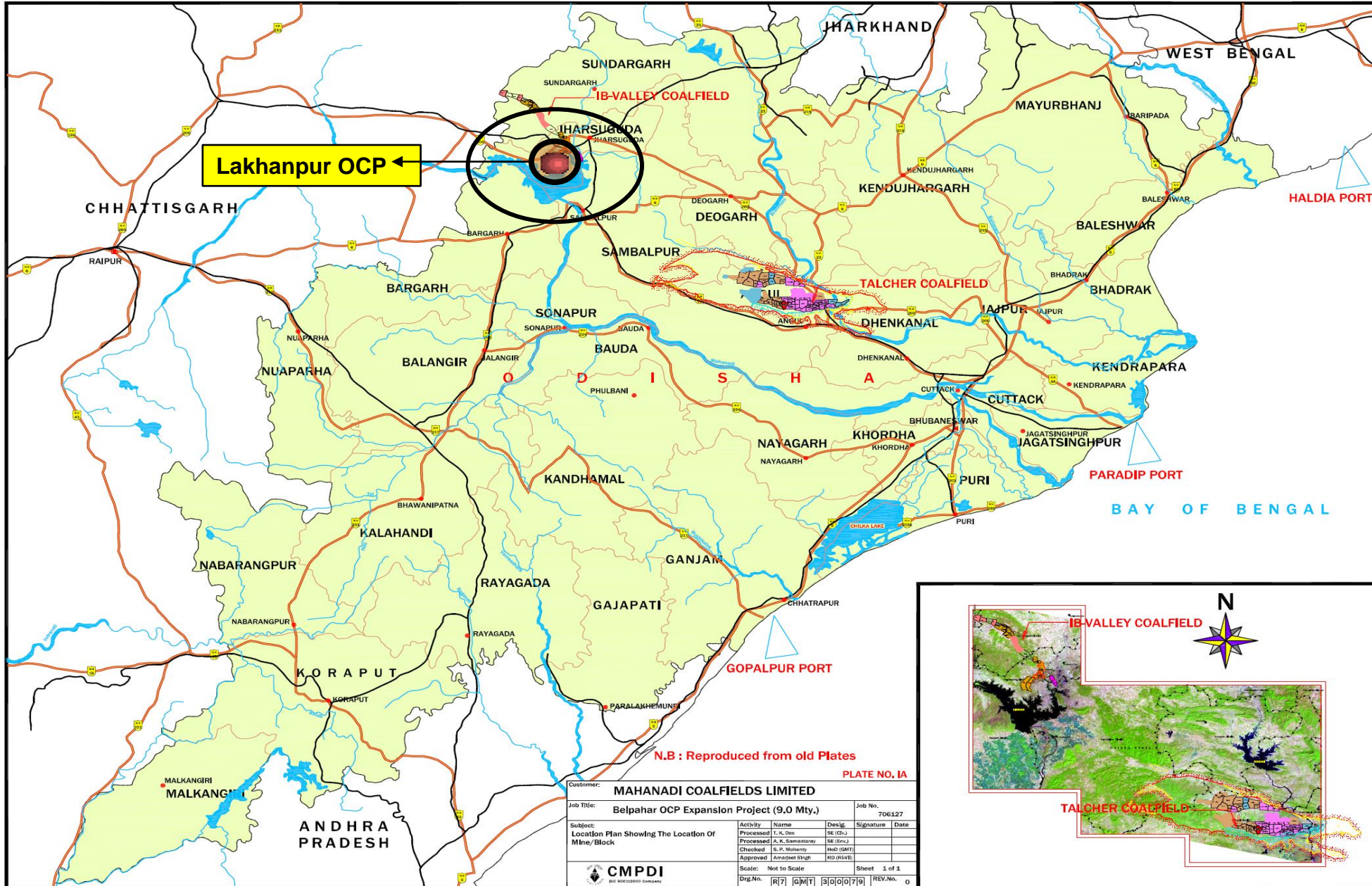
LOCATION OF LAKHANPUR OCP

- **Lakhanpur Opencast Expansion Project** is a working mine located in **Ib-Valley Coalfield, Jharsuguda district, Odisha.**

Particulars	Details
Latitude	21° 47' 32" to 21° 43' 12" (N)
Longitude	83° 47' 59" to 83° 51' 30" (E)
Survey of India Toposheet No.	64 O/13 on RF 1 : 50,000

- **Nearby operating mines:** Belpahar OCP, Samaleswari OCP & Lajkura OCP.
- **Nearest Railway station:** Belpahar railway station- 10 Km.
- **Nearest Airport:** Veer Surendra Sai Airport, Jharsuguda - 30 Km.
- **Belpahar is the nearest town which is approachable by all weather roads.**

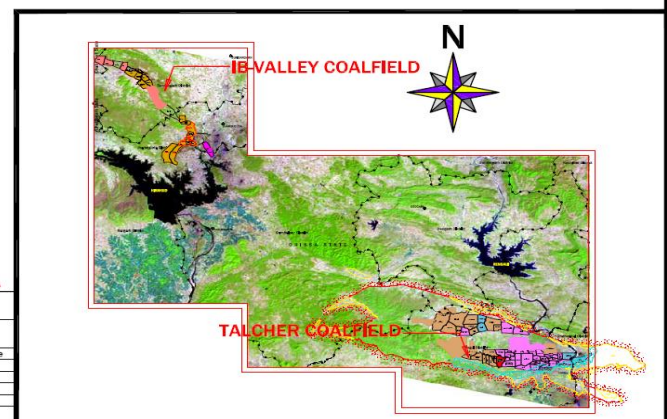
Location Plan of Lakhanpur OCP



N.B : Reproduced from old Plates

PLATE NO. IA

Customer:	MAHANADI COALFIELDS LIMITED		
Job Title:	Belpahar OCP Expansion Project (9.0 Mty.)	Job No.:	706127
Subject: Location Plan Showing The Location Of Mine/Block	Activity	Name	Desig.
	Processed	A. K. Samantary	SE (Ch.)
	Checked	S. K. Monary	MD (S&T)
	Approved	Anandjeet Singh	MD (S&T)
	Scale:	Not to Scale	
Drp.No.	R7	GMT	000079
REV.No.	0		



BRIEF NOTE ON ENVIRONMENT CLEARANCE OF LAKHANPUR OCP

- **Approved Project Report (PR) capacity of Lakhanpur OCP : 15 MTPA**
- **The mine has been accorded ECs by MoEF&CC for the following capacities :**

EC Capacity (MTPA)	EC letter	Date of issue
15.00	J-11015/638/2007-IA.II (M)	Dt: 02/07/2008
18.75 (25% expansion)	J-11015/391/2012-IA.II (M)	Dt: 21/05/2014
21.00 (40% expansion)	J-11015/391/2012-IA.II (M)	Dt: 28/02/2018 (valid for 1 Yr.)
21.00	J-11015/391/2012-IA.II (M)	Dt: 13/02/2019 (valid for 1 Yr.)
21.00	J-11015/391/2012-IA.II (M)	Dt: 10/01/2020 (life of mine or 30 yrs which ever is earlier)

- **Forest clearance** for entire forest land, **233.43 Ha** has been **obtained** vide letter no. F.No. 8-280/69 **dt: 08-10-1990.**

Observation of last inspection of Regional Office, MoEF&CC, Bhubaneswar For Lakhanpur OCP

- To verify the Status of Compliance of EC conditions for Lakhanpur Opencast Expansion Project 21 MTPA, the **Regional Office of MoEF&CC**, Bhubaneswar has carried out **the site inspection on 31.10.2019**.
- **Certified Compliance Report** was issued by RO, MoEF&CC vide file no. 101-1029/18/EPE/151 **dtd 14.11.19** .
- **ATR** on Certified Compliance Report was submitted to Regional Office of MoEF&CC, Bhubaneswar vide letter **dtd: 25-11-2019**.
- **Recommendation of Regional Office, MoEF&CC:**
Compliance Satisfactory. Minor non-compliances detected (not of immediate danger to health & safety of the people).

Summary of compliance of EC conditions for Lakhanpur OCP

- ❑ Total number of EC conditions: **76**
- ❑ EC conditions complied: **74**
- ❑ EC condition compliance under progress: **2**
 - **Wind barrier & Vertical greenery system** at railway siding:
 - **Vertical greenery** system – 40m completed, **work** in remaining 300m is in progress, to be completed by Dec'2021.
 - **Wind barrier** – 750m length x 10m height, to be completed by Dec'2021.
 - **Planting 50,000 nos. of native trees** with broad leaves along the villages and transportation route :
 - 28,000 nos. of plantation already done.
 - 30,000 nos. saplings is being planted this monsoon through DFO, Jharsuguda.

SUMMARY OF CONDITION-WISE COMPLIANCE STATUS OF EC CONDITIONS OF LAKHANPUR OCP

SN	EC Condition no.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
		Special Conditions			
1	i	Adequate ambient air quality monitoring stations shall be established.	Complied		
2	ii	RO, MoEF&CC inspection	Complied		
3	iii	The crusher and in pit belt conveyors shall be provided with mist type sprinklers.	Complied		
4	iv	Mitigative measures to control dust and other fugitive emissions .	Complied		
5	v	Occupational Safety and other health hazards monitoring	Complied		
6	vi	Controlled blasting	Complied		
7	vii	Training and Skill development to nearby villages	Complied		
8	viii	Regular Medical camps for nearby villages	Complied		
9	<u>ix</u>	Wind barrier wall and vertical greenery system		40 m completed. Remaining by Dec'21	
10	x	Three tier multi species green belt of width not less than 7.5 m	Complied		

SN	EC Condition No.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
11	xi	Carrying Capacity of the Riverine ecosystem	Complied		
12	xii	Mitigation Plan on Carrying Capacity Study	Complied		
		General Conditions			
13	4.1 (a) i	Mining as per Mines Act 1952 and subordinate legislations.	Complied		
14	ii	No Change in mining method as per calendar programme and scope of work.	Complied		
15	iii	Mining as per approved Mining Plan and Mine Closure Plan	Complied		
16	iv	Forestry Clearance	Complied		
17	4.1 (b)i	Satellite Remote Sensing Survey of entire leasehold area	Complied		
18	ii	Surface drainage plan including surface water conservation plan, embankment on natural streams nearby.	Complied		
19	iii	Final mine void up to 40 m . Post mining land shall be rendered usable for agricultural/forestry purposes.	Future action		
20	iv	Afforestation plan as per approved Mining Plan and EIA EMP.	Complied		

SN	EC Condition no.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
21	v	Topsoil stacking at earmarked sites and vegetation on OB dumps.	Complied		
22	4.1 (c) i	Transportation of coal by road to be carried out by covered trucks/ Conveyors	Complied		
23	ii	Greenbelt - 3 tier not less than 7.5 m width	Complied		
24	iii	Bypass road for coal transportation avoiding villages nearby	Complied		
25	iv	PUC certificate for all the vehicles engaged in Mining from authorized pollution testing centers.	Complied		
26	v	Dust suppression system at coal stock/crusher/ and breaker material transfer points. Covered belt conveyor arrangements	Complied		
27	vi	CHP with mist sprinkling system	Complied		
28	vii	Rainwater harvesting structures	Complied		
29	viii	Catch/garland drains and siltation ponds around mine working, Coal heaps and OB dumps. Retention wall at the toe of OB dumps	Complied		
30	ix	Industrial wastewater from CHP, workshop and other wastewater shall be collected and properly treated.	Complied		

SN	EC Condition No.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
31	x	Adequate ground water recharge measures and supply of water to the nearby villages in case village wells go dry.	Complied		
32	4.1 (d)i	Adequate illumination in all mine locations.	Complied		
33	ii	Noise level to be below 85 dB(A)	Complied		
34	iii	Controlled blasting techniques as per DGMS guidelines	Complied		
35	iv	Noise level survey and report to be submitted to RO, MoEF&CC	Complied		
36	4.1 (e) i	Occupational health survey of workers	Complied		
37	ii	Wearing of protective respiratory devices by the personnel working in dusty areas	Complied		
38	iii	Skill training as per safety norms to all Departmental & contractual workers.	Complied		
39	4.1 f (i)	Action plan for conservation and protection of endangered flora/fauna if spotted/reported in the study area.	Complied		
40	4.1 g (i)	Implementation of the action plan on Public Hearing issues.	Complied		
41	(ii)	Expenditure on socio-economic development as per Companies Act 2013.	Complied		
42	(iii)	Mitigation measures against mining activities having impact on the habitations and villages if lying in the mining lease	Complied		

SN	EC Condition No.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
43	(iv)	Alternative areas for livestock grazing if grazing land is involved in core zone.	Complied		
44	4.1 (h) i)	Corporate Environment Policy	Complied		
45	(ii)	Hierarchical system of the Company to deal with environmental issues.	Complied		
46	(iii)	Separate Environment cell both at the project and company HQ level reporting to the Head of organization.	Complied		
47	(iv)	Year wise funds earmarked for environmental protection measures not to be diverted for any other purpose.	Complied		
48	(v)	Self environmental audit to be conducted annually and Third-party audit to be carried out once in three years	Complied		
49	4.1 (i)-i	Environment clearance subject to Hon'ble Supreme Court of India, NGT or any other court as applicable.	Complied		
50	ii	Wildlife clearance, if applicable from Standing Committee of National Board of Wildlife.	Complied		
51	iii	CTE/CTO under Air Act, 1981 and Water Act 1974	Complied		
52	iv	NOC from Central Ground Water Authority, New Delhi	Complied		

SN	EC condition No.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
53	4.1 (j)-i	Adequate air Monitoring Stations establishment and monitoring of heavy metals such as Hg, As, Ni, Cd, Cr etc.	Complied		
54	ii	Ambient Air Quality monitoring to ensure Coal Industry Standards notified vide GSR 742 (E) dated 25.09.2000.	Complied		
55	iii	Effluent discharge quality (mine water discharge, workshop effluent) monitoring to ensure Coal Industry Standards notified vide GSR 742 (E) dated 25.09.2000.	Complied		
56	iv	Uploading of Monitoring data on Company's website	Complied		
57	v	Regular monitoring of ground water level and quality four times a year- pre-monsoon, monsoon, post-monsoon and winter.	Complied		
58	vi	Monitoring of surface water quality upstream and downstream	Complied		
59	vii	Submission of half yearly monitoring reports for April-September and October-March every year.	Complied		
60	viii	Inspection by Regional Office, MoEF&CC and full cooperation needed by the project proponent in furnishing the requisite data.	Complied		
61	4.1 (k)-i	Adopting energy conservation practices.	Complied		
62	ii	Informing RO, MoEF&CC for commencement of Mining operations.	Complied		

SN	EC Condition no.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
63	iii	EC copy to Panchayat, Regional Office (SPCB) and Collector	Complied		
64	iv	Uploading of EC letter on Company's website along with compliance status of stipulated EC conditions	Complied		
65	v	Advertisement of EC granted in at least in two local newspapers	Complied		
66	vi	Submission of Environment statement for each financial year ending 31 March in Form V	Complied		
67	vii	Above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.	Complied		
		Additional Conditions			
68	i	MoC may direct CIL subsidiaries to comply the EC/FC/CTO conditions strictly within certain time bound manner so that the mining operations will be environmentally sustainable/viable etc.	Complied		
69	ii	50,000 nos. of native trees with broad leaves along the villages and transportation roads		28,000 nos. planted. 30,000 nos. by Dec'21	

SN	EC Condition no.	EC Conditions (in short)	Compliance Status		
			Complied	Under Compliance	Not Complied
70	iii	Project proponent shall comply with all statutory requirements and judgement of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and ors. State Government	Complied		
71	iv	Prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table.	Complied		
72	v	Occupational Health Specialist for Regular & Periodical medical examination of the workers engaged in the Project and maintain records accordingly	Complied		
73	vi	Mitigation measures for habitations and villages where these are the part of mine lease areas or Habitations & villages are surrounded by the mine lease area.	Complied		
74	vii	Illumination and sound levels shall be within prescribed limits so that the biological clock nearby villages shall not being disturbed.	Complied		
75	viii	Conservation and protection of endangered fauna , if any, spotted in the study area.	Complied		
76	ix	The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	Future action		

SUMMARY OF ENVIRONMENTAL EXPENDITURE OF LAKHANPUR OCP FOR LAST THREE YEARS

Year	Expenditure (Rs. Crores)
2018-19	11.45
2019-20	10.21
2020-21	12.17

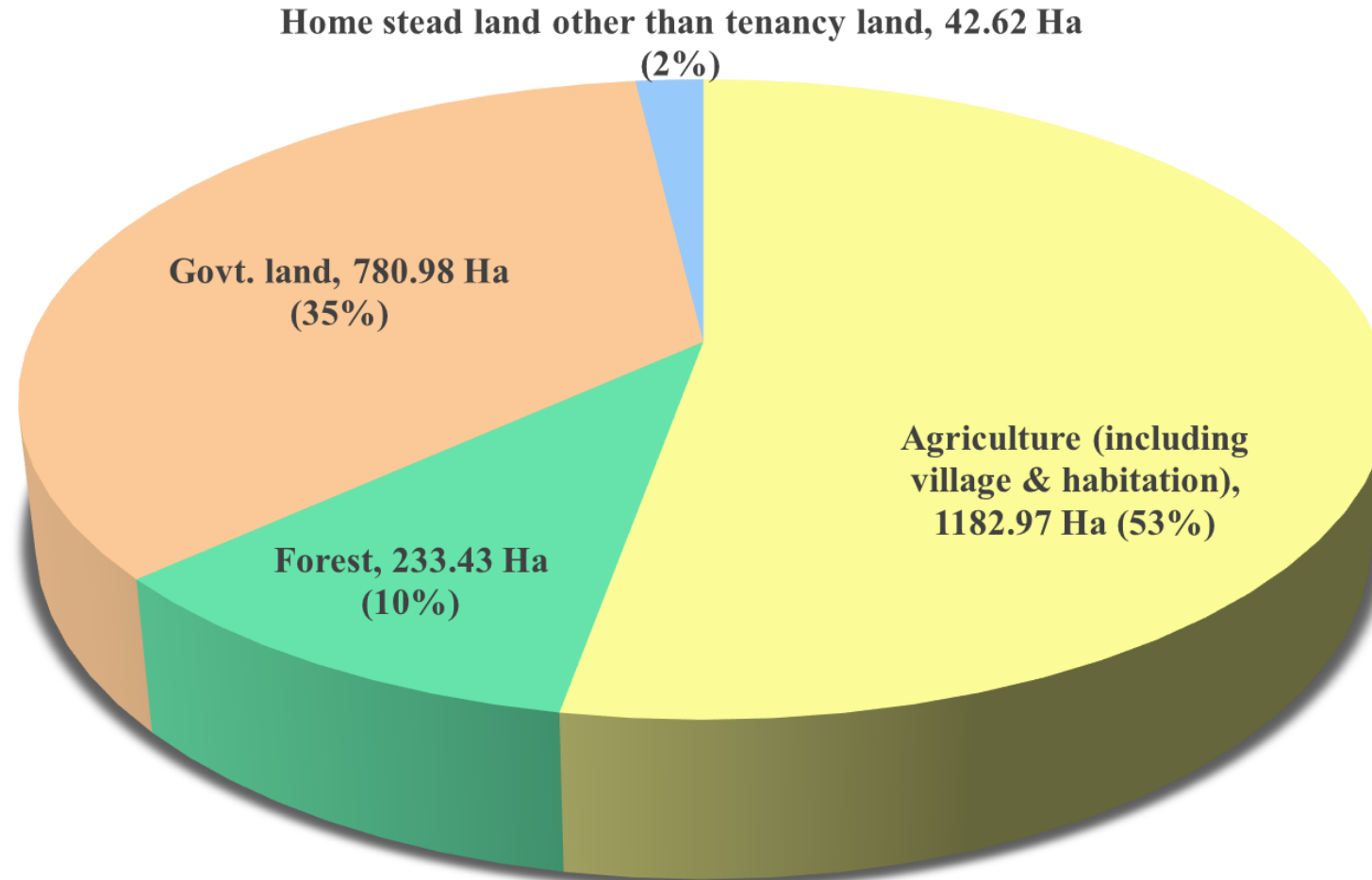
DETAILS OF ENVIRONMENTAL EXPENDITURE OF LAKHNAPUR OCP DURING LAST THREE YEARS

Sl. No.	Expenditure under	Expenditure during the years (Rs. Crores)		
		2018-19	2019-20	2020-21
1	Restoration of land (Plantation and Horticulture practices)	0.21	0.34	0.64
2	Community Development	0.88	1.92	2.59
3	Pollution control measures (ETP, STP & MDTP maintenance, Water spraying through fixed sprinklers, instant shower system, fog canons, Monsoon preparedness plan, Pond renovation, etc.)	9.09	6.72	6.45
4	Routine Environmental Monitoring Works	0.43	0.39	0.45
5	Environmental Statutory Payments	0.84	0.84	2.04
Total		11.45	10.21	12.17

PRE-MINING LAND USE PATTERN-LAKHANPUR OCP

Area (in Ha)						
Forest land	Agriculture land (including village & habitation)	Homestead land other than tenancy land	Water Body	Govt. Land	Barren Land	Total
233.43	1182.97	42.62	0	780.98	0	2240

PRE-MINING LAND USE DETAILS-LAKHANPUR OCP

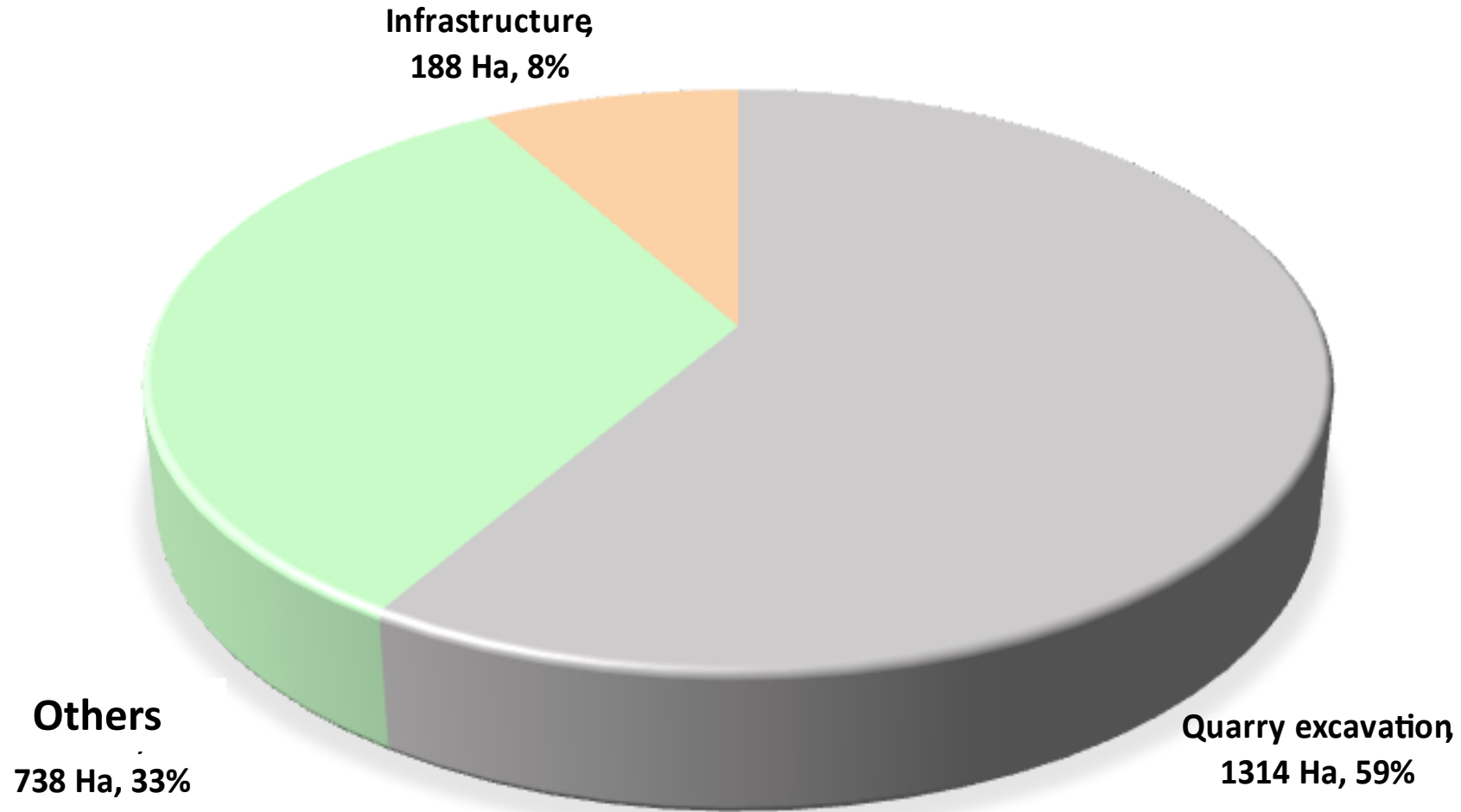


MINE LEASE AREA: 2240 Ha

PLANNED LAND USE - DURING MINING-LAKHANPUR OCP

Purpose	Forest	Non-forest	Total
Quarry Excavation	227.10	1086.90	1314.00
Others		738.00	738.00
OB dump (external)	OB area of 38.40 ha falls in safety zone		
Infrastructure	6.33	181.67	188.00
Mining lease area	233.43	2006.57	2240.00
Residential Colony	--	60	60
Resettlement Site	--	152	152
Grand Total :	233.43	2218.57	2452.00

PLANNED LAND USE DETAILS-DURING MINING-LAKHANPUR OCP

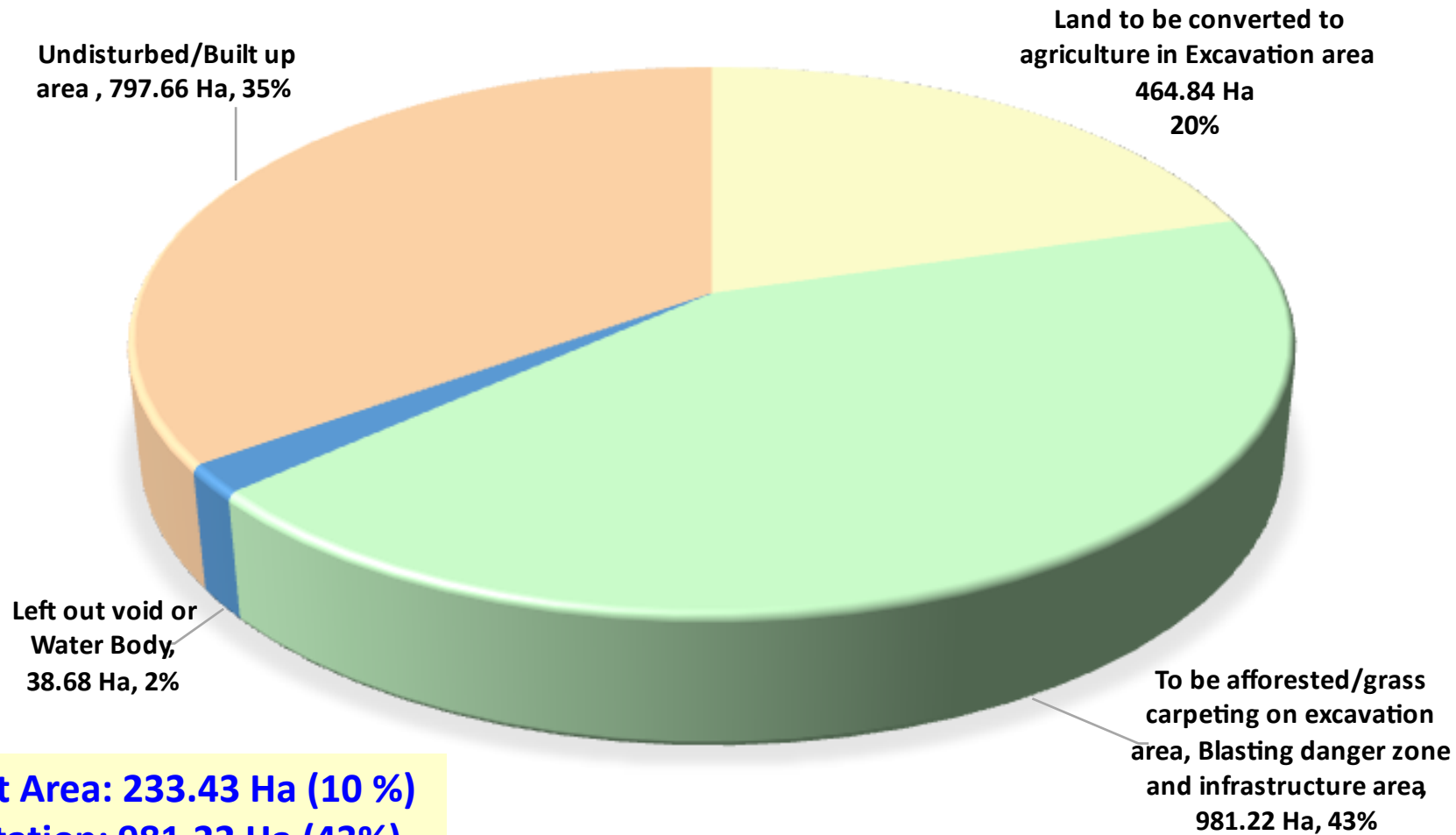


Total Mine Lease Area: 2240 Ha

POST MINING LAND USE-LAKHANPUR OCP

S No	Pattern of utilization	Area (Ha)
1.	Land to be converted to agriculture (Quarry Excavation area)	464.84
2.	To be afforested or arboriculture/grass carpeting (Excavation area, Blasting danger zone and infrastructure area)	981.22
3.	Left out void or Water Body	38.68
4.	Undisturbed/Built up area	797.66
Total		2240.00

POST MINING LAND USE-LAKHANPUR OCP



Pre-Mining Forest Area: 233.43 Ha (10 %)
Post Mining Plantation: 981.22 Ha (43%)

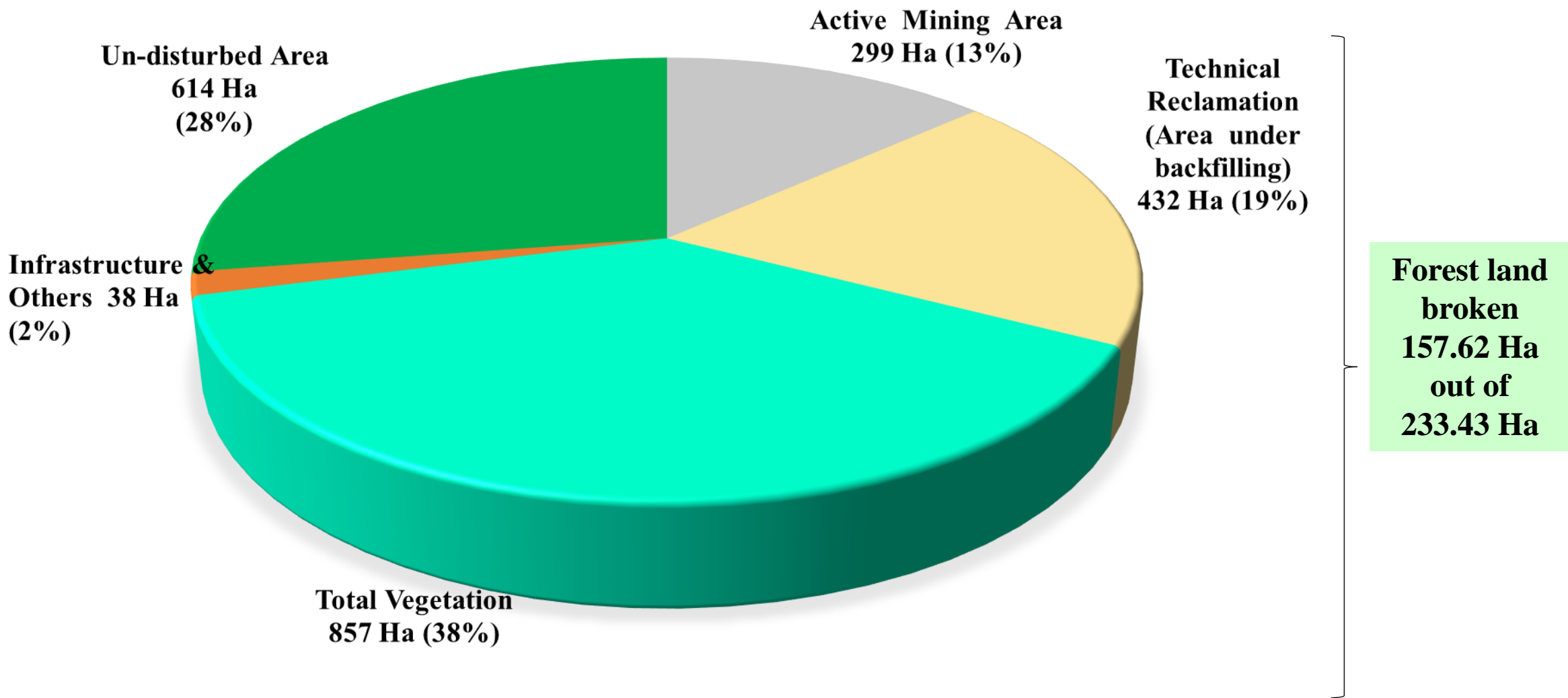
Total Mine Lease Area: 2240 Ha

PRESENT LAND USE BASED ON SATELLITE DATA OF THE YEAR 2020

LAKHANPUR OCP

Present land use of lease area (in Ha)						Forest Land Broken (Ha)
Active Mining Area	Technical Reclamation (Area under backfilling)	Total Vegetation	Infrastructure and others	Un-disturbed Area	Total	
299.00	432.00	857.00	38.00	614.00	2240.00	157.62

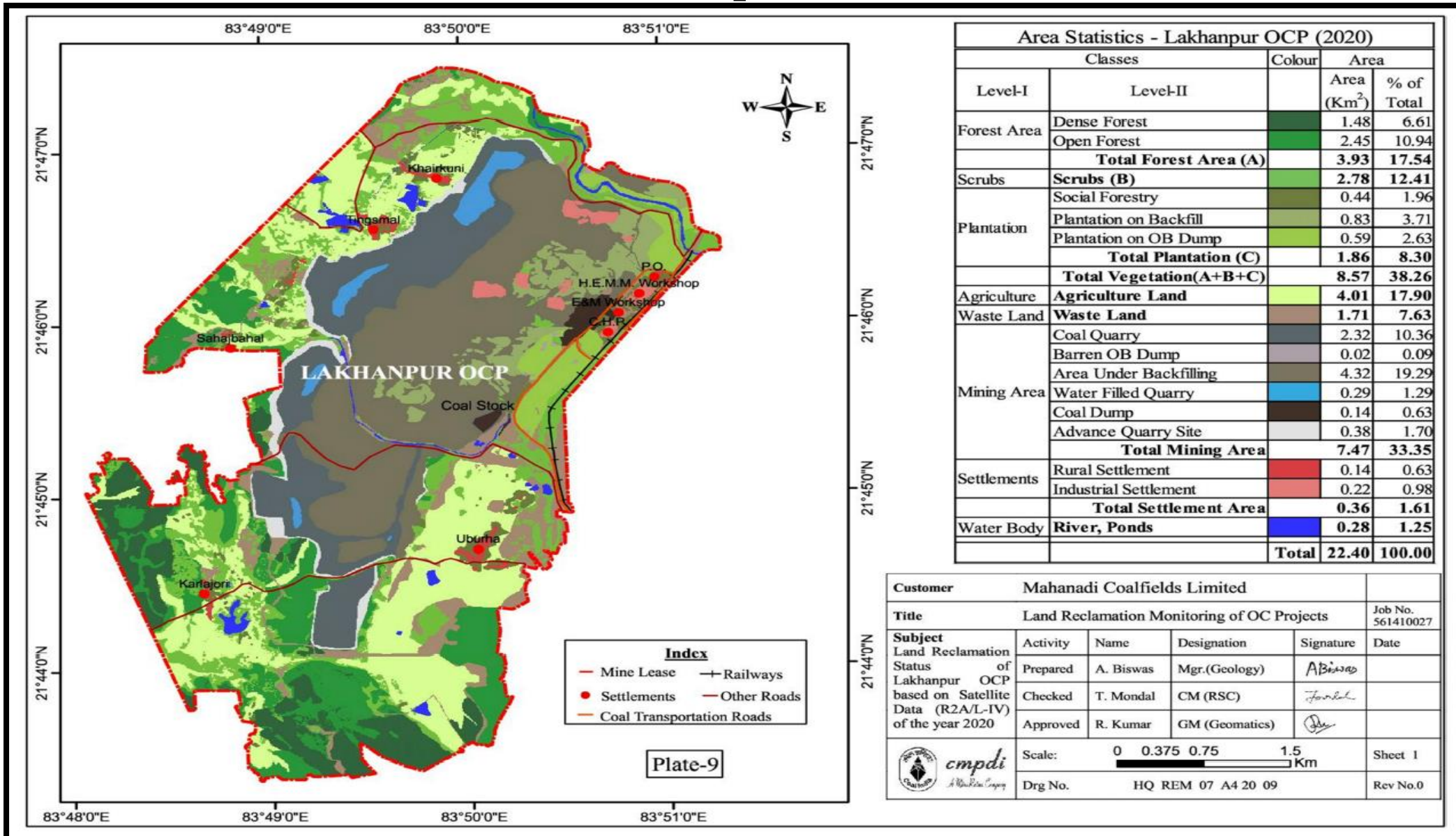
PRESENT LAND USE DETAILS-LAKHANPUR OCP



Total Leasehold Area: 2240 Ha

Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing -2020

Lakhanpur OCP



Area Statistics - Lakhanpur OCP (2020)				
Classes		Colour	Area	
Level-I	Level-II		Area (Km ²)	% of Total
Forest Area	Dense Forest		1.48	6.61
	Open Forest		2.45	10.94
Total Forest Area (A)			3.93	17.54
Scrubs	Scrubs (B)		2.78	12.41
Plantation	Social Forestry		0.44	1.96
	Plantation on Backfill		0.83	3.71
	Plantation on OB Dump		0.59	2.63
Total Plantation (C)			1.86	8.30
Total Vegetation(A+B+C)			8.57	38.26
Agriculture	Agriculture Land		4.01	17.90
Waste Land	Waste Land		1.71	7.63
Mining Area	Coal Quarry		2.32	10.36
	Barren OB Dump		0.02	0.09
	Area Under Backfilling		4.32	19.29
	Water Filled Quarry		0.29	1.29
	Coal Dump		0.14	0.63
	Advance Quarry Site		0.38	1.70
Total Mining Area			7.47	33.35
Settlements	Rural Settlement		0.14	0.63
	Industrial Settlement		0.22	0.98
Total Settlement Area			0.36	1.61
Water Body	River, Ponds		0.28	1.25
Total			22.40	100.00

Customer		Mahanadi Coalfields Limited			
Title		Land Reclamation Monitoring of OC Projects			Job No. 561410027
Subject Land Reclamation Status of Lakhanpur OCP based on Satellite Data (R2A/L-IV) of the year 2020	Activity	Name	Designation	Signature	Date
	Prepared	A. Biswas	Mgr.(Geology)	<i>A. Biswas</i>	
	Checked	T. Mondal	CM (RSC)	<i>T. Mondal</i>	
Approved	R. Kumar	GM (Geomatics)	<i>R. Kumar</i>		
cmpdi A Mahanadi Company	Scale:	0 0.375 0.75 1.5 Km			Sheet 1
	Drg No.	HQ REM 07 A4 20 09			Rev No.0

EC COMPLIANCE STATUS
OF
LAKHANPUR OPENCAST PROJECT
21 MTPA
ENVIRONMENT CLEARANCE
DATED 10.01.2020

Specific conditions:

S.No	Conditions	Compliance Status
i.	<p>Adequate ambient air quality monitoring stations shall be established in consultation with the State Pollution Control Board, and regular monitoring shall be carried out for particulate emissions (both PM₁₀ & PM_{2.5}), SO₂ & NO_x. The monitoring results for the period during summer season (April-June 2018) shall be submitted to the State PCB and the Regional Office of this Ministry.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Ambient air quality monitoring is done at fortnightly intervals for the parameters of SPM, PM₁₀, PM_{2.5}, SO₂ and NO_x. Four nos. of monitoring stations have been established in consultation with Regional Office, Odisha Pollution Control Board, Jharsuguda. ▪ The monitoring results for the period during summer season (April-June 2018) submitted to the Odisha Pollution Control Board and the Eastern Regional Office, MoEF&CC on 29.11.2018
ii.	<p>The EAC shall review compliance of the actions taken on observations of the Regional Office before December 2018 and make its recommendations for continuance of the project thereafter. Also, based on the monitoring results, the Committee shall examine adequacy and efficacy of the pollution control measures and its impact on ambient air quality.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Inspection of ERO, MoEF&CC was carried out on 13.11.2018 and EAC reviewed the compliance conditions and further extension of EC was granted for one year on 13.02.2019. ▪ Again, inspection of ERO, MoEF&CC was carried out on 31.10.2019 and EC was granted on 10.01.2020 for a period of 30 years or life of the mine, whichever is earlier under the provisions of EIA Notification, 2006.

S.No	Conditions	Compliance Status
iii.	To control the dust generation at source, the crusher and in pit belt conveyors shall be provided with mist type sprinklers.	<p>Not Applicable</p> <ul style="list-style-type: none"> ▪ No crusher or in-pit belt conveyor is used. Coal is excavated through eco-friendly surface miners which eliminates the drilling, blasting and crushing of coal. ▪ During the 2020-21, 8 nos. of surface miners with in-built dust suppression system were deployed for coal extraction to the tune of 99.98 %.
iv.	<p>Mitigative measures to be undertaken to control dust and other fugitive emissions all along the roads by providing enough water sprinklers preferably mist type mobile sprayers/sprinklers.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ 103 nos. of fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard-1 to Ubuda Chowk, 26 nos. from Lilari bridge to Manager Office, 45 nos. in main haul road) in project. ▪ Mobile tankers are deployed in haul roads, mining areas and transportation roads for dust suppression by both departmental and contractual means. Departmental: 28KL (7 nos.), 9KL (4 nos.) ; Contractual: 20KL (19 nos.), 12KL (2 nos.), 8 KL (2 nos.) & ▪ One 40m throw truck mounted Fog Cannon has been deployed.

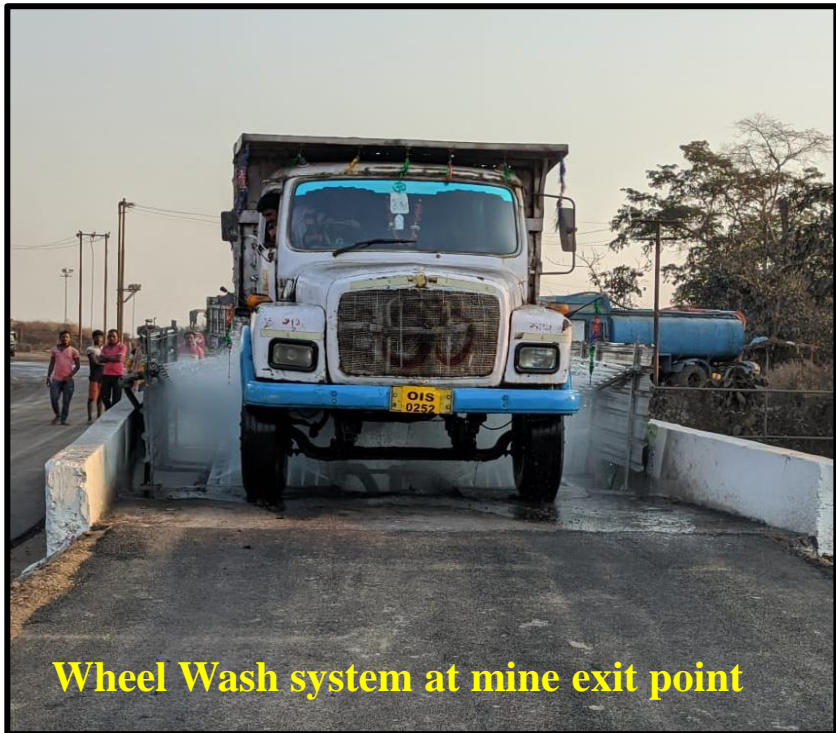
COAL EXTRACTION BY SURFACE MINER AT LAKHANPUR OCP



40M THROW,10-WHEELED TRUCK MOUNTED FOG CANNON AT LAKHANPUR OCP



40 m throw # 5 Kw Pump # 15 Bar operating Pressure # 7.5 Kw Blower fan
25 KVA DG set # 12 KL water tank # 10 Wheel mounted



Wheel Wash system at mine exit point

AIR POLLUTION CONTROL MEASURES AT LAKHANPUR OCP



Bamboo Plantation



Contractual Water Tanker on Haul road



28 KL Water tanker with mist spraying system



Vertical greenery system

S.N	Conditions	Compliance Status												
v.	<p>Regular monitoring of occupational safety and other health hazards of all employees including outsourced workers and the corrective actions shall be ensured. Report in this regard be submitted to the Regional Office of the Ministry.</p>	<p>Complied</p> <p>Regular monitoring of occupational safety and other health hazards of all employees including outsourced workers is done.</p> <ul style="list-style-type: none"> ▪ Individual dust exposure of work persons is monitored through Personal Dust Sampler. ▪ Noise survey for different sources is done. Work persons are provided with earmuffs. Further, HEMMs are provided with in-built soundproof cabins to protect the operators from hearing impairment. ▪ Illumination standards is ensured at the strategic places like working face, OB dump, coal face, workshop, coal transportation roads, etc. as per the DGMS circulars. <p>An Occupational Health Cell is established at Central Hospital, Mandalia, Jharsuguda which is supported by specialized doctors and paramedical staff trained in occupational health. The workers are being checked for occupational disease, hearing impairment etc.</p> <table border="1" data-bbox="868 961 2364 1189"> <thead> <tr> <th>Particulars</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>IME</td> <td>290</td> <td>384</td> <td>365</td> </tr> <tr> <td>PME</td> <td>245</td> <td>246</td> <td>252</td> </tr> </tbody> </table> <p>No cases of lung diseases pneumocosis, silicosis and fibrosis have been found in these years. Last report was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021.</p>	Particulars	2018-19	2019-20	2020-21	IME	290	384	365	PME	245	246	252
Particulars	2018-19	2019-20	2020-21											
IME	290	384	365											
PME	245	246	252											

S.No	Conditions	Compliance Status
vi.	Controlled blasting techniques should be adopted to control ground vibration and fly rocks	<p>Complied</p> <ul style="list-style-type: none"> ▪ Controlled blasting technique with NONEL tubes initiation is adopted. ▪ Vibration monitoring is also carried out during blasting operation. ▪ Adequate safety measures are taken during blasting. ▪ The blasting operation is carried out only during daytime. <p>Threshold vibration limit : 10 PPV Maximum Reading : 6.14 PPV & Minimum Reading : 1.51 PPV</p>
vii	Persons of nearby villages shall be given training for their livelihood and skill development.	<p>Complied</p> <ul style="list-style-type: none"> ▪ For conducting skill development residential training programme for 250 nos. of youth from affected villages -Karlajori, Khaliapali, Kudaloi, Kushraloi etc., by CIPET, Chennai as per MoU signed with Coal India Limited. A group of 20 trainees selected on 11.04.2021 for the initial phase at CIPET training centre, Rourkela. ▪ MoU has been signed with BAIF in Oct’2018 (Bhartiya Agro Industries Foundation) for “Comprehensive Community Development Programme” through various schemes such as animal husbandry, sustainable agricultural practices, and workshops for Quality-of-life improvement in 10 villages of Jharsuguda district (Lachhipali, Parasian, Kadamdhee, Dudugaon, Kuruebahal, Jamugaon, Thebra, Samarbaga, Baurkhol, Sagarпали) for a period of five years. ▪ Besides, vocational training programme and apprenticeship training programme are organized at project level. The land oustees (1037 nos.) employed in the company are trained for skill upgradation through ITI programs.

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status																																																									
viii	To ensure health and welfare of nearby villages, regular medical camps shall be organized, and report shall be submitted to the Regional Office of the Ministry.	<p>Complied General Preventive Health camps are being conducted. The health checkup, medicines and consultation are provided at free of cost. Details of camps conducted the year 2019-20 tabulated below.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="width: 35%;">Village</th> <th style="width: 30%;">Date</th> <th style="width: 35%;">No of beneficiaries</th> </tr> </thead> <tbody> <tr><td>Chaurimahul</td><td>09/08/2019</td><td>124</td></tr> <tr><td>Kusaraloi</td><td>21/08/2019</td><td>164</td></tr> <tr><td>Junian</td><td>11/09/2019</td><td>68</td></tr> <tr><td>Soldia</td><td>20/09/2019</td><td>132</td></tr> <tr><td>Kudaloi</td><td>16/10/2019</td><td>187</td></tr> <tr><td>Khadam</td><td>06/11/2019</td><td>159</td></tr> <tr><td>Jorabaga</td><td>22/11/2019</td><td>259</td></tr> <tr><td>Kirtimal</td><td>26/11/2019</td><td>380</td></tr> <tr><td>Kheraulbahal</td><td>28/11/2019</td><td>100</td></tr> <tr><td>Kirarama</td><td>4/12/2019</td><td>101</td></tr> <tr><td>Kudaloi</td><td>13/12/2019</td><td>477</td></tr> <tr><td>Karlajuri</td><td>10/01/2020</td><td>75</td></tr> <tr><td>Khaliapali</td><td>17/01/2020</td><td>77</td></tr> <tr><td>Ubuda</td><td>07/02/2020</td><td>80</td></tr> <tr><td>Kandsar</td><td>18/02/2020</td><td>116</td></tr> <tr><td>Karpabahal</td><td>25/02/2020</td><td>81</td></tr> <tr><td>Kherualbahal</td><td>18/03/2020</td><td>174</td></tr> <tr> <td colspan="2" style="text-align: center;">Total</td> <td></td> </tr> </tbody> </table> <p>During 2020-21, several awareness programme on COVID-19 were conducted, 107680 masks and 200 ml sanitizers have been distributed in 59 peripheral villages.</p>	Village	Date	No of beneficiaries	Chaurimahul	09/08/2019	124	Kusaraloi	21/08/2019	164	Junian	11/09/2019	68	Soldia	20/09/2019	132	Kudaloi	16/10/2019	187	Khadam	06/11/2019	159	Jorabaga	22/11/2019	259	Kirtimal	26/11/2019	380	Kheraulbahal	28/11/2019	100	Kirarama	4/12/2019	101	Kudaloi	13/12/2019	477	Karlajuri	10/01/2020	75	Khaliapali	17/01/2020	77	Ubuda	07/02/2020	80	Kandsar	18/02/2020	116	Karpabahal	25/02/2020	81	Kherualbahal	18/03/2020	174	Total		
Village	Date	No of beneficiaries																																																									
Chaurimahul	09/08/2019	124																																																									
Kusaraloi	21/08/2019	164																																																									
Junian	11/09/2019	68																																																									
Soldia	20/09/2019	132																																																									
Kudaloi	16/10/2019	187																																																									
Khadam	06/11/2019	159																																																									
Jorabaga	22/11/2019	259																																																									
Kirtimal	26/11/2019	380																																																									
Kheraulbahal	28/11/2019	100																																																									
Kirarama	4/12/2019	101																																																									
Kudaloi	13/12/2019	477																																																									
Karlajuri	10/01/2020	75																																																									
Khaliapali	17/01/2020	77																																																									
Ubuda	07/02/2020	80																																																									
Kandsar	18/02/2020	116																																																									
Karpabahal	25/02/2020	81																																																									
Kherualbahal	18/03/2020	174																																																									
Total																																																											

HEALTH CAMPS AT LAKHANPUR AREA



S.No	Conditions	Compliance Status
ix	<p>Wind barrier wall/screen and vertical greenery system, green belt, dust suppression arrangement at railway siding to be installed.</p>	<p>Under Compliance</p> <ul style="list-style-type: none"> ▪ A vertical greenery system of length 40m has been developed at siding no.3. ▪ Six nos. of 100m throw trolley mounted fog cannons are installed in railway sidings for dust suppression replacing the conventional fixed type sprinklers. ▪ An estimate for an amount of Rs. 2.89 Cr for fabrication and erection of wind barrier (750m length, 10m height) and development of vertical greenery system (300 m) at siding no.3 has been approved and the work is expected to be completed by December 2021.
x	<p>Three tier multi-species green belt of not less than 7.5 m width should be developed all along the project to mitigate/check the dust pollution. Only native species to be used for plantation/greenbelt development.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Green belt exist for a length of 16.4 Km. Species such as Neem, Karanja, Bela, Jamun, Mandar, Kamini, Sunari etc., have been planted. ▪ The details of plantation done in the mining area is as follows:- <ul style="list-style-type: none"> <input type="checkbox"/> External OB dumps: 17.5 Ha <input type="checkbox"/> Backfilled area: 127.7 Ha <input type="checkbox"/> Block plantation: 34.985 Ha <input type="checkbox"/> Avenue plantation: 6.93 Rkm

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
xi	<p>In view of the mining potential of the area and the prevailing environmental concerns, carrying capacity of the riverine eco-system shall be studied through some expert agencies to assess impact on the environmental components.</p>	<p>Complied</p> <p>A study on carrying capacity of Riverine Ecosystem has been carried out by Central Mine Planning and Design Institute Limited (CMPDIL), Ranchi. Report for the same has been submitted in December 2018. Major findings of the study are :</p> <ul style="list-style-type: none"> ▪ Phulijhor Nallah (within ML area) Lilari Nallah (adjacent) are seasonal nallah. They drain into the Ib River which is 7.3 Km from the mine. ▪ WATER QUALITY OF THE RIVERINE SYSTEM :level of dissolved oxygen is quite good to support aquatic life. The level of BOD, COD and TSS in the Ib River is moderate. ▪ SUPPORTIVE CAPACITY FOR AQUATIC LIFE :All the water bodies (Lentic & Lotic) have strong self-purification system which controls the entire functioning of the ecosystem. The water quality of the Phulijhor Nallah, Lilari Nallah and Ib river located in the study area was found to have endurance enough to support the naturally prevailing flora and fauna (viz. phytoplankton, zooplankton, macrophytes, molluscs, insects, fishes, etc.) of the region.
xii	<p>A mitigation plan based on the study to be submitted to the MOEF&CC Regional Office/SPCB and displayed on company's website.</p>	<p>Complied</p> <p>Mitigation plan has been submitted to MoEF&CC Regional Office, Bhubaneswar and OSPCB vide letter No. MCL/LA/PO/LKPOCP/Env. 19-20/35 Dated: 24.08.2019. The report and mitigation plan for the study has been uploaded in company's website:</p> <p>http://www.mahanadicoal.in/Environment/env_compliance.php</p>

LILARI NALLAH EMBANKMENT STABILIZED WITH VEGETATION



SN	Surface water quality of Lilari Nallah	Tolerance limits IS: 2296 For inland surface waters, Class C	Lilari Nallah near Kudaloi Village upstream of Lakhanpur OCP	Lilari Nallah near Project Office-Lilari Bridge as downstream of Lakhanpur OCP
	Date of sampling		23rd Jan' 2021	23rd Jan' 2021
1	pH	6.5 to 8.5	6.81	6.76
2	Dissolved Oxygen(mg/L)	4(Minimum)	4.2	6.4
3	BOD (3 days -27° C mg/L)	3	2.20	3.20
4	Total Dissolved Solids (mg/L)	1500	54	58
5	Copper (mg/L)	1.50	0.04	0.03
6	Iron (mg/L)	50	<0.1	<0.1
7	Chlorides (mg/L)	600	10	10
8	Sulphate (mg/L)	400	3.34	2.76
9	Nitrate (mg/L)	50	<0.5	<0.5
10	Fluoride (mg/L)	1.50	<0.3	<0.3
11	Cadmium (mg/L)	0.01	<0.001	<0.001
12	Arsenic (mg/L)	0.2	<0.005	<0.005
13	Oil & grease (mg/L)	0.1	Below Detectable Limit	Below Detectable Limit

S.No	Conditions	Compliance Status
General Conditions: 4.1 (a) Mining		
I	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	Complied
II	No change in mining method i.e., OC to UG, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forest and Climate Change (MoEF&CC).	Complied <ul style="list-style-type: none"> ▪ The project proponent is complying the condition & OM No. 22-44/2018-IA.III dated 14.05.2020 of MoEF&CC.
III	Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).	Complied <ul style="list-style-type: none"> ▪ Mining is being carried out as per approved Mining Plan (including Mine Closure Plan), approved by MoC, GoI vide No. 34011/36/2017-CPAM Dated: 20.11.2017.
IV	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.	Complied

S.No	Conditions	Compliance Status
4.1 (b) Land reclamation and water conservation		
I	<p>Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale shall be submitted to Ministry of Environment, Forest and Climate Change/Regional Office (RO).</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Digital Survey of entire lease hold area is carried out every year using Satellite Remote Sensing survey by CMPDIL & the report is submitted to MOEF&CC(RO), Bhubaneswar vide L.no. MCL/LKPA/LKPOCP/Envnt./2021-22/221 dated: 31.05.2021. ▪ Copy of the same is also available in the company's website: http://www.mahanadicoal.in/Environment/satelite_map.php
II	<p>The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The surface run-off from mine is diverted and stored in mine sumps and reused for dust suppression, firefighting and other mining related activities. ▪ Garland drains (2m x 2m) constructed along the periphery of the mines to prevent mine from inundation. ▪ Lilari nallah flows outside of the mine boundary and the embankment along the nallah is stabilized with vegetation.

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
III	<p>The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive plantation. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective state government as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.</p>	<p>Complied (Compliance required during mine closure stage.)</p>
IV	<p>The entire excavated area, backfilling, external OB dumping (including topsoil) and afforestation plan shall be in conformity with the "during mining"/"post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the Ministry of Environment, Forest and Climate Change/Regional Office on six monthly basis</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The progressive compliance is submitted to RO, MoEF&CC half yearly. ▪ Last report was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021.

PLANTATION DETAILS – LAKHANPUR OCP

Year	No. of plants	Area in Ha.
1993-94	16032	3.40
1994-95	81132	6.05
1995-96	46205	6.82
1996-97	12500	4.50
1997-98	21200	11.00
1998-99	25000	10.00
1999-2000	25000	10.00
2000-01	25400	11.00
2002-03	7400	3.00
2004-05	32250	12.90
2006-07	27500	11.00
2007-08	47500	19.00
2008-09	27500	11.00
2009-10	6250	2.50
2010-11	10000	4.00
2014-15	40500	16.20
2015-16	20000	8.00
2016-17	7550	3.02
2017-18	18075	7.23
2018-19	1600	4 (Bamboo Plantation)
2019-20	9000	22.5 (Bamboo Plantation)
TOTAL	507594	187.12

PLANTATION OVER BACKFILLED OB DUMPS AT LAKHANPUR OCP



PLANTATION OVER BACKFILLED OB DUMPS AT LAKHANPUR OCP



AVENUE PLANTATION



Total Coal Transportation Road Length: 10 KM
Plantation taken up: 6.93 KM
Rest 3.07 KM by FY 2022-23

6.93 RKm

S.No	Conditions	Compliance Status
V	<p>The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilized with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office on six monthly basis.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Topsoil removed is temporarily stored at earmarked places and spread over the internally backfilled OB dumps for plantation purposes. ▪ Grass species such as <i>Stylosanthes Hamata</i>, <i>Pennisetum pedicellatum</i> and <i>Chrysopogon zizanioides</i> are planted in OB dump slopes and OB dump tops to prevent erosion and surface run-off. ▪ The mining and backfilling is being carried out as per the approved Mining and Mine closure plan. Plantation and maintenance up to 5 years is being carried out through government agencies after which the trees become self-sustainable. Native and fruit bearing species such as Mango, Neem, Bel. Ber, Jamun, Bamboo, Chatiyani, Karanj, Sisso, Mahua etc. are planted. ▪ Last report was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021

TOPSOIL SPREAD FOR TAKING UP PLANTATION DURING 2021-22 AT LAKHANPUR OCP

Latitude: 21.751446
Longitude: 83.825992
Elevation: 274.67±4 m
Accuracy: 19.5 m
Azimuth: 162° (S)
Pitch: -15.3°
Time: 27-06-2021 08:51
Note: top soil spread

Powered by AngleCam

S.N	Conditions	Compliance Status
4.1 (c) Emissions, effluents and waste disposal		
I	<p>Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc. shall be carried out in critical areas prone to air pollution (with higher values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Road sale trucks are covered with tarpaulins. ▪ 103 fixed sprinklers have been installed along the Coal Transportation (CT) roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard-1 to Ubuda Chowk, 26 nos. from Lilari bridge to Manager office, 45 nos. in Main haul road) in project. ▪ Mobile tankers are deployed in haul roads, mining areas and transportation roads for dust suppression by both departmental and contractual means. Departmental: 28KL (7 nos.), 9KL (4 nos.) Contractual: 20KL (19 nos.), 12KL (2 nos.), 8 KL (2 nos.). ▪ Truck mounted Fog Cannon (40m Throw) is presently used in abating dust generation. ▪ 9 nos. 100m throw trolley mounted fog cannon have been deployed at Coal stocks and Railway Sidings for dust suppression ▪ Two Mist type Instant shower systems have been installed and trucks carrying coal to sidings pass through the system to prevent generation of dust. ▪ Wheel washing system at the exit point of mine has been established. ▪ Mechanical Road Sweepers deployed for cleaning of CT Roads & Colony Roads. ▪ Blacktopping of CT Roads of length 4 Km connecting to NH 49.

MECHANICAL ROAD SWEEPER AT LAKHANPUR OCP



Sweeping speed: upto 10 km/hr # Size of debris it can handle: 100 mm

Sweeping width: 1.8 m (min) and 3.0 m (max) #Sweeping rate : 30000 Sq. m/hr

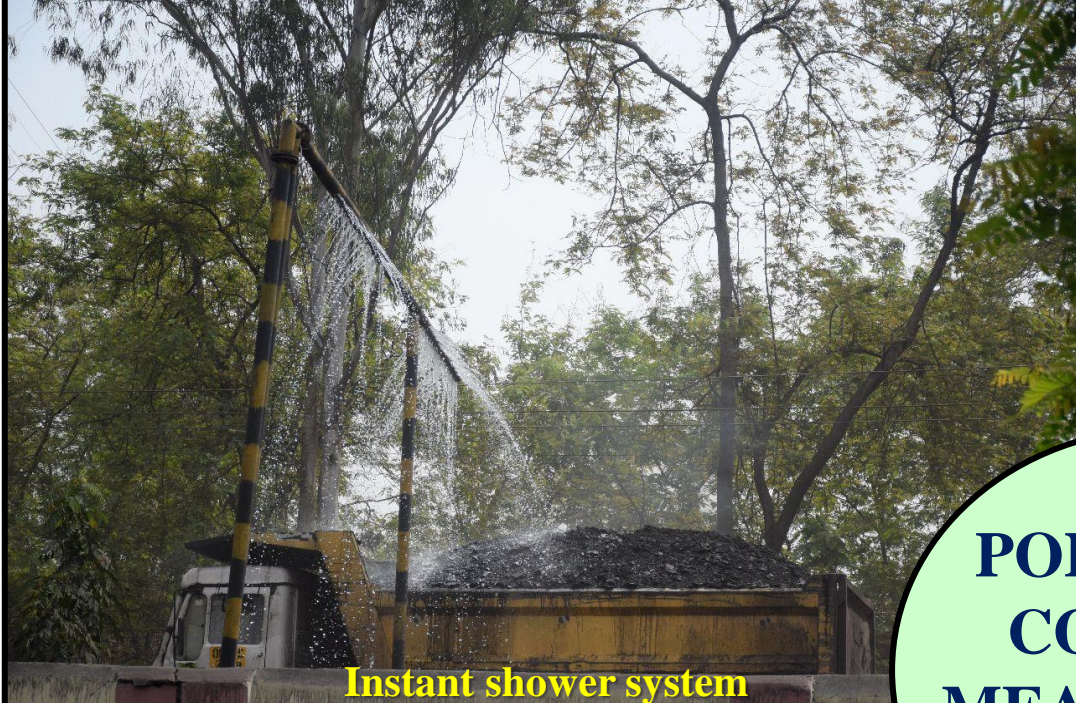
**ROAD SALE TRUCK COVERED WITH TARPAULIN PLYING OVER BLACKTOPPED
COAL TRANSPORTATION ROAD AT LAKHANPUR OCP**



TROLLEY MOUNTED FOG CANNON IN OPERATION AT RAILWAY SIDING LAKHANPUR OCP



**# 100 M throw # 37 Kw Blower fan # 10 Kw pump # Electric Powered # Droplet Size – 30 to 50 micron
50 Bar operating Pressure # Horizontal Swing – 0 to 320 degree # Vertical Swing – 0 to 45 degree**



Instant shower system



Fixed sprinklers at Coal Stockyard

**AIR
POLLUTION
CONTROL
MEASURES AT
LAKHANPUR
OCP**



Fixed sprinklers at siding



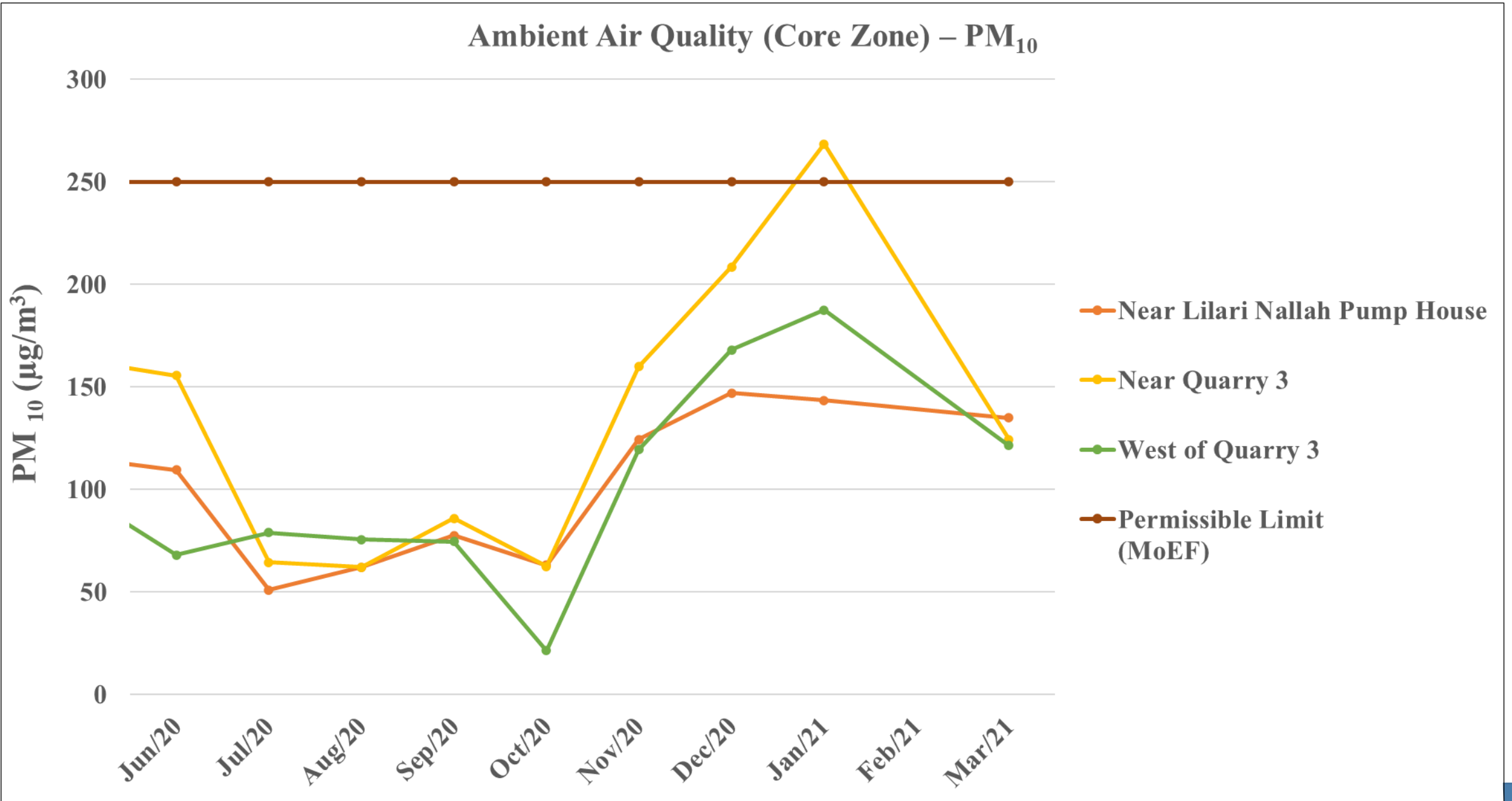
100m throw fog cannon at Coal Stockyard & Siding

DRILLS WITH WET DRILLING ARRANGEMENT AT LAKHANPUR OCP



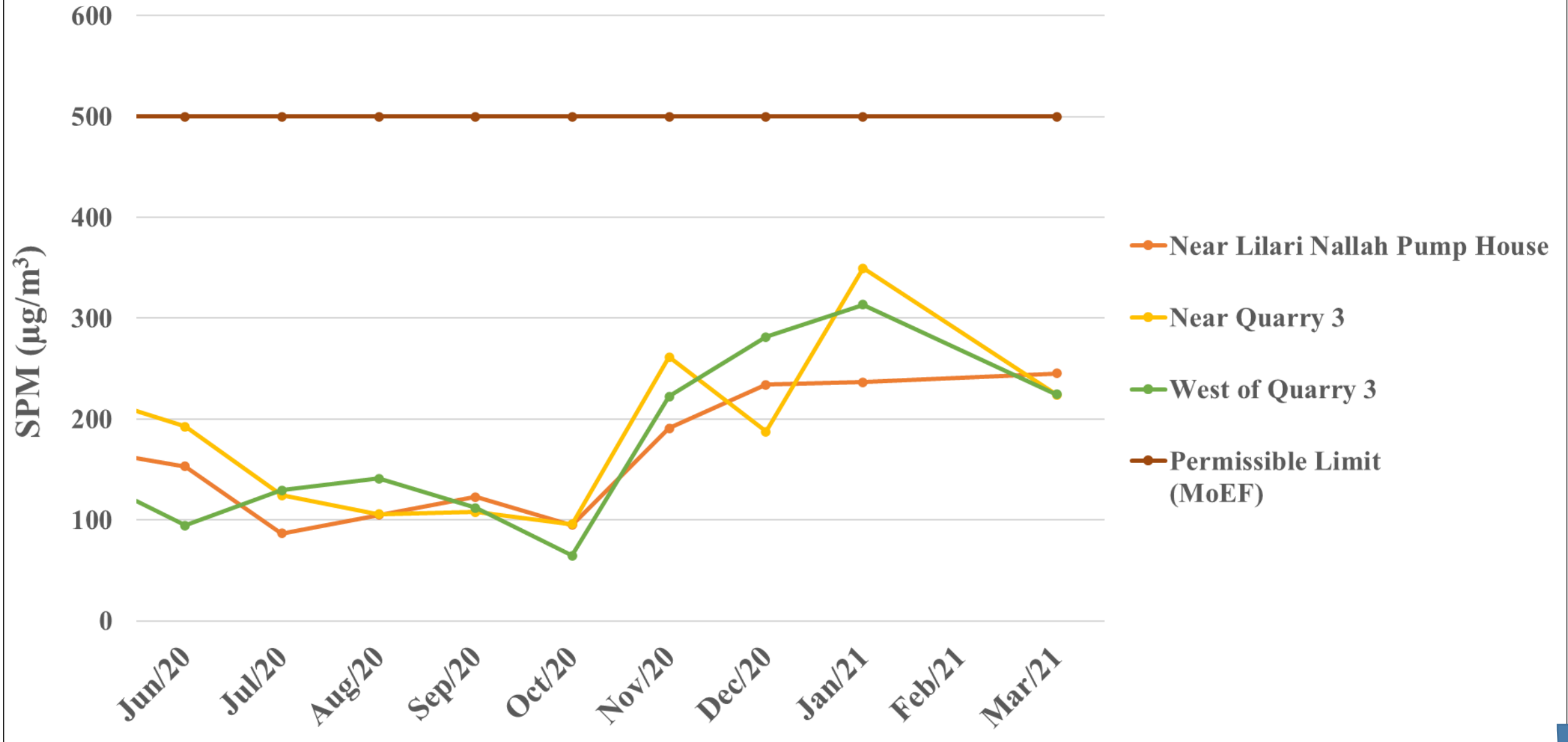
LAKHANPUR OCP

Ambient Air Quality (Core Zone) – PM₁₀



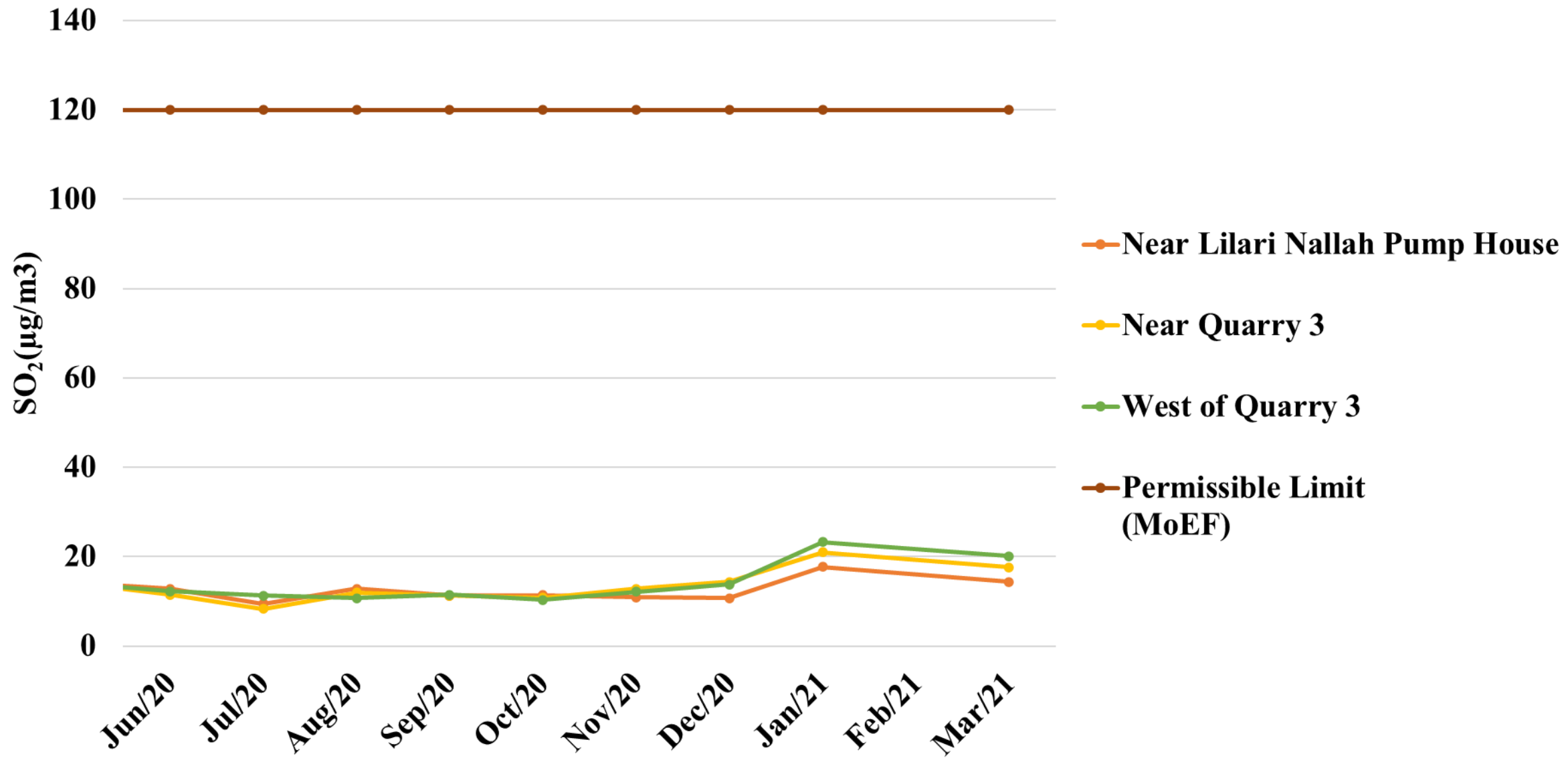
LAKHANPUR OCP

Ambient Air Quality (Core Zone) - SPM



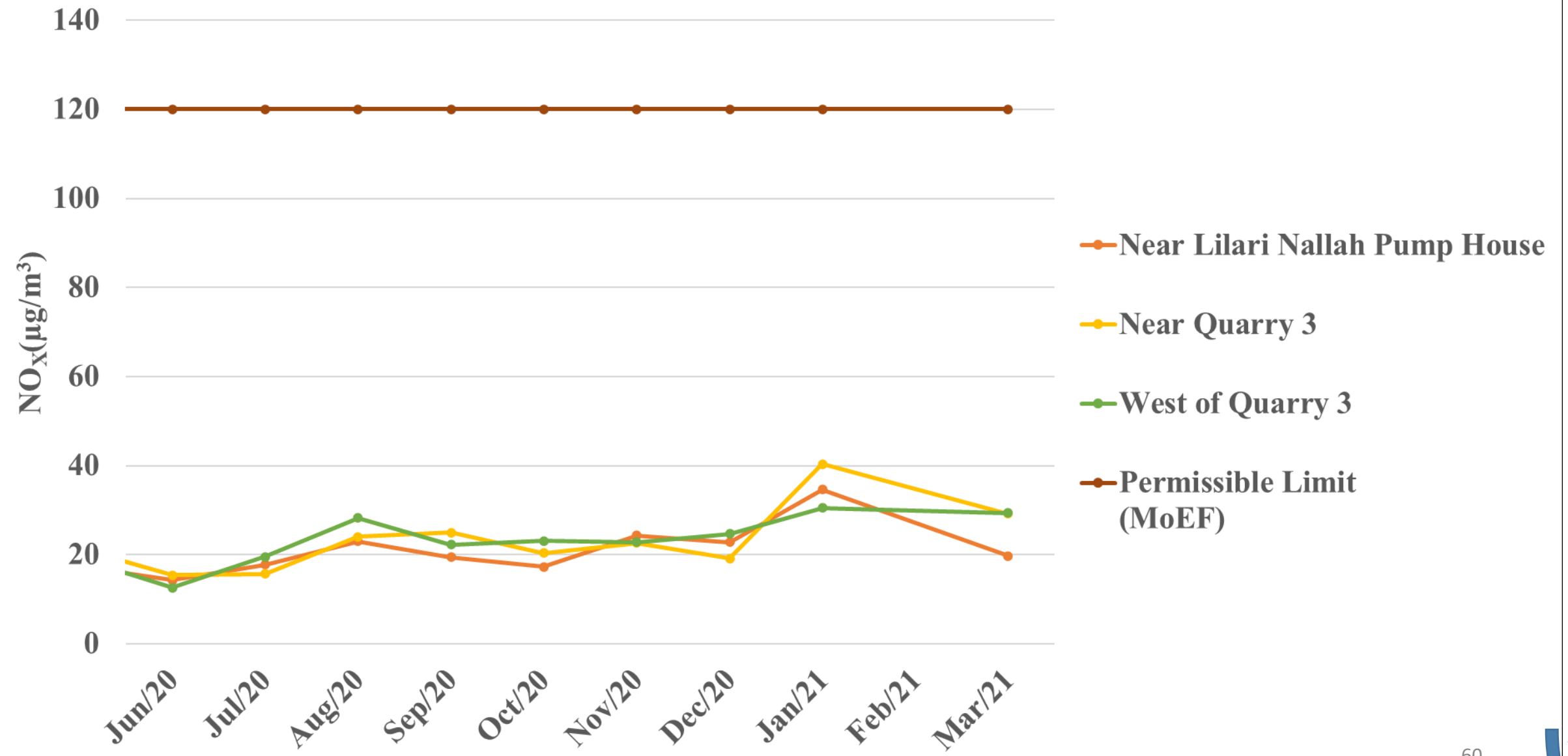
LAKHANPUR OCP

Ambient Air Quality (Core Zone) - SO₂



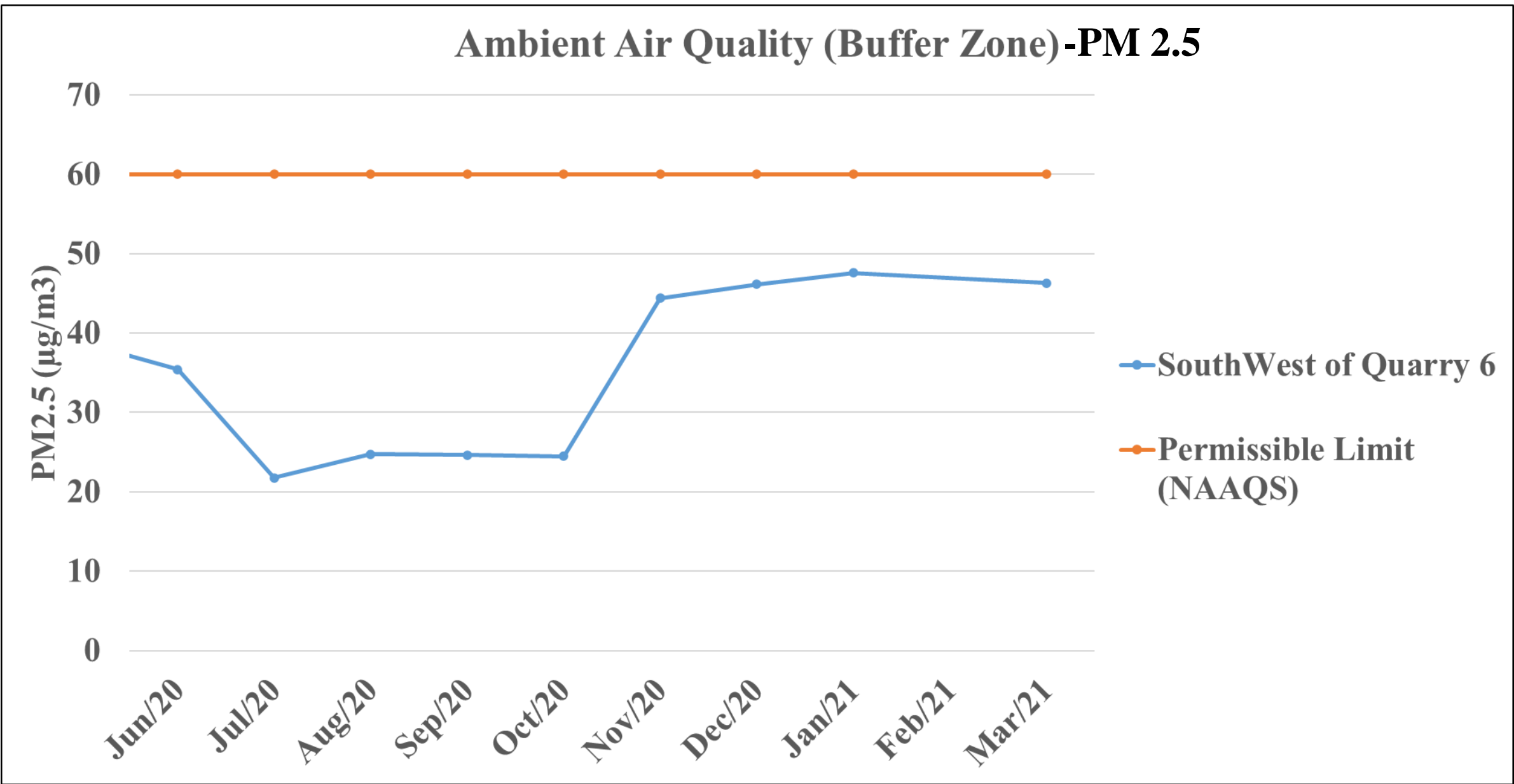
LAKHANPUR OCP

Ambient Air Quality (Core Zone) - NO_x



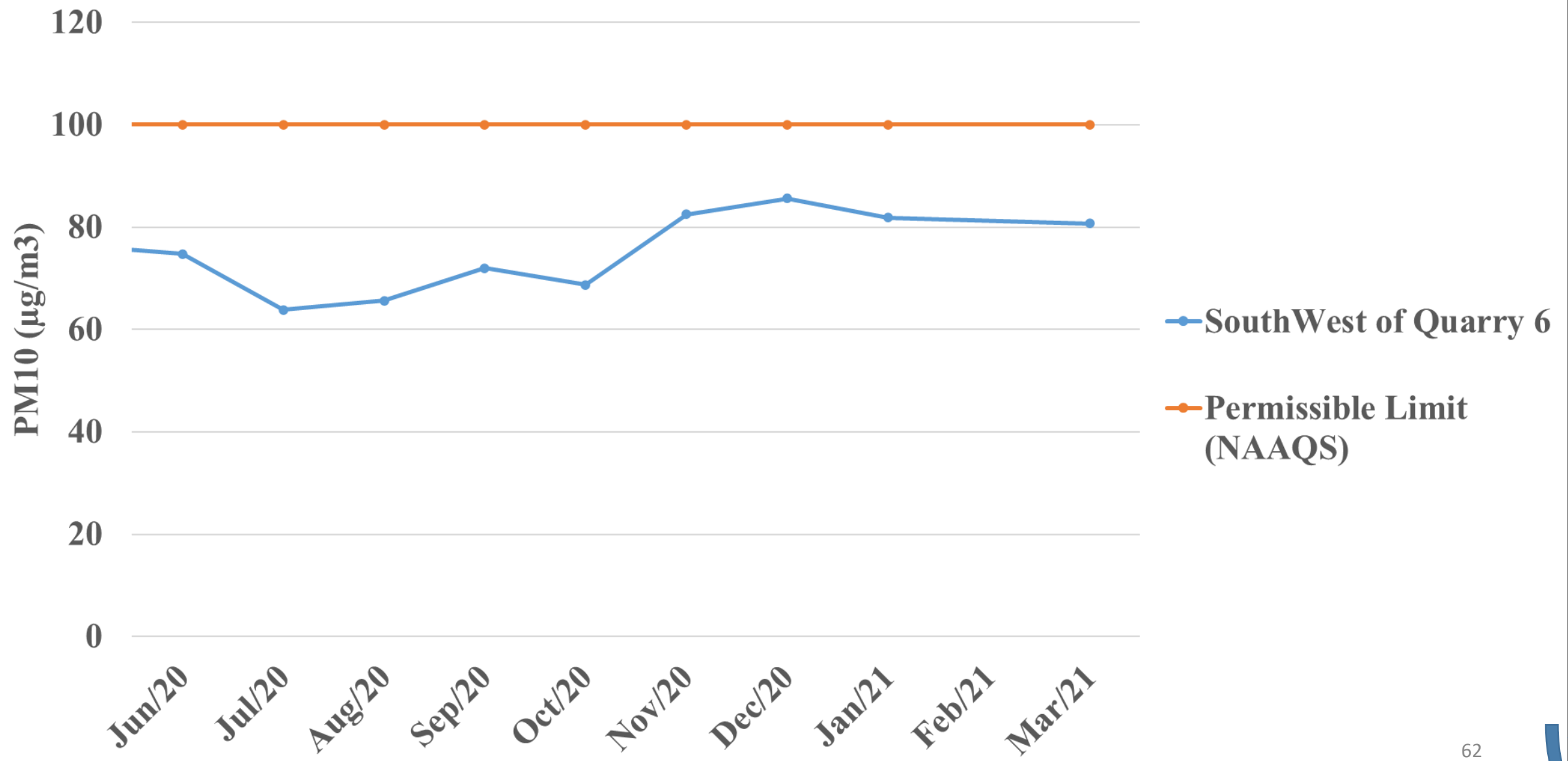
LAKHANPUR OCP

Ambient Air Quality (Buffer Zone)-PM 2.5



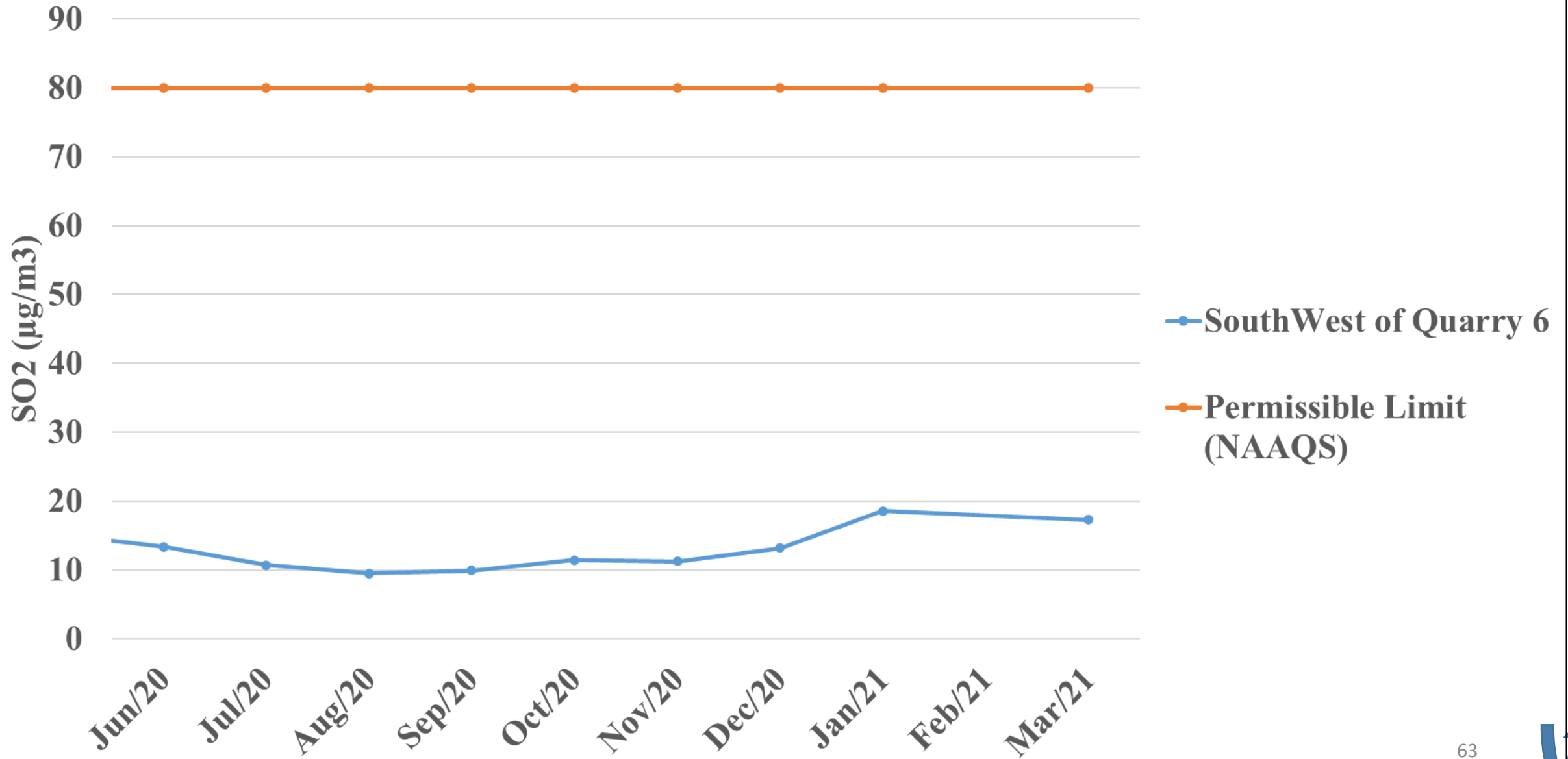
LAKHANPUR OCP

Ambient Air Quality (Buffer Zone)- PM 10

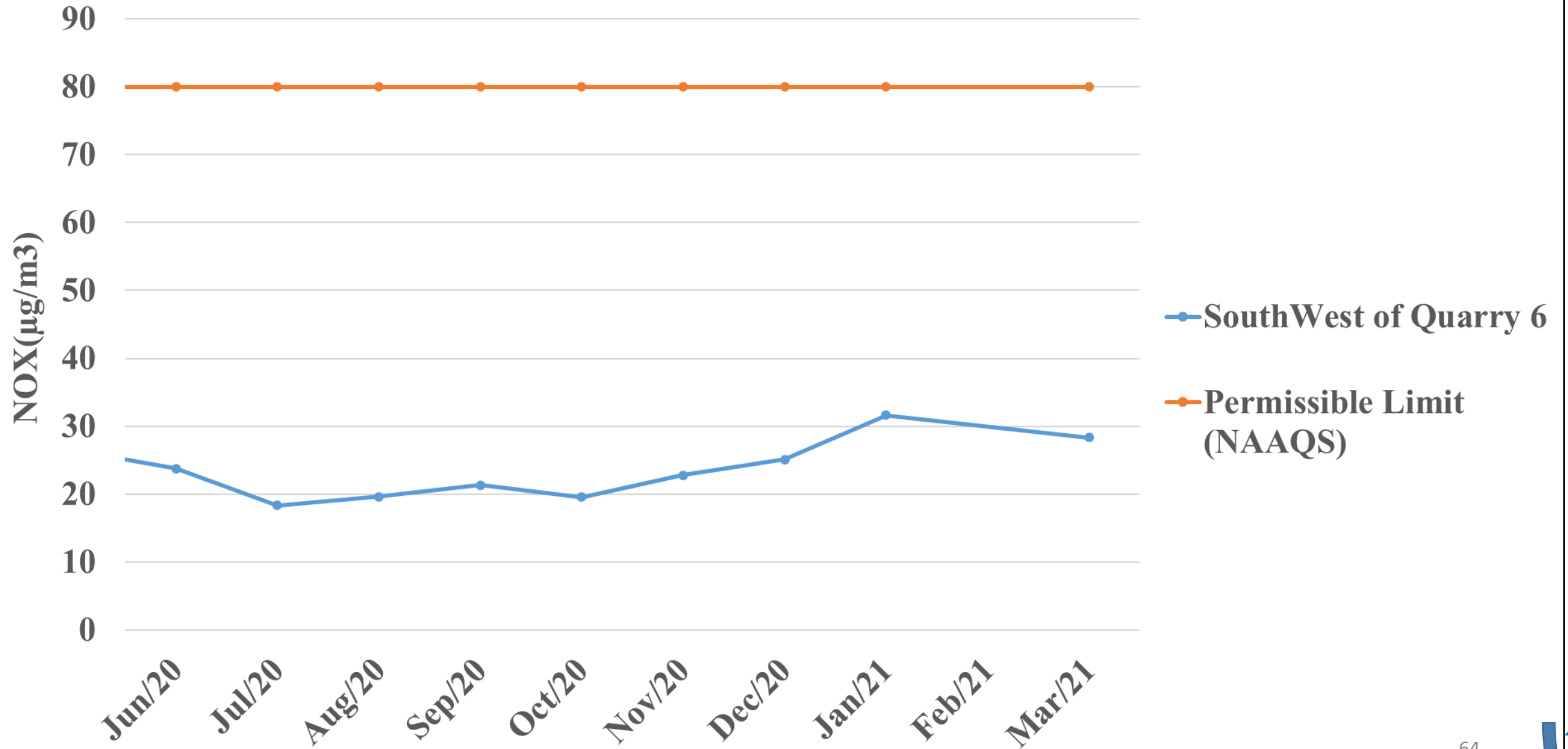


LAKHANPUR OCP

Ambient Air Quality (Buffer Zone)-SO₂

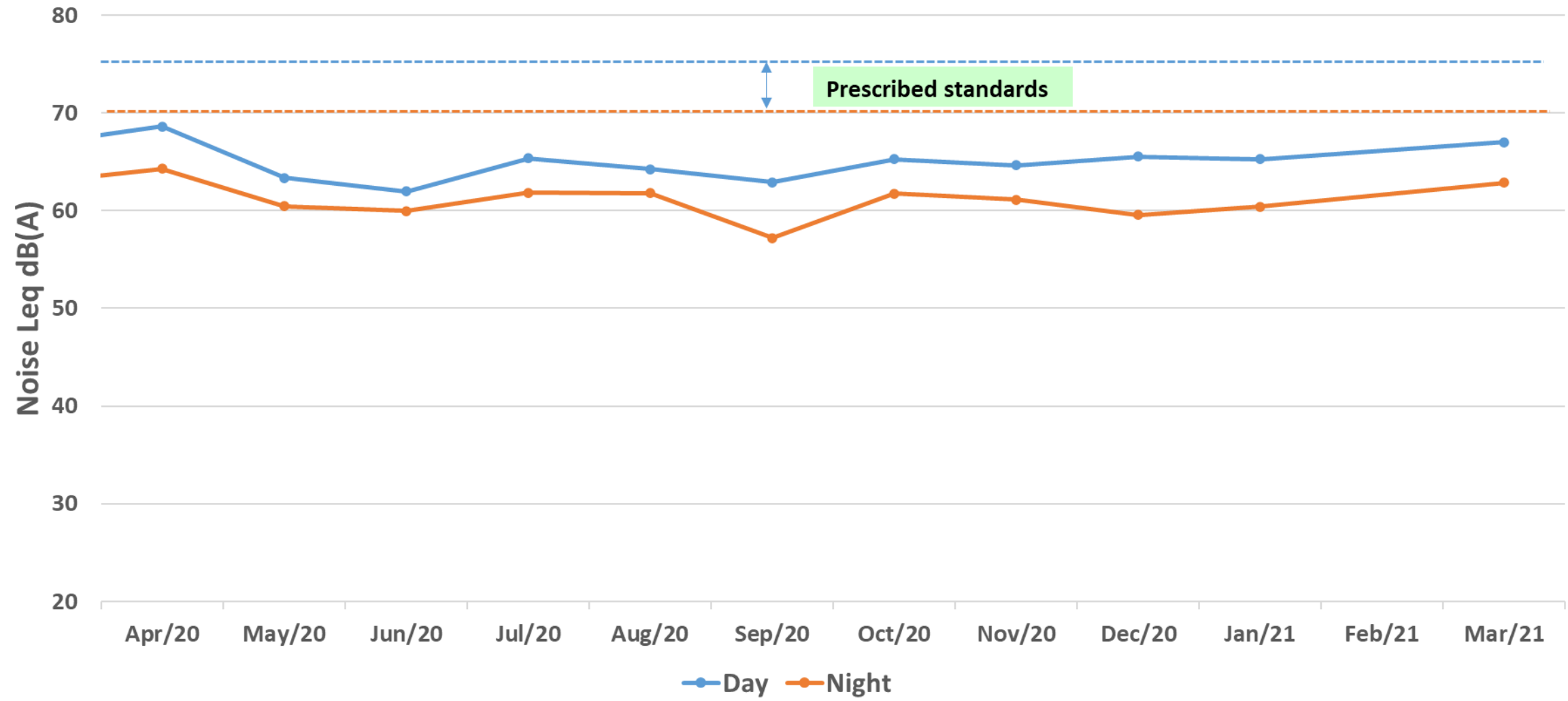


Ambient Air Quality (Buffer Zone)- NO_x



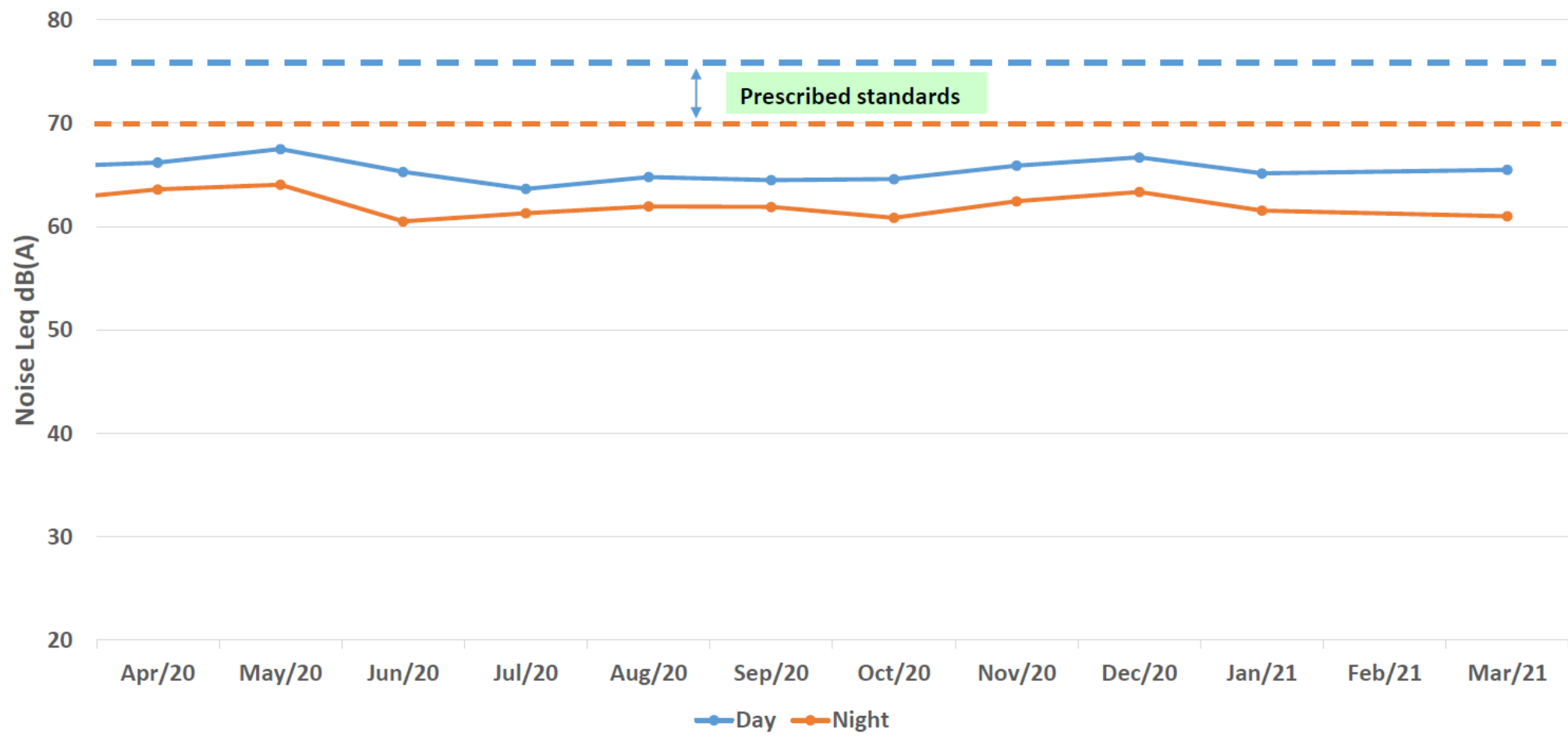
NOISE LEVEL DATA-LAKHANPUR OCP

Near Quarry-3



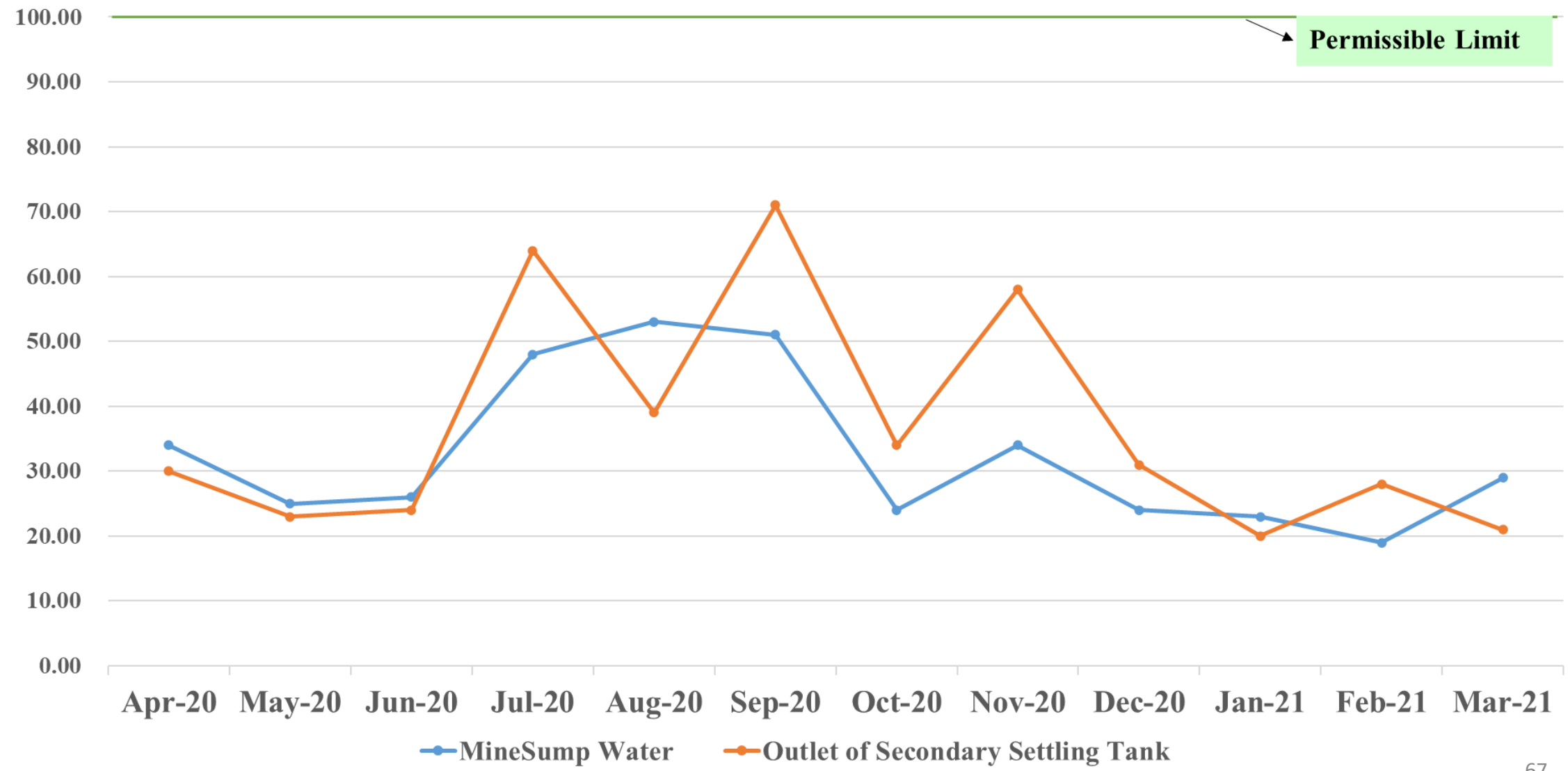
NOISE LEVEL DATA-LAKHANPUR OCP

South West of Quarry-6



Effluent Water Quality

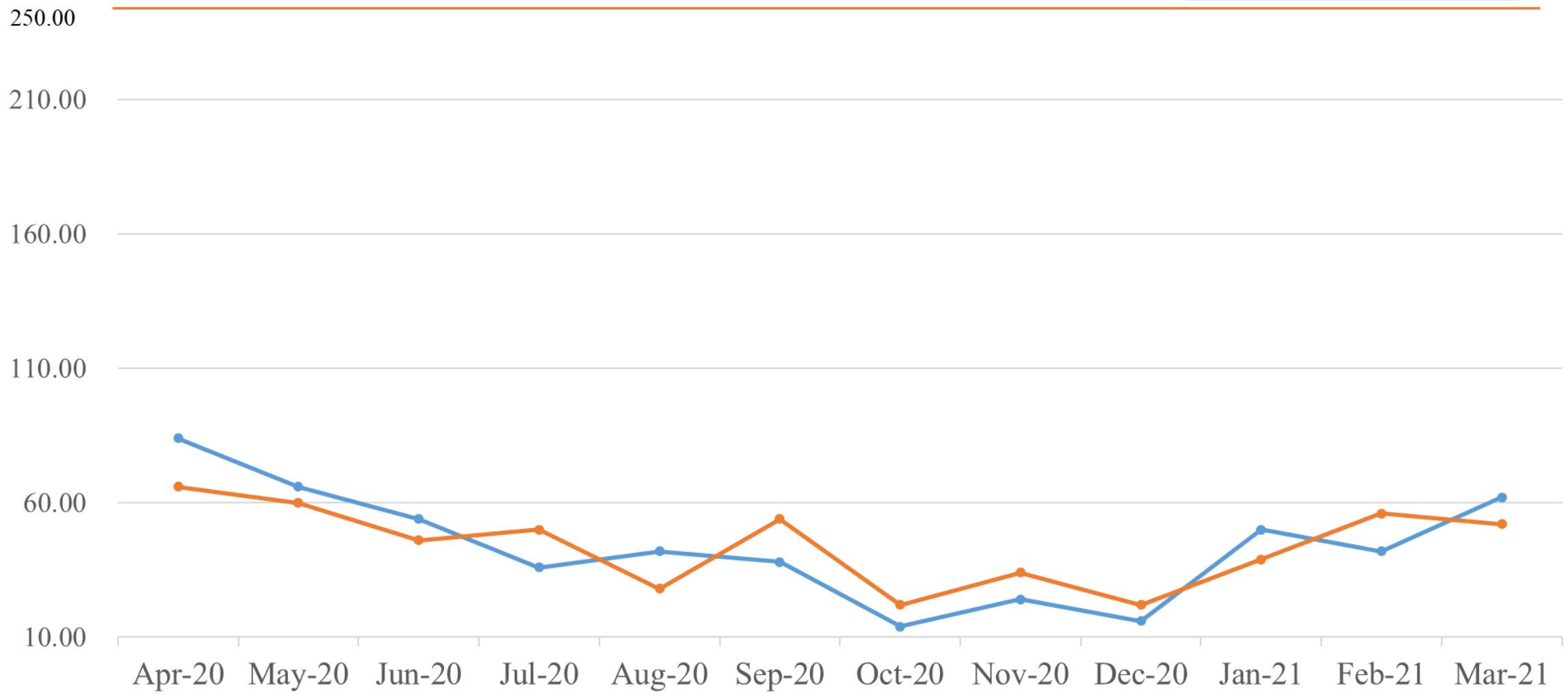
LAKHANPUR OCP
TSS (mg/l)



Effluent Water Quality

LAKHANPUR OCP
COD (mg/l)

Prescribed Standard Line

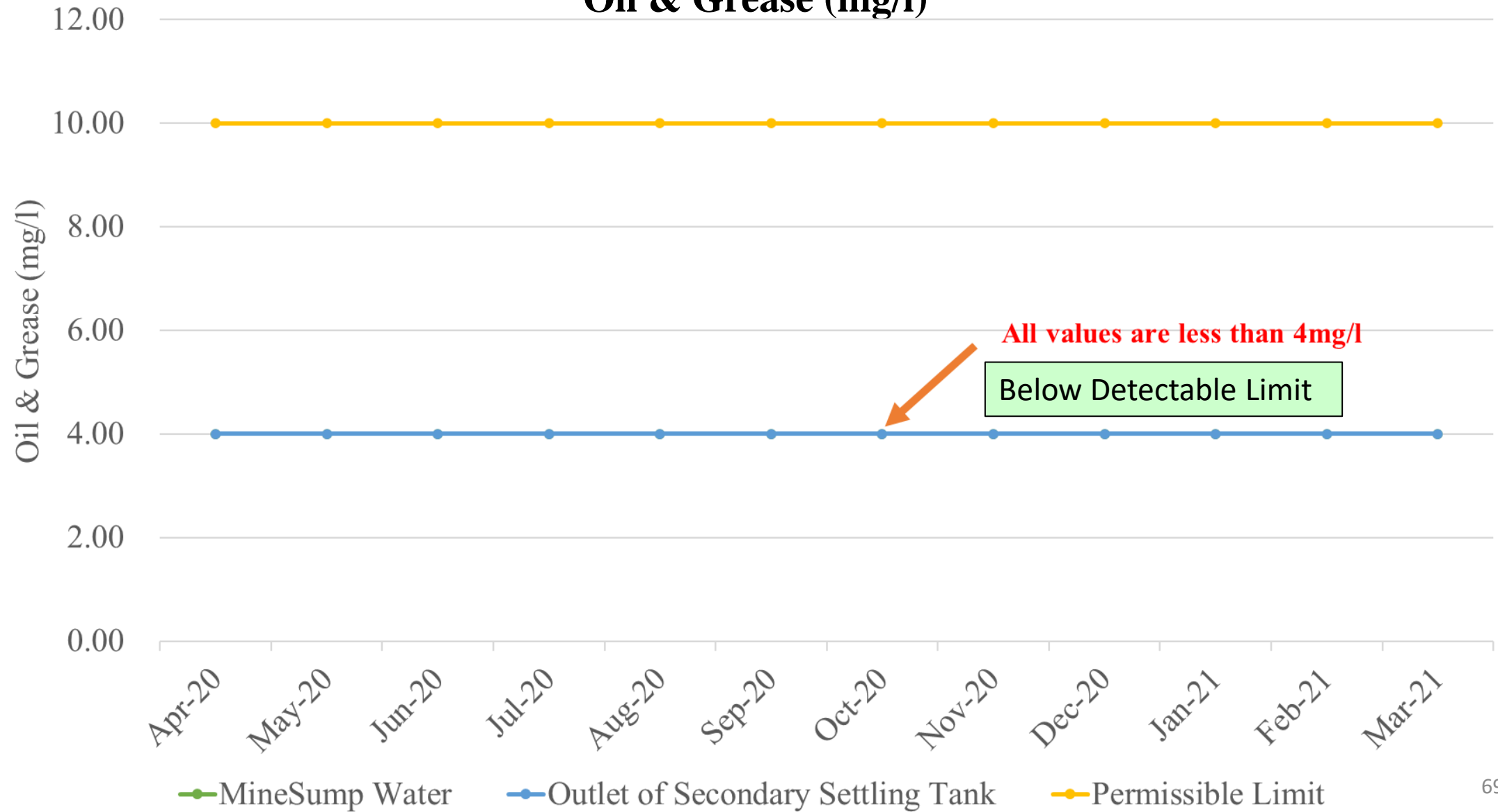


—●— MineSump Water —●— Outlet of Secondary Settling Tank

Effluent Water Quality

LAKHANPUR OCP

Oil & Grease (mg/l)



All values are less than 4mg/l

Below Detectable Limit

S.No	Conditions	Compliance Status
II	<p>Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area in a phased manner. The green belt comprising a mix of native species shall be developed all along the major approach/ coal transportation roads.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Green belt exist for a length of 16.4 Km. Species such as Neem, Karanja, Bela, Jamun, Mandar, Kamini, Sunari etc., have been planted. ▪ The external OB dumps have been completely biologically reclaimed; ▪ Progressive biological reclamation of the project area is being carried out. The details of reclamation is as follows: <ul style="list-style-type: none"> <input type="checkbox"/> External OB dumps:17.5 Ha <input type="checkbox"/> Backfilled area: 127.7 Ha <input type="checkbox"/> Block plantation: 34.985 Ha <input type="checkbox"/> Avenue plantation: 6.93 Rkm ▪ During the year 2020-21, plantation over an area of 17.5 Ha (28000 saplings) been carried out in villages near to the project under Urban Plantation Scheme by DFO, Jharsuguda. Also, Bamboo plantation was carried out over an area of 22.5 Ha in Backfilled area. ▪ For the year 2018-19 and 2017-18, 25000 Nos. and 20000 Nos. saplings were planted respectively in Belpahar Forest Range area villages.

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
III	<p>The transportation of coal shall be carried out as per the provisions and route proposed in the approved Mining Plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Coal transportation is carried out as per approved Mining Plan. Village roads are not used for coal transportation. ▪ Mobile tankers are deployed in haul roads, mining areas and transportation roads for dust suppression by both departmental and contractual means. ▪ Graders deployed in the transportation road to reduce ruts and potholes. ▪ Speed limits of the vehicles are restricted, and proper sign boards are placed to maintain traffic safety.
IV	<p>Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centers.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Scheduled maintenance of Tippers and HEMMs are done to reduce the vehicular emissions. ▪ PUC (Pollution Under Control) certificate is issued from authorized pollution testing centers for all the transporting vehicles. Records of the PUC is maintained by the PP.

POLLUTION UNDER CONTROL CERTIFICATE

Authorised By: RTO JHARSUGUDA
Transport Commissionerate, Odisha



TEST RESULT : PASS
VALID TILL: 03/Nov/2021

Certificate Sl. No.: OR02300300004132
Registration No.: **OD23H6279**
Chassis No.: MAT373328J2H19607
Engine No.: CRI6-75HRY109218
Class of Vehicle: Goods Carrier
Make: TATA MOTORS LTD
Model: 50339342000R
Vehicle Category: HEAVY GOODS
VEHICLE
Date of Registration: 09/Apr/2019
Emission Norms: BHARAT STAGE IV
Fuel: DIESEL
Date of Testing: 04/Nov/2020



DIESEL DRIVEN VEHICLES
Certified that the vehicle conforms to the standards prescribed under rule 115(2) of CMV Rules 1989

FUEL	Light Absorption Coefficient (Permissible Limit)	Measured Value
DIESEL	1.62	1.57334

Time of Testing: 14:05:22
Fee Without GST 150.0
CGST 13.5
SGST 13.5
Fee Charged: Rs.177.0
Fee Charged:

(one hundred seventy seven rupees only)

Auto Emission Testing Centre Code: OR0230030
GST No: 21ASLPS3656D1ZR
Testing Centre Name: TRUPTI
POLLUTION TESTING
Centre Address: PLOT NO-1207/9826
OMPLINE, JHARSUGUDA, 768204
Test Conducted By: BAURIBANDHU
SWAIN



In case of any complain Please write to Transport Commissioner Odisha

TEST RESULT FOR DIESEL VEHICLE

	IDLE RPM	MAX RPM	K_VALUE	OIL TEMP
TEST 1	924.0	2630.0	1.79	0.0
TEST 2	926.0	2514.0	1.71	0.0
TEST 3	823.0	2619.0	1.22	0.0
AVG	891.0	2587.66667	1.57334	0.0

This is a computer generated certificate and does not require signature

S.N	Conditions	Compliance Status
V	<p>Coal stockpile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ No coal handling plant is used. Coal is excavated using ecofriendly surface miners with in-built dust suppression system which eliminates drilling, blasting and crushing of coal and it contributes to the tune of 99.98 %. ▪ The project has presently 9 nos. of drills and all the drills are equipped with dust extractors and wet drilling arrangement.
VI	<p>Coal handling plant shall be operated with effective control measures viz. bag filters/water or mist sprinkling system etc. to check fugitive emissions from crushing operations, conveyor system, transfer points, etc.</p>	<p>Complied</p> <p>No coal handling plant is used. Coal is excavated using eco-friendly surface miners with in-built dust suppression system which eliminates drilling, blasting and crushing of coal and it contributes to the tune of 99.98 %.</p>
VII	<p>Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.</p>	<p>Complied</p> <p>No ground water is used for mining operations. Strata water and storm water is stored in mine sumps which act as ground water recharge reservoir and used for dust suppression and firefighting activities. Rooftop rainwater harvesting systems are constructed in PO Office, Manager Office and canteen.</p>

S.No	Conditions	Compliance Status
VIII	<p>Catch/garland drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly desilted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilized for dust suppression measures and green belt development. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Catch drains are made all around the coal stocks, mine working areas, roads and OB dumps. The water from catch drains are diverted to mine sumps for settling and are used for firefighting ,dust suppression and other industrial activities. ▪ Garland drains (2m x 2m) have been constructed along the periphery of the mine boundary to prevent inrush of storm water. ▪ The drains are de-silted regularly before monsoon and maintained. ▪ Plantation of native species and grass species are carried out in OB dump top and OB slopes. Till date 127.7 Ha of backfilled area and 17.5 Ha of external dump has been biologically reclaimed. ▪ Retaining wall of 100m length has been constructed around external dump.

CATCH DRAINS & GARLAND DRAINS AT LAKHANPUR OCP



RETAINING WALL AROUND EXTERNAL OB DUMP AT LAKHANPUR OCP



S.No	Conditions	Compliance Status
IX	<p>Industrial wastewater generated from CHP, workshop and other wastewater, shall be properly collected and treated to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap shall be installed and maintained fully functional with effluents discharge adhering to the norms. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ ETP has been established in HEMM workshop . ▪ ETP (50 KLD) has been equipped with Skimmer belt unit, Aeration tank and Multimedia filter with Zero discharge circuit. ▪ The quality of effluent water from ETP is monitored fortnightly. <div data-bbox="1161 615 2435 1190" data-label="Diagram"> </div> <ul style="list-style-type: none"> ▪ STP of 1.7 MLD established in residential colony.



**EFFLUENT TREATMENT PLANT-50 KLD
LAKHANPUR OCP**



**SEWAGE TREATMENT PLANT(1.7 MLD)
LAKHANPUR OCP**

S.No	Conditions	Compliance Status
X	<p>Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Rooftop rainwater harvesting systems are constructed at PO Office, Manager Office and Canteen. ▪ Mine is zero discharge mine. During monsoon, the rainwater from the mining area is collected in 03 nos. of mine sumps having capacity of 5.32 M.cum which acts as a reservoir cum recharge structures. ▪ Ground water level is also monitored in nearby villages during pre monsoon, post monsoon, monsoon and winter. ▪ Drinking water is supplied to thirteen nearby villages during summer season and six nos. of villages throughout the year from IWSS through mobile tankers.

S.N	Conditions	Compliance Status																								
4.1 (d) Illumination, noise and vibration																										
I	<p>Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Illumination survey is carried out at regular intervals as per DGMS guidelines. ▪ The report is submitted to RO, MoEF&CC on six-monthly basis. Previous report was submitted vide letter MCL/LKPA/LKPOCP/Envt./2021-22/221 dated: 31.05.2021 																								
II	<p>Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Workers engaged in drilling and blasting operations and HEMM operators are provided with Personal Protective Equipment (PPE) like dust masks, ear plugs, safety helmets, mining shoes and gumboots. ▪ Routine maintenance of all machineries deployed is carried out to reduce vibrations and noise. Safety talks are given regularly to bring awareness among the work persons <table border="1" data-bbox="1082 985 2484 1363"> <thead> <tr> <th>Items (in nos.)</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>Ear Plugs</td> <td align="center">60</td> <td align="center">400</td> <td align="center">52</td> </tr> <tr> <td>Dust Masks</td> <td align="center">1300</td> <td align="center">577</td> <td align="center">2760</td> </tr> <tr> <td>Helmets</td> <td align="center">397</td> <td align="center">371</td> <td align="center">327</td> </tr> <tr> <td>Mining Shoes</td> <td align="center">1437</td> <td align="center">1120</td> <td align="center">1087</td> </tr> <tr> <td>Gumboots</td> <td align="center">768</td> <td align="center">456</td> <td align="center">827</td> </tr> </tbody> </table>	Items (in nos.)	2018-19	2019-20	2020-21	Ear Plugs	60	400	52	Dust Masks	1300	577	2760	Helmets	397	371	327	Mining Shoes	1437	1120	1087	Gumboots	768	456	827
Items (in nos.)	2018-19	2019-20	2020-21																							
Ear Plugs	60	400	52																							
Dust Masks	1300	577	2760																							
Helmets	397	371	327																							
Mining Shoes	1437	1120	1087																							
Gumboots	768	456	827																							

ILLUMINATION AT LAKHANPUR OCP



EC Compliance Status – Lakhanpur OCP

S.N	Conditions	Compliance Status
III	Controlled blasting techniques shall be practiced in order to mitigate ground vibrations and fly rocks as per the guidelines prescribed by the DGMS.	<p>Complied</p> <ul style="list-style-type: none"> ▪ Controlled blasting technique with electronic detonators and NONEL tubes initiation is adopted. ▪ Ground vibration monitoring is also carried out during blasting. ▪ Adequate safety measures are taken during blasting and the blasting operations are carried out only during daytime. ▪ Threshold vibration limit : 10 PPV; Maximum Reading: 6.14 PPV & Min Reading: 1.51 PPV
IV	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises and report in this regard shall be submitted to the Ministry/ RO on six-monthly basis.	<p>Complied</p> <ul style="list-style-type: none"> ▪ Monitoring of Noise level is regularly done on fortnightly basis & report is submitted to RO, MoEF&CC. ▪ Last report was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021

S.N	Conditions	Compliance Status
-----	------------	-------------------

4.1 (e) Occupational health and safety

I	<p>The project proponent shall undertake occupational health survey for initial and periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any.</p>	<p>Complied In compliance to provisions of the Mines Act'1952 and DGMS circulars, regular periodic health checkup of workers is done every 5 years (both contractual and departmental) and the workers above 45 years of age are subjected at 3 years interval. 20% of employees engaged in active mining are also included in the above provision.</p> <table border="1" data-bbox="1319 692 2407 928"> <thead> <tr> <th>Particulars</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>IME</td> <td>290</td> <td>384</td> <td>365</td> </tr> <tr> <td>PME</td> <td>245</td> <td>246</td> <td>252</td> </tr> </tbody> </table>	Particulars	2018-19	2019-20	2020-21	IME	290	384	365	PME	245	246	252
Particulars	2018-19	2019-20	2020-21											
IME	290	384	365											
PME	245	246	252											

II	<p>Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Personnel working in dusty areas are provided with dust masks and training on safety and health aspects is imparted through classroom training and safety talks. ▪ During the year 2020-21, 2760 Nos. of dusk masks has been distributed to employees (including departmental & contractual).
----	--	--

EC Compliance Status – Lakhanpur OCP

S.N	Conditions	Compliance Status
III	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines	<p>Complied</p> <ul style="list-style-type: none"> ▪ Departmental and contractual workmen are trained with initial training and refresher training. ▪ During 2020-21, 1050 contractual workmen and 41 departmental workmen were imparted with initial training and 115 departmental and 107 contractual workmen were trained with refresher training.
4.1 (f) Ecosystem and Biodiversity conservation		
I	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.	<p>Complied</p> <ul style="list-style-type: none"> ▪ Site specific wildlife conservation plan for Rs. 241 Lakhs for the project has been approved by Chief Wildlife Warden, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5th May 2011). The amount of Rs. 205 Lakhs has been deposited in the CAMPA account.

SAFETY SIGN BOARDS AT LAKHANPUR OCP



S.N	Conditions	Compliance Status
4.1(g) Public hearing, R&R and CSR		
I	<p>Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The Public Hearing was held on 27.07.2007. ▪ Issues regarding pollution, R&R facilities, employment, mine water discharge, transportation of coal through public roads, medical facilities, training to local youth etc., were raised during Public Hearing. ▪ All the issues have been addressed. ▪ Odisha Rehabilitation and Resettlement policy,2006 and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 are being followed which includes Employment, Cash compensation in lieu of employment, Plot, Cash compensation in lieu of plot, Annuity, House building assistance for the eligible persons as per the policy. ▪ There are eight affected villages and 1037 project affected persons have been provided employment benefit.

S.N	Conditions	Compliance Status																								
II	<p>The project proponent shall ensure the expenditure towards socio-economic development in and around the mine, in every financial year in pursuance of the Corporate Social Responsibility Policy as per the provisions under Section 135 of the Companies Act, 2013.</p>	<p>Complied CSR activities are carried out every year in nearby villages as Corporate Social Responsibility Policy as per the provisions under Section 135 of the Companies Act, 2013. For the year 2020-21 a amount of 425.63 Lakhs has been spent for CSR works in Lakhanpur area.</p> <table border="1" data-bbox="1235 528 2484 949"> <thead> <tr> <th>Head of Schedule-VII of Companies Act,2013</th> <th>2018-19 in ₹ Lakh</th> <th>2019-20 in ₹ Lakh</th> <th>2020-21 in ₹ Lakh (unaudited)</th> </tr> </thead> <tbody> <tr> <td>Drinking Water</td> <td align="right">80.35</td> <td align="right">106.10</td> <td align="right">90.89</td> </tr> <tr> <td>Education</td> <td align="right">23.84</td> <td align="right">1.84</td> <td align="right">15.93</td> </tr> <tr> <td>Rural Development</td> <td align="right">88.38</td> <td align="right">192.98</td> <td align="right">259.54</td> </tr> <tr> <td>Other</td> <td align="right">38.58</td> <td align="right">17.29</td> <td align="right">59.26</td> </tr> <tr> <td>Total</td> <td align="right">231.15</td> <td align="right">318.23</td> <td align="right">425.63</td> </tr> </tbody> </table>	Head of Schedule-VII of Companies Act,2013	2018-19 in ₹ Lakh	2019-20 in ₹ Lakh	2020-21 in ₹ Lakh (unaudited)	Drinking Water	80.35	106.10	90.89	Education	23.84	1.84	15.93	Rural Development	88.38	192.98	259.54	Other	38.58	17.29	59.26	Total	231.15	318.23	425.63
Head of Schedule-VII of Companies Act,2013	2018-19 in ₹ Lakh	2019-20 in ₹ Lakh	2020-21 in ₹ Lakh (unaudited)																							
Drinking Water	80.35	106.10	90.89																							
Education	23.84	1.84	15.93																							
Rural Development	88.38	192.98	259.54																							
Other	38.58	17.29	59.26																							
Total	231.15	318.23	425.63																							
III	<p>The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/57/2014-IA.II (M) dated 29th October,2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations, and villages are surrounded by the mine lease area'.</p>	<p>Complied Necessary R & R work has been carried out as per Govt. Policy and CSR activities, Drinking water supply to villages, separate road for coal transportation, controlled blasting, dust suppression etc. are being carried out.</p>																								

RENOVATION OF PIPILIKANI VILLAGE POND-LAKHANPUR AREA



SUPPLY OF DRINKING WATER TO PERIPHERAL VILLAGES LAKHANPUR AREA



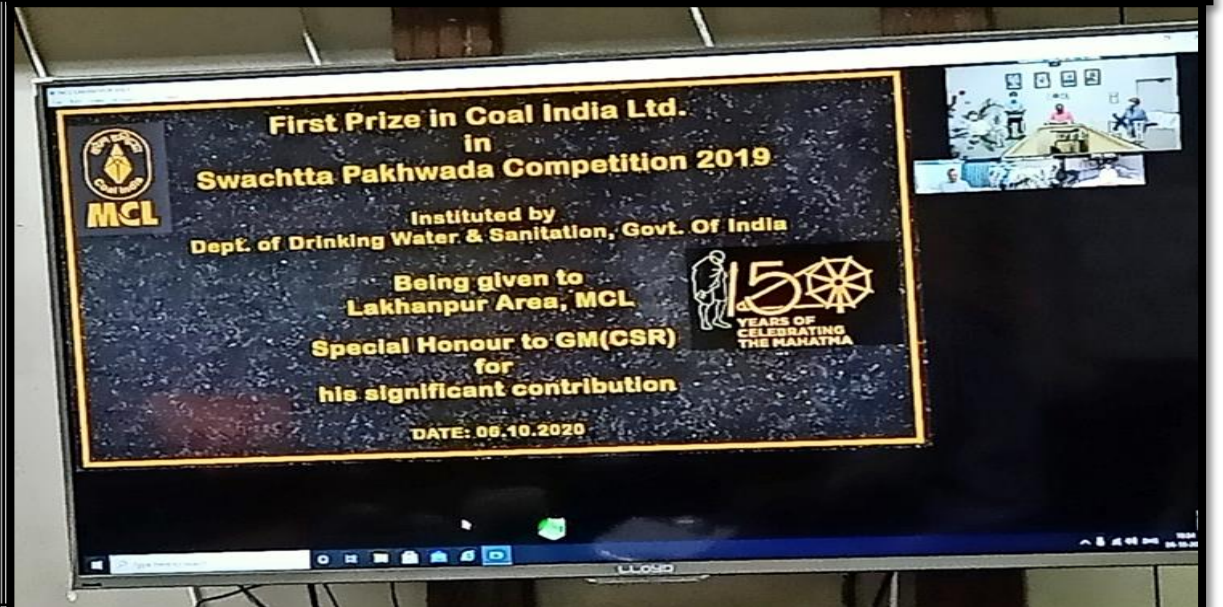
COMMUNITY CENTER AT JAYBUDIA-LAKHANPUR AREA



AWARENESS PROGRAMME ON AGRO FORESTRY-LAKHANPUR AREA



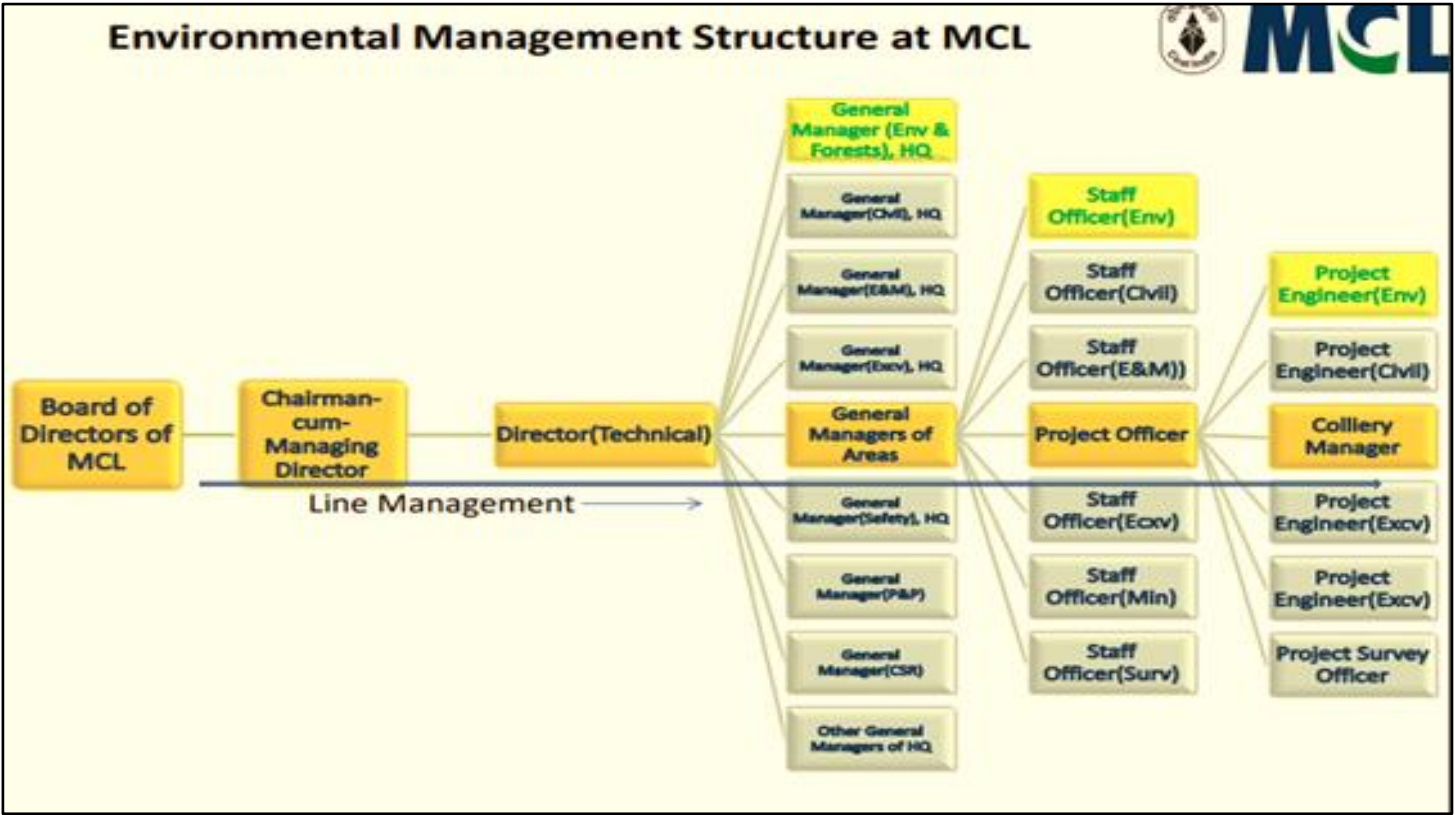
AWARDS AND ACCOLADES-LAKHANPUR AREA



AWARDS AND ACCOLADES-LAKHANPUR AREA



S.N	Conditions	Compliance Status
IV	<p>The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court regarding acquiring grazing land.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Project affected families are provided with plot as per Odisha Rehabilitation and Resettlement policy. The rehabilitation sites of Lakhanpur OCP i.e., Ganesh Nagar and Jagannath Nagar has land for livestock grazing.
4.1 (h)		
I	<p>The Company shall have a well laid down environment policy duly approved by Board of Directors. The environment policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. Also, the company shall have a defined system of reporting of non-compliances/violations of environmental norms to the Board of Directors and/or shareholders/stakeholders.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The environment policy approved by Board of Directors dated 09.05.2019 is available online at company's website in the following link https://mahanadicoal.in/Environment/pdf/MCL%20CEP-2018.pdf

S.No	Conditions	Compliance Status
II	<p>The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions should be displayed on website of the Company.</p>	<p>Complied</p> <p>The compliance of the clearance conditions is being displayed in company website. Environment management structure of the company is available online at https://www.mahanadicoal.in/Environment/pdf/ORGANISATION.pdf</p>  <p>The diagram illustrates the Environmental Management Structure at MCL. It shows a hierarchical flow starting from the Board of Directors of MCL, through the Chairman-cum-Managing Director and the Director (Technical). The Director (Technical) oversees General Managers of Areas, which include General Manager (Env & Forests), General Manager (Civil), General Manager (E&M), General Manager (Exc), General Manager (Safety), General Manager (P&P), General Manager (CSR), and Other General Managers of HQ. These General Managers oversee various Staff Officers (Env, Civil, E&M, Exc, Min, Surv) and Project Officers. The Project Officers are responsible for Project Engineers (Env, Civil, Exc), Colliery Managers, Project Engineers (Exc), Project Engineers (Exc), and Project Survey Officers.</p>

S.No	Conditions	Compliance Status
III	<p>A separate environmental management cell both at the project and company headquarter level, with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.</p>	<p>Complied A separate environmental management cell has been established in project level with</p> <ul style="list-style-type: none"> ▪ Project Environment officer (E3 grade) reporting to Project officer (E7 grade) at project ▪ Area Environment officer (E3-E5 grade) in area level reporting to General Manager ▪ Environment department has been established in Headquarters' level directly reporting to Head of the organization.
IV	<p>Action plan for implementing EMP and environmental conditions shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ EMP and Environmental conditions are reviewed periodically at Project, Area and HQ level. ▪ The year wise funds earmarked for environmental protection measures is kept in separate account and not diverted for any other purpose. ▪ Year-wise expenditure of environment related works is being submitted to RO MoEF&CC Bhubaneswar in the six-monthly report. ▪ Last report was submitted vide letter No.: MCL/LA/PO/LKPOCP/Envt.20-21/753 dated: 29.05.2021

S.No	Conditions	Compliance Status
V	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	<p>Complied</p> <ul style="list-style-type: none"> ▪ During 2020-21 third party environmental audit was carried out by CSIR-NEERI, Kolkata and the report was submitted on dated 11.05.2021. ▪ Inter-project Environment audit is carried out on quarterly basis to review the environmental condition. A multidisciplinary team from IB valley Area inspected the EC conditions of the project. Previous Audit for the period Jan 2021- March 2021 was carried out on 12.05.2021.

4.1 (I) Statutory Obligations

I.	The environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law from time to time, and as applicable to the project.	Agreed and complied
II	This environmental clearance shall be subject to obtaining wildlife clearance, if applicable, from the Standing Committee of National Board for Wildlife.	<p>Complied</p> <p>Site specific wildlife conservation plan for the project has been approved by Chief Wildlife Warden, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5th May 2011.</p>

EC Compliance Status – Lakhanpur OCP



S.No	Conditions	Compliance Status
III	The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the concerned State Pollution Control Board.	Complied Consent to Establish (No.2256/ IND –II- NOC_ -6151 Dated: 03/03/2018) and Consent to Operate (No. 5278/IND-I-CON-1220 Dated: 26.03.2021) has been obtained from Odisha State Pollution Control Board for 21MTY.
IV	The project proponent shall obtain the necessary permission from the Central Ground Water Authority (CGWA)	Complied No Objection Certificate (NOC) to abstract groundwater w.r.t Lakhanpur OCP was obtained vide no. CGWA/NOC/MIN/ORIG/2020/9248 dtd 09.12.2020 which is valid till 08.12.2022.

S.No	Conditions	Compliance Status
4.1 (j) Monitoring of Project		
I	<p>Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months..</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Four nos. of ambient air quality monitoring stations have been established in the core zone as well as in the buffer zone based on the meteorological data, topographical features in consultation with the State Pollution Control Board and the monitoring is being carried out fortnightly in a month. ▪ Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. is carried out six monthly.. ▪ Last report was submitted to OSPCB and ERO, MoEF&CC vide L.No: MCL/LKPA/LKPOCP/Envt./2021-22/221 dated: 31.05.2021

HEAVY METALS IN AMBIENT AIR: LAKHANPUR OCP MONITORING STATION : SOUTH WEST OF MINE

DATE OF SAMPLING	Arsenic (ng/cum)	Nickle (ng/cum)	Lead (µg/cum)
JUNE-20	<1.0	<1.0	<0.1
JULY-20	<1.0	<1.0	<0.1
AUGUST-20	<1.0	<1.0	<0.1
SEPTEMBER-20	<1.0	<1.0	<0.1
OCTOBER-20	<1.0	<1.0	<0.1
NOVEMBER-20	<1.0	<1.0	<0.1
DECEMBER-20	<1.0	<1.0	<0.1
JANUARY-21	<1.0	<1.0	<0.1
FEBRUARY-21	<1.0	<1.0	<0.1
MARCH-21	<1.0	<1.0	<0.1
PERMISSIBLE LIMIT	6.0 (Annual)	20.0 (Annual)	1.0 (24 Hrs)

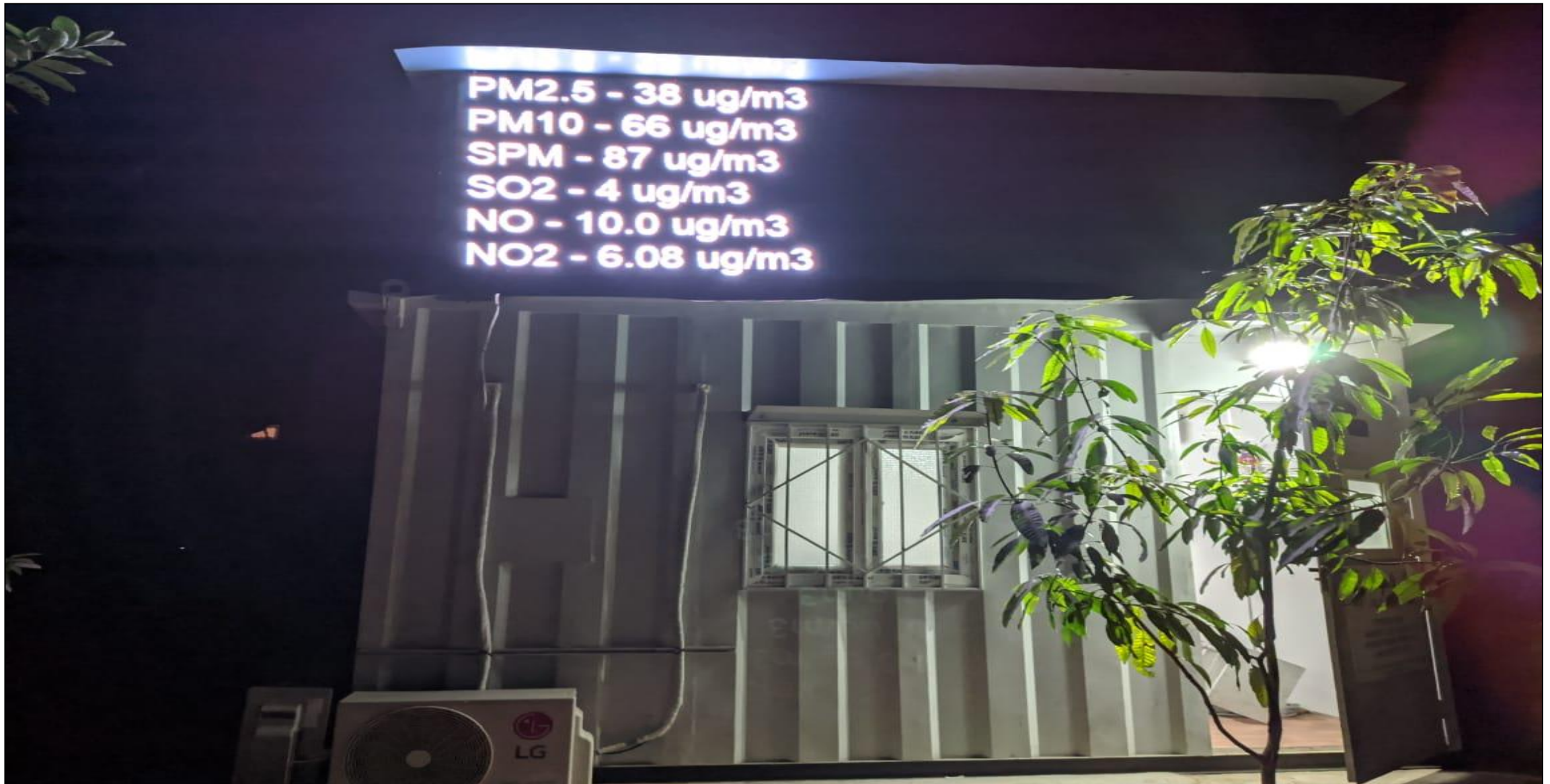
* All values depicted above are Below Detectable Limit.

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
II.	<p>The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Ambient Air Quality monitoring is carried out in core zone as per Coal Mine Standards notified vide GSR 742 (E) dated 25.9.2000. ▪ Data on ambient air quality monitoring and heavy metal monitoring is submitted to SPCB and RO, MoEF&CC. ▪ Last report was submitted to OSPCB and ERO, MoEF&CC vide letter No: L.No: MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021.
III	<p>The effluent discharge (mine wastewater, workshop effluent) shall be monitored in terms of the parameters notified under the Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.</p>	<p>Complied</p> <p>The effluent discharge is monitored as per Coal Mine Standards vide GSR 742 (E) dated 25.9.2000.</p>

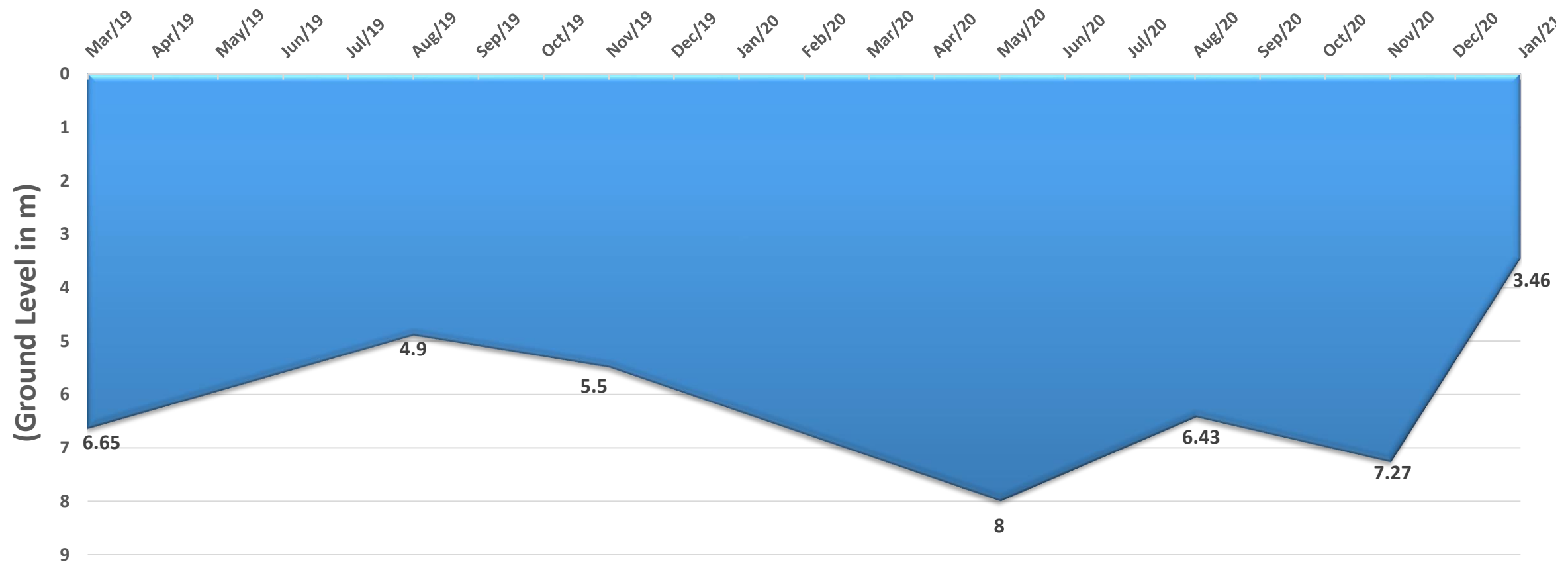
S.No	Conditions	Compliance Status
IV	<p>The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.</p>	<p>Complied The monitoring data for air, water and noise is displayed at the project site through electronic board and uploaded on the company's website.</p>
V	<p>Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e., pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to Ministry of Environment, Forest and Climate Change/Regional Office.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Monitoring of ground water level and quality is carried out during pre monsoon, post monsoon, monsoon and winter in village wells and piezometers. ▪ A total of 17 piezometers have been constructed in Ib Valley coalfields out of which 2 piezometers are under Lakhanpur area.

Continuous Ambient Air Quality Monitoring Station (CAAQMS)



Monitoring of Ground Water level (mbgl) in Lakhanpur Area

MIP - 09
 (Village Junion; Inside the
 premisses of State Govt.Horticulture Institute)



EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
VI	<p>Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.</p> <p>The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental conditions to the Ministry of Environment, Forest and Climate Change/Regional Office. For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The surface water quality is monitored for both upstream and downstream of the nearby water bodies (Lilari nallah). ▪ The half yearly compliance reports are submitted to RO, MoEF&CC. ▪ Last report was submitted to ERO, MoEF&CC vide letter No: Ref. No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021.
VII	<p>The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental conditions to the Ministry of Environment, Forest and Climate Change/ Regional Office. For the half yearly monitoring report, the data should be monitored for the period of April to September and October to March for financial years.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ Last report was submitted to ERO, MoEF&CC vide letter No: Ref. No. MCL/LKPA/LKPOCP/Envvt./2021-22/221 dated: 31.05.2021.

S.N	Conditions	Compliance Status
VIII	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports	Agreed and complied
4.1 (k) Miscellaneous		
I	Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.	Complied <ul style="list-style-type: none"> ▪ The conventional lights are being replaced by LED lights in offices, street lightings & mines (Coal face, OB face, OB dumps, Haul roads, Workshops etc.). ▪ LED lights: 20W- 100 nos., 70W- 367 nos., 80W- 100 nos., 120W- 290 nos. 250W- 140 nos. 400W- 97 nos. have been installed.
II	The project authorities shall inform to the Regional Office regarding commencement of mining operations.	Complied <ul style="list-style-type: none"> ▪ Project has commenced the mining operations on 28.02.2019 after obtaining Consent To Establish and Consent To Operate and it has been communicated to ERO, MoEF&CC vide letter No. MCL/LKPA/PO/ LKPOCP/Envt.18-19/3812 Dated: 28/02/2019.

EC Compliance Status – Lakhanpur OCP



S.No	Conditions	Compliance Status
III	A copy of the environmental clearance shall be marked to concerned Panchayat. A copy of the same shall also be sent to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.	<p>Complied</p> <p>A copy of environmental clearance has been forwarded to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Odisha State Pollution Control Board <input type="checkbox"/> Regional Office, MoEF&CC <input type="checkbox"/> District Collector <input type="checkbox"/> Tehsildar Office, <input type="checkbox"/> District Industry Sector and <input type="checkbox"/> Sarpanch of concerned Panchayat <p>vide letter no: MCL/LKPA/PO/LKPOCP/Envnt.18-19/66, 67, 68, 69, 70 & 71 Dated: 18/02/2019 respectively.</p>
IV	The EC shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain.	<p>Complied</p> <p>Environmental clearance for 21MTY has been uploaded in company website and compliance status is uploaded in company's website and updated once in every six months.</p> <p>https://mahanadicoal.in/Environment/Clearances_compliances.htm</p>

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
V	<p>The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same shall be forwarded to the Regional Office.</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The PP has advertised on 17.01.2020 in two widely circulated newspapers, i.e. Indian Express (English) and Sambad (Odia).

S.N	Conditions	Compliance Status
VI.	<p>The environmental statement for each financial year ending 31 March in Form-V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the Company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail. Concerns raised during public hearing</p>	<p>Complied</p> <ul style="list-style-type: none"> ▪ The environmental statement in Form-V for each financial year ending 31st March is submitted to State Pollution Control Board. It was submitted for the year 2019-20 vide letter no. एम.सी.एल./ मुख्यालय/ पर्यावरण&वन/2020/157 dated 28-09-2020. ▪ Form-V and Compliance of EC conditions have been uploaded in company website. https://mahanadicoal.in/Environment/Clearances_compliances.htm
VII	<p>The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter</p>	<p>Agreed and complied</p> <ul style="list-style-type: none"> ▪ The project has obtained Consent to Establish (No.2256/IND-II- NOC -6151 Dated: 03/03/2018) and Consent to Operate (No. 5278/IND-I-CON-1220 Dated: 26.03.2021) under Air (PCP) Act, 1981 and Water (PCP) Act, 1974 and conditions states thereby are complied. ▪ Any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter will be complied.

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
5	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.	<p>Agreed and complied</p> <p>All the commitments and recommendations made in the EIA/EMP report and that during presentation to EAC are being complied. Issues raised in public hearing are also being implemented.</p>
6	The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The ministry or any other competent authority may stipulate any further condition for environmental protection. The ministry or any other competent authority may stipulate any further condition for environmental protection.	<p>Agreed and complied</p> <p>The project have obtained necessary clearances- Consent to Establish (No.2256/ IND –II- NOC_ -6151 Dated: 03/03/2018) and Consent to Operate (No. 5278/IND-I-CON-1220 Dated: 26.03.2021) before start of the project and any other further condition stipulated by ministry or any other competent authority for environmental protection will be complied.</p>
7	Any appeal against this environmental clearance shall lie with National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of National Green Tribunal Act,2010.	<p>Agreed and complied</p>

EC Compliance Status – Lakhanpur OCP

S.No	Conditions	Compliance Status
8.	The coal company/ project proponent shall be liable to pay compensation against illegal mining, if any, and as raised by the respective State Government at any point of time, in terms of the orders dated 2 nd August 2017 of Hon'ble Supreme Court in WP(Civil) No.114/2014 in the matter of “Common Cause Vs Union of India & Others”	<p>Agreed and complied</p> <p>The project will comply the orders of Hon'ble Supreme Court as per the EC condition mentioned.</p>
9	The project proponent, without prejudice to this environmental clearance, shall be bound to comply with any other interpretation of the orders of Hon'ble Supreme Court also, in due course of time.	<p>Agreed and complied</p> <p>The project will comply the orders of Hon'ble Supreme Court as per the EC condition mentioned.</p>
10	This EC supersedes the earlier granted vide letter No. J-11015/391/2012-IA.II (M) dated 21 st May 2014 with a capacity 18.75 MTPA.	<p>Complied</p> <p>EC for 21 MTPA has been obtained vide No. J-11015/391/2012-IA.II (M) dated 13th February 2019 and the conditions are being complied. MoEF&CC has granted EC on 10.01.2020 for a period of 30 years or life of the mine, whichever is earlier under the provisions of EIA Notification, 2006.</p>

**COMPLIANCE REPORT AND ACTION TAKEN ON
ADDITIONAL CONDITIONS OF
EC DATED 10th January 2020**

S.N	Conditions Conditions	Compliance Status
-----	--------------------------	-------------------

Additional conditions:

i.	EAC desired that the MoC may direct CIL subsidiaries to comply the EC/FC/CTO conditions strictly within certain time bound manner so that the mining operations will be environmentally sustainable/viable etc.	<p>Complied</p> <ul style="list-style-type: none"> ▪ SDC cell of MoC headed by Joint Secretary (Coal) reviews compliance of EC/FC/CTO conditions at different intervals and issues directives to undertake the work in a time bound manner. This also gets followed up at CIL and MCL Board level. ▪ In the existing Mine Data Management System (MDMS) Portal a separate window opened for EC and FC conditions compliance monitoring as well as review of environmental monitoring parameters as per the directive of MoC. The details on this portal are updated regularly.
ii.	Also, EAC asked project proponent to plant 50,000 nos. of native trees with broad leaves along the villages and transportation route to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.	<p>Under Compliance</p> <ul style="list-style-type: none"> ▪ During the year 2020-21, plantation over an area of 17.5 Ha (28,000 saplings) has been carried out in villages near to the project under Urban Plantation Scheme by DFO, Jharsuguda. ▪ The remaining plantation of 30,000 saplings undertaken through DFO, Jharsuguda during 2021-22.



Plantation of 28,000 saplings (17.5 Ha) by State Forest Department under Corporate Sector Plantation scheme during 2020-21



Plantation of 28,000 saplings (17.5 Ha) by State Forest Department under Corporate Sector Plantation scheme during 2020-21



Latitude: 21.808292
 Longitude: 83.995152
 Elevation: 214.97 m
 Accuracy: 3.8 m
 Azimuth: 259° (W)
 Pitch: -10.5° (5.1°)
 Time: 29-12-2020 13:04
 Note: DFO PLANTATION 2020-21

Powered by AngleCam



Latitude: 21.817049
 Longitude: 84.06448
 Elevation: 207.16 m
 Accuracy: 3.8 m
 Azimuth: 318° (NW)
 Pitch: -7.1° (3.5°)
 Time: 29-12-2020 11:13
 Note: DFO PLANTATION 2020-21

Powered by AngleCam



Azimuth: 78° (E)
 Pitch: -1.9° (3.5°)
 Time: 29-12-2020 10:37
 Note: DFO PLANTATION 2020-21

Powered by AngleCam



Latitude: 21.817049
 Longitude: 84.064423
 Elevation: 208.36 m
 Accuracy: 3.8 m
 Azimuth: 191° (S)
 Pitch: -13.3° (3.6°)
 Time: 29-12-2020 11:13
 Note: DFO PLANTATION 2020-21

Powered by AngleCam

Specie planted:Lemon, Sissoo, Karanj, Gambhari, Dhranj, Mango, Guava, Kadam, Amla, Jamun, Jackfruit, Ber, Peepal, Kaju, Pista, Custard Apple etc

EC Compliance Status – Lakhanpur OCP



S.N	Conditions	Compliance Status
iii	The project proponent shall comply with all statutory requirements and judgement of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and ors. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the project proponent through their respective department in strict compliance of judgement of Hon'ble Supreme Court dated 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.	Agreed and complied
iv.	Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table. The intersecting ground water table. The intersecting ground water table can only be commenced after conducting detailed hydrogeological study and necessary permission from the CGWA. The Report on six monthly basis on changes in Ground water level and quality shall be submitted to the Regional Office of the Ministry, CGWA and State Pollution Control Board.	<p style="text-align: center;">Complied</p> <p>No Objection Certificate (NOC) to abstract groundwater w.r.t Lakhanpur OCP was obtained vide no. CGWA/NOC/MIN/ORIG/2020/9248 dtd 09.12.2020 which is valid till 08.12.2022.</p> <p>The Report on six monthly basis on changes in Ground water level and quality is submitted to the Regional Office of MoEF&CC and State Pollution Control Board.</p>

S.N	Conditions	Compliance Status												
v	<p>Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking etc. shall be undertaken once in six months and necessary remedial/preventive measure taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; the prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.</p>	<p>Complied</p> <ul style="list-style-type: none"> • Specialist in Occupational Health has been appointed for regular periodic medical examination of the workers engaged in the project. • Periodic medical examination of workers engaged in mining is conducted in 5 years and the workers above 45 years of age are subjected to health checkup in 3 years interval. • Occupational Health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. is carried out once in six months. • The prevention measures for burns, malaria and provision of anti-snake venom including all other paramedical safeguards is ensured. <table border="1" data-bbox="1294 1045 2346 1339"> <thead> <tr> <th>Particulars</th> <th>2018-19</th> <th>2019-20</th> <th>2020-21</th> </tr> </thead> <tbody> <tr> <td>IME</td> <td>290</td> <td>384</td> <td>365</td> </tr> <tr> <td>PME</td> <td>245</td> <td>246</td> <td>252</td> </tr> </tbody> </table>	Particulars	2018-19	2019-20	2020-21	IME	290	384	365	PME	245	246	252
Particulars	2018-19	2019-20	2020-21											
IME	290	384	365											
PME	245	246	252											

S.No	Conditions	Compliance Status
vi	<p>Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II(M) dated 29th October, 2014, titled “Impact of mining activities on Habitations-Issues related to the mining projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area”.</p>	<p>Complied Project authorities are following the measures provided in Office Memorandum No. Z-11013/57/2014-IA.II(M) dated 29th October, 2014, such as construction of check dams, retaining walls/structure, garland drains, settling ponds, drinking water supply to villagers, regular water table monitoring, provision of water sprinklers and water tankers, CSR expenditure based 2% turnover, No blasting near public works.</p>
vii	<p>The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.</p>	<p>Complied Floodlights/masts are oriented away from the villages and noise levels are maintained within the prescribed limits during day light/night hours.</p>

EC Compliance Status – Lakhanpur OCP

S.N	Conditions	Compliance Status
viii	<p>The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the state Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.</p>	<p>Complied. Site specific wildlife conservation plan for Rs. 241 Lakhs for the project has been approved by Chief Wildlife Warden, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5th May 2011). The amount of Rs. 205 Lakhs has been deposited in the CAMPA account.</p>
ix	<p>Hon'ble Supreme court in an Writ petition(s) Civil No. 114/2014, Common Cause vs union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Ministry's Regional Office for site inspection/verification.</p>	<p>Agreed to comply</p>

Thank You