Ambuja Cement

Ref: ACL/BYT/ENV/2022-23/ 125

Date: 29.11.2022

To,
Regional Officer,
Integrated Regional office,
Ministry of Environment, Forest & Climate Change,
Aranya Bhawan, North Block,
Sector-19, Naya Raipur, Atal Nagar,
Chhattisgarh 492002.

Sub: Submission of Half Yearly Environment Clearance Compliance Report along with Environmental Monitoring Report for the period **April 2022 to September 2022** for Rawan Limestone Mines.

Ref: EC letter no. J-11015/330/2006-IA II (M) dated 8th June 2007.

Dear Sir,

Please find the enclosed herewith the six-monthly Environment Clearance compliance report along with Monthly Environmental Monitoring report from **April 2022 to September 2022,** for our Rawan Limestone Mine at Village & Post office-Rawan, Distt. Balodabazar, Chhattisgarh.

This is for your kind information and record.

Thanking you.

Yours Sincerely,
For Ambuja Cements Limited
(Unit: Bhatapara)

(Mahaveer Singh Boila)
Chief Operations Manager

Encl.: Six Monthly Environment Clearance compliance report along with Environment Monitoring report.

Copy to:

1. Central Pollution Control Board, Zonal Office, Sahkar Bhawan, North T.T. Nagar, Bhopal -462003.
2. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Atal Nagar (C.G.) 490099.
3. The Regional Officer, CECB, Kabir Nagar Commercial Complex, Chhattisgarh Housing Board Colony, Kabir Nagar, Raipur (C.G.)

AMBUJA CEMENTS LIMITED
(Unit - Bhatapara)
Village & PO. : Rawan, Tehsil Balodabazar, Dist.: Baloda, Bazar-Bhatapara, Chhattisgarh- 493 331
Ph.: 07727-220010 to 15, Fax: 077277220004
CIN: L2694GJ1981PL004717, Website:www.ambujacement.com
Regd. Office: PO: Ambuja Nagar, Taluka: Kodinar, District: Gir Somnath,, Gujarat, 362715

Environment Clearance Half Yearly Compliance Report (April 2022 – September 2022)

of

Rawan Limestone Mine
(Capacity: 6.31 MTPA, ML Area: 420.95 Ha.)
Located at
P.O. Rawan, Tehsil- Baloda Bazar,
District-Baloda Bazar- Bhatapara, Chhattisgarh

M/s AMBUJA CEMENTS LTD.
(Unit: Bhatapara)
P.O.: Rawan, Tehsil. &Dist.: Baloda Bazar - Bhatapara Chhattisgarh - 493331, India

Compliance Status of Environmental Clearance Conditions accorded by MoEFCC for the Expansion Project of Rawan Limestone Mine from 2.06 MTPA to 6.31 MTPA of M/s Ambuja Cements Ltd. Located at P.O. Rawan, Tehsil: Baloda Bazar, District Raipur, Chhattisgarh. Ref. no. J-11015/330/2006-IA II (M),Date: 8th June 2007

Sr. No.	EC Conditions	Compliance Status
A. Specific Conditions		
i.	Top soil shall be stacked properly with proper slope with adequate safeguards and shall be backfilled for reclamation and rehabilitation of mined out area.	**Being complied.** Top soil is stacked separately and utilization for reclamation and rehabilitation of mined out area and green belt development.
ii.	Over burden shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 20 m each stage shall preferably be of 10 m and over all slope of the dump shall not exceed 26°. The reverse slope shall be maintained to prevent wash off and water logging during rainy season. The mine pit area shall be reclaimed by back filling the OB in a phased manner. The OB dump shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall submit to the Ministry Of Environment & Forests on six month basis.	**Complied.** The overburden dumps are having maximum height of 20 m and overall slope of 26° is being maintained. The reverse slope is being maintained to prevent wash off and water logging during rainy season. The mine pit area reclamation is being done by back filling the OB in phased manner. The OB is stacked at non mineralized area. Inactive OB dumps are being stabilized by coir matting followed by plantation of native plant species. Six monthly compliance is being submitted regularly to MoEF&CC Regional Office, Nagpur. Last compliance report was submitted via mail dated 28.05.2022 copy is enclosed as **Annexure-I**
iii.	Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.	**Complied.** Garland drains are constructed around the dumps to arrest silt and sediment flows. The drains are connected to a settling tank or mine pits and accumulated water is being used for dust suppression, plantation etc. De-silting of garland drains is carried out at regular intervals. Photograph is enclosed as **Annexure-II.**

Sr. No.	EC Conditions	Compliance Status
iv.	Controlled drilling and blasting shall be done by using dust extractors/wet drilling.	**Complied** Controlled blasting using non-electric delay initiation system is being practiced. Drilling is carried out with drill machines equipped with dust collector as well as water injection. Photograph is enclosed as **Annexure-III.**
v.	Plantation shall be raised in an area of 98.04 ha including green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	**Being complied.** Phase wise plantation is being carried out as approved mine plan in safety zone, along roads and on inactive OB dumps as shown in **Annexure IV.** The density of plantation is maintained at around 2500 plants per ha.
vi.	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	**Complied.** Conservation measures to augment ground water resources in the mine area in consultation with the Regional Director, Central Ground Water Board. Rainwater accumulates in the mines pit percolate to the ground thereby recharging the ground water table, Photographs enclosed **Annexure V**.
vii.	Regular monitoring of ground water level and quality shall be carried out by establishing well and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year–pre-monsoon (April-May), monsoon (August), Post Monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.	**Complied** Three Piezometers are established in the ML area. Ground water level and quality is being monitored Post Monsoon (November) and winter (January). Water level monitoring and water quality analysis results enclosed as **Annexure-VI.** The Piezometers with telemetry system has been installed and photographs of same is attached as Annexure **VI - a**
viii.	Prior permission from the competent authority shall be obtained for drawl of ground water, if any.	**Complied.** We have obtained the NOC from CGWA copy enclosed as **Annexure-VII**
ix.	Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	**Complied** Transportation of mineral from crusher to plant by the fully covered belt conveyer and vehicles used for mineral transportation are maintained periodically to control exhaust emissions and all the vehicles are PUC certified. Overloading vehicles transporting minerals within the mine lease is strictly prohibited.
x.	A final mine closure plan, along with details of corpus fund, shall be submitted to the Ministry Of Environment & Forests 5 years in advance of final mine closure for approval.	**Noted for compliance.** Final mine closure plan, along with details of corpus fund, will be submitted to MoEF&CC, 5 years in advance of final mine closure.

Sr. No.	EC Conditions	Compliance Status
B. General Conditions		
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry Of Environment & Forests.	**Noted and Complied** No change in mining technology and scope of working will be made without prior approval of MoEF&CC.
ii.	No change in the calendar plan including excavation, quantum of mineral limestone ore shall be made.	**Noted and Complied** Limestone is being produced as per the calendar plan and EC permission.
iii.	Conservation measures for protection of flora and fauna in the core and buffer zone shall be drawn up in consultation with the local forest and wildlife department.	**Noted and complied.** Thick plantation using local flora species is being carried out on safety zone, along transport roads and on inactive dumps with consultation of Forest Department. Fencing of the mining area is being carried out to avoid inadvertent entry of persons/animals. Plantation Survey has been conducted by Consultant Forest. The request letter for certification of green belt area is attached as **Annexure -IV & VIII.**
iv.	Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO2, NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State pollution Control Board.	**Complied** Ambient Air quality monitoring locations have been established in the core zone and in buffer area. Regular air quality monitoring is being carried out by NABL Accredited lab Monitoring report is enclosed as **Annexure-IX.**
v.	Data on ambient air quality (RPM, SPM, SO_2 and NOx) should be regularly submitted to the Ministry including its regional office located at Bhopal and the State Pollution Control Board/ Central Pollution Control Board once in six months.	**Complied** Four CAAQMS installer and its connectivity given to CPCB and CECB. Ambient air quality is regularly monitored by NABL accredited Lab and reports are submitted to Regional office of MoEF&CC, CECB & CPCB regularly.
vi.	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	**Complied** Mobile water sprinklers are provided for periodic water sprinkling on haul roads and fix sprinklers installed at loading and unloading points, etc. Regular water sprinkling is being carried out at fugitive dust emission sources to control dust emissions. Photograph enclosed as **Annexure- IX.**

Sr. No.	EC Conditions	Compliance Status
vii.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc shall be provided with ear plugs/muffs.	**Complied** Periodic maintenance of machinery used in mines is carried out to control noise below 85 dBA. Workers engaged in drilling & HEMM operations are provided with ear plugs/Muffs. Periodic noise level monitoring is conducted. The Ambient Noise monitoring report enclosed as **Annexure-X.**
viii.	Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.	**Complied** There is no process effluent generation in the mines. Effluent from workshop in the mine is treated in Oil and Grease trap system provided in the workshop. Surface run-off from the broken-up area is collected in settling tank/mine pits and is used for dust suppression and plantation. Analysis report is enclosed as **Annexure- XI.**
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Complied Protective Respiratory Devices (dust masks) are provided & safety appliances are being used by the workers. Shoes, dust mask, helmet & ear plug, have been provided & pre-employment and refresher safety training is being given to all the workers.
x.	Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	**Complied** Occupational health surveillance program for all workers are undertaken periodically as per Mine Acts.
xi.	A separate environmental management cell 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.	**Complied** Environmental Management Cell has been established under supervision of Environmental Manager. The Environmental Manager directly reports to the Unit Head.
xii.	The project authorities shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	**Complied** Annual financial closures is on 31st December • Environmental Clearance granted by MOEF vide letter no. J-11015/330/2006-IA II (M) date:08.06.2007 • Mine is in operation since 1984.
xiii.	The fund earmarked for environmental protection measures shall be kept in separate account and should not be diverted to other purpose. Year wise expenditure shall be reported to the Ministry and its regional office Bhopal.	**Noted & being complied.**

Sr. No.	EC Conditions	Compliance Status
xiv	The project authority shall inform to the Regional Office located at Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	**Complied** Annual financial closures is on 31st December • Environmental Clearance granted by MOEF vide letter no. J-11015/330/2006-IA II (M) date:08.06.2007 • Mine is in operation since 1984.
xv.	The Regional Office of this Ministry located at Bhopal 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.	**Noted.**
xvi	A copy of clearance letter will be marked to concerned Panchayat/ local NGO, if any, from whom suggestion/representation has been received while processing the proposal.	**Complied.**
xvii.	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.	**Complied.**
xviii	The project authorities should 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 the website of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry located in Bhopal.	**Complied.** Published in Central chronical, Raipur dated 15.06.2018 and Harit Bhumi Raipur dated 15.06.2018, Copy is enclosed as **Annexure-XII**
5.	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environmental protection.	**Noted.**
6.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	**Noted.**
7.	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. Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (insurance) Liability Act, 1991 along with their amendments and rules.	**Noted**

Annexure - I

Environment Bhatapara <environment.bhatapara-ind@ambujacement.com>

EC Half yearly Compliance Report (Oct 2021 to Mar 2022)

Environment Bhatapara <environment.bhatapara-ind@ambujacement.com> Sat, May 28, 2022 at 7:23 PM
To: IRO Raipur <iro.raipur-mefcc@gov.in>
Cc: CPCB RD Bhopal <cpcb.bhopal@gmail.com>, Head Office CECB <hocecb@gmail.com>, Regional Officer <rocecbraipur2014@gmail.com>, eccompliance-cg@gov.in

Dear Sir,

Please find enclosed herewith Half yearly EC Compliance Report of stipulated conditions along with Monthly Environmental Monitoring Report for the period (Oct 2021 to Mar 2022) of Cement plant and Maldi Mopar Mine and Rawan Mine of Ambuja cements Ltd. Bhatapara integrated Cement plant . Copy of same will uploaded on the company & MOEFCC website shortly .

This is for your kind information and record please.

With Best Regards
Subhash Awasthi,
Head Environment (DGM)
Ambuja Cement Ltd (Bhatapara Unit),
Rawan Village, Baloda Bazar Dist.,
Chhattisgarh-493331,
Office: 8982073666.

3 attachments

- **Bhatapara_EC 6.31 MTPA _Rawan Limestone Mine Compliance Report (OCT 2021- MAR 2022).pdf** 2675K
- **Bhatapara_EC 4.8 MTPA _Cement Plant Compliance Report (OCT 2021- MAR 2022).pdf** 4753K
- **Bhatapara_EC 2.0 MTPA _Maldimopar Limestone Mine Compliance Report (OCT 2021- MAR 2022).pdf** 6584K

Typical View of Garland Drain and Slope Stability in Dump

Annexure- III

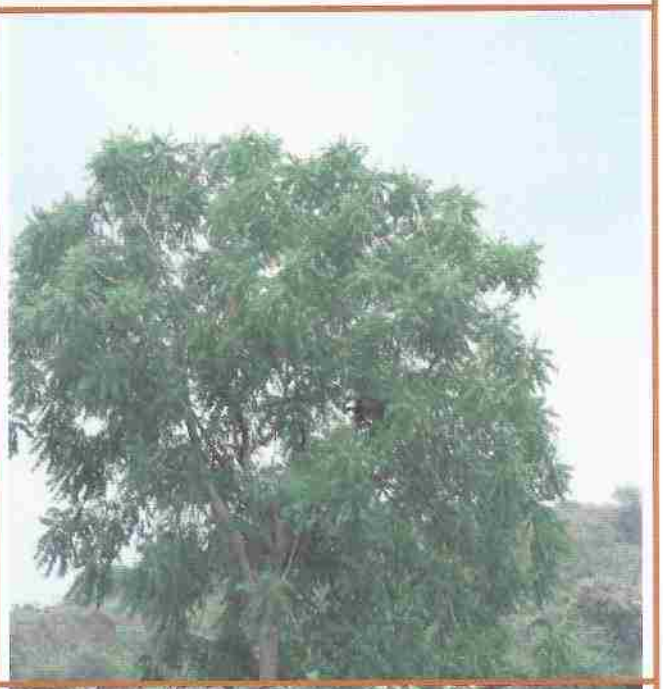
Annexure - IV

PLANTATION DETAILS YEAR WISE (RAWAN LIMESTONE MINE)				
Year of Plantation	No. of trees planted	No. of trees survived	Survival (%)	Area covered (Ha)
	Within ML	Within ML	Within ML	Within ML
2006-2007	8000	6800	85	3.20
2007-2008	5770	4327	75	3.06
2008-2009	2300	1380	60	1.08
2009-2010	1600	1184	74	1.30
2010-2011	1600	1488	93	1.07
2011-2012	2230	1070	48	1.39
2012-2013	1000	770	77	1.63
2013-2014	1000	770	77	1.63
2014-2015	6106	4800	79	1.55
2015-2016	1743	1650	95	0.22
2016-2017	2890	2456	85	1.50
2017-2018	1773	1470	83	Infilling (dump) approx. 2.00 Ha
2018-2019	2500	2144	86	infilling (dump) approx.. 1.50 Ha
2019-2020	1500	1278	85	infilling (dump) approx.. 1.50 Ha
2020-2021	1500	1050	70	infilling (dump) approx.. 1.50 Ha
Total	**41512**	**32637**	79	**17.62**

S.No.	Common name	Botanical name	S.No.	Common name	Botanical name
1	African Tulip Tree	SpathodeaCampanulata	36	Khair	Senegalia catechu
2	Alstonia (Chatim)	Alstoniascholaris	37	Karanj	Pongamia Glabra
3	Amaltas	Cassia fistula spp.	38	Karounda	Carissa carandus
4	Anar	Punica granatum	39	Kathal (Jack Fruit)	Artocarpus Heterophyllus
5	Arjuna	Terminalia arjuna	40	Kaner (Oleander & Nerium)	Theveatia Peruviana
6	Ashok Tree	Polyalthia longifolia	41	Khamhar	Gemelina arborea
7	Australian Accasia	AcasiaAuriculiformis	42	Mango	Mangifera indica
8	Anola	Embbica Officinalis	43	Mahua	Madhuca longifolia
9	Babul desi	Acacia nilotica	44	Maharukh (Mhaneem)	Ailanthus excelsa
10	Bel	Aegle marmelos	45	Musambi	Citrus sinensis
11	Bair	Ziziphus jujubai	46	Munga (Drum Stick)	Moringa oleifera
12	Bakayan	Melia azedarach	47	Mudhi	Mitragynaparvifolia
13	Babmboo	Phyllostachys	48	Neebu	Citrus limon Burma
14	Bargad (Banyan Tree)	Ficus Bengalensi	49	Neel Giri (Safeda)	Eucalyptus
15	Bottel brush (Scarlet)	Callistemon Citrinus	50	Neem	Azadirachta Indica
16	Bohar tree	Cordia myxa	51	PeltoPhorum	Peltophorumenerme
17	Cassia Saimea (Chakundi)	Cassia saimea	52	Palash (Dhak)	Butea frandosa
18	Casurina	Casurina indica	53	Palm tree (Bottel palm)	Palm tree
19	Chakotra	Achras zapota	54	Pangara	Earythrena indica
20	Chikoo (Sapota)	Achras Sapota	55	Putranjeeva (Luck Bean Tree)	Putrangivaroxburghi
21	Champa	Micheliachampaka	56	Pipal	Ficus Religiosa
22	Coral plant	Tecomagudichauri	57	Samal tree (Semhra)	Bombax ceiba
23	Coconut	Cocos nucifera	58	Seetaphal	Annona cherimola
24	Dhanbahar	Cassia festula	59	Siris	Albizia Labeck
25	Desi Badam	Terminalia catappa	60	Shahtut (Mulberry)	Morus Alba / Nigra
26	Guava	Psidium guajava	61	Sisoo	Dalbergia Sisoo
27	Gul Mohar	Delonix regia	62	Subabool	LeucenaLeucocehalla
28	Gliricidia	GliricidiaMasculata	63	Saja	Terminalia tomentosa
29	Gandhraj	Gardenia	64	Sagon (Teak)	Tectona Grandis
30	Gangaemli	Pithecellobium dulce	65	Safed siras(Karhi)	Albizzia procera, benth
31	Gular (Dumar)	Ficus racemosa	66	Tikoma	Dhobi podha
32	Imli	Temredus indica	67	Vilayatikiker	Prosopis juliflora
33	Jamun	Ujiniajaimbolana	68	White semal (Kpok Tree)	Ceiba pentandra
34	Kachanar	Bauhinia variegata	69	Laxmi taru	Simarouba glauca
35	kadamba	Anthocepholuskadamba			

1: GREEN BELT PHOTOGRAPHS


Latitude: 21°40'18"
Longitude: 82°6'12"
Elevation: 263.14 m
Accuracy: 9.8 m
Time: 20-09-2021 13:05




Latitude: 21°40'42"
Longitude: 82°5'40"
Elevation: 271.87 m
Accuracy: 3.8 m
Time: 20-08-2021 09:04
Note: Main Gate Plant


Latitude: 21°40'42"
Longitude: 82°5'40"
Elevation: 269.65 m
Accuracy: 3.8 m
Time: 20-08-2021 09:05
Note: Main Gate Plant

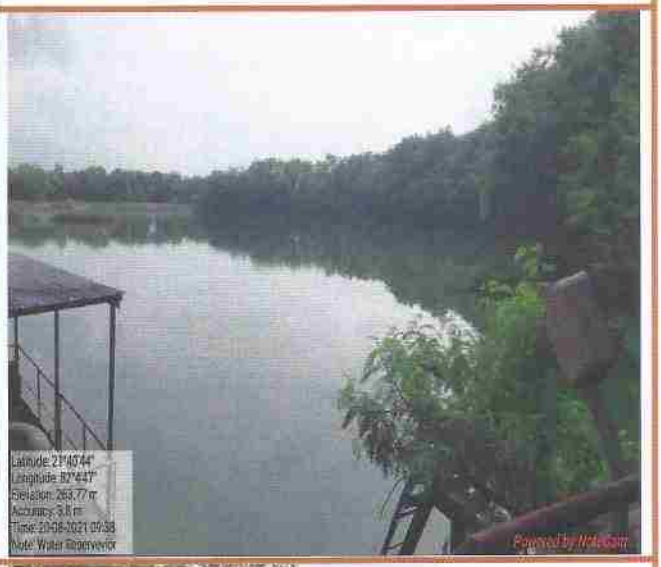

Latitude: 21°40'40"
Longitude: 82°5'19"
Elevation: 264.99 m
Accuracy: 3.8 m
Time: 20-08-2021 09:21
Note: Arjun and Shisam Plant

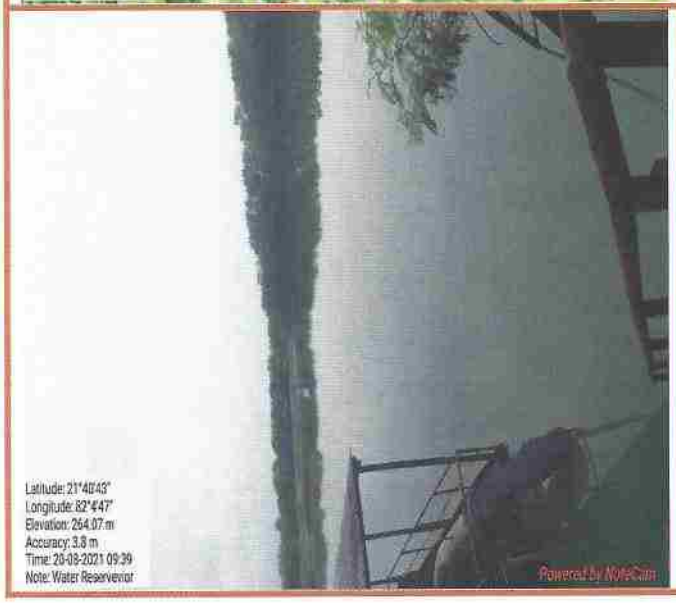

Latitude: 21°40'40"
Longitude: 82°5'19"
Elevation: 266.11 m
Accuracy: 3.8 m
Time: 20-08-2021 09:22
Note: Arjun and Shisam Plant

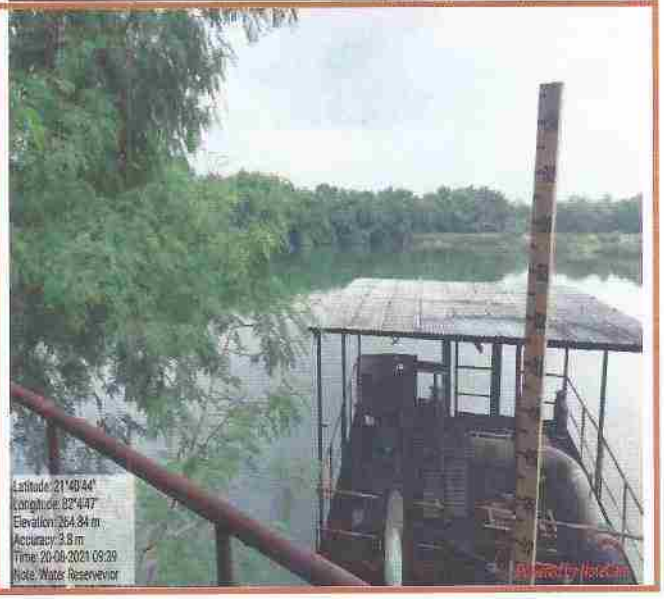

Latitude: 21°40'44"
Longitude: 82°5'5"
Elevation: 260.9 m
Accuracy: 3.8 m
Time: 20-08-2021 09:25


Latitude: 21°40'44"
Longitude: 82°4'54"
Elevation: 261.68 m
Accuracy: 3.8 m
Time: 20-08-2021 09:31
Powered by NoteCam


Latitude: 21°40'42"
Longitude: 82°4'46"
Elevation: 262.2 m
Accuracy: 3.8 m
Time: 20-08-2021 09:37


Latitude: 21°40'44"
Longitude: 82°4'47"
Elevation: 263.77 m
Accuracy: 3.8 m
Time: 20-08-2021 09:38
Note: Water Reservevior
Powered by NoteCam


Latitude: 21°40'43"
Longitude: 82°4'47"
Elevation: 264.07 m
Accuracy: 3.8 m
Time: 20-08-2021 09:39
Note: Water Reservevior
Powered by NoteCam


Latitude: 21°40'44"
Longitude: 82°4'47"
Elevation: 264.84 m
Accuracy: 3.8 m
Time: 20-08-2021 09:39
Note: Water Reservevior
Powered by NoteCam


Latitude: 21°40'26"
Longitude: 82°5'24"
Elevation: 265.29 m
Accuracy: 3.8 m
Time: 20-08-2021 09:56


Latitude: 21°40'26"
Longitude: 82°5'23"
Elevation: 268.12 m
Accuracy: 3.8 m
Time: 20-08-2021 09:53


Latitude: 21°40'26"
Longitude: 82°5'25"
Elevation: 266.16 m
Accuracy: 3.8 m
Time: 20-08-2021 09:56


Latitude: 21°40'42"
Longitude: 82°5'43"
Elevation: 272.26 m
Accuracy: 3.8 m
Time: 20-08-2021 10:03


Latitude: 21°40'42"
Longitude: 82°5'43"
Elevation: 264.24 m
Accuracy: 3.8 m
Time: 20-08-2021 10:03


Latitude: 21°40'51"
Longitude: 82°5'41"
Elevation: 269.86 m
Accuracy: 3.9 m
Time: 20-08-2021 10:13
Note: plantation in colony

PLATE 2: SURVEY PHOTOGRAPHS

Annexure- V

CONSERVATION MEASURES TO AUGMENT GROUND WATER AND COLLECTION IN MINE PIT

Annexure - VI

Nilawar Laboratories
A Unit of MNEC Consultants Pvt. Ltd)

ISO 17025:2017
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
NABL ACCREDITED LAB

CIN No. U74140MH112009PTC196108

Report No.: GE-Nilawar/EMS/2022/Feb/45 — Report Date: 21/02/2022

Name & Address of the Customer: **M/s. Ambuja Cements Limited [Unit-Bhatapara], Address: Village-Rawan, Tehsil-Baloda Bazar, Dist. Bhatapara (C.G.)**

Sample Description	: Ground Water Sample	Sampling Location: **Bore well water at Rawan Village**	
Sampling Ref Method	: IS :3025	Sample Reference: GE-NW/Feb/45/GW-1	
Sampled by	: GYAN Enviro Representative	Date of Analysis started	: 17.02.2022
Sampling Date	: 15.02.2022	Date of Analysis completed:	21.02.2022
Sample Receipt Date	: 16.02.2022	Testing Period	: 5 Days

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-1
1	Color	Hazen	5	25	1.1
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	0.5
5	Total Dissolved Solids	mg/l	500	2000	210
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	8.04
7	Dissolved Oxygen (DO)	mg/l	-	-	5.5
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8
10	Conductivity	$\mu S/cm^{-1}$	-	-	318
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	145
12	Total Hardness as $CaCO_3$	mg/l	300	600	211
13	Calcium as Ca^{++}	mg/l	75	200	50.6
14	Magnesium as Mg^{++}	mg/l	30	100	20.3
15	Chlorides as Cl	mg/l	250	1000	38.5
16	Sulphates as SO_4	mg/l	200	400	25.8
17	Fluoride as F	mg/l	1	1.5	0.12
18	Nitrates as NO_3	mg/l	45	NR	6.6
19	Iron as Fe	mg/l	0.3	1	0.02
20	Manganese as Mn	mg/l	0.1	0.3	< 0.01
21	Zinc as Zn	mg/l	5	15	<0.01
22	Copper as Cu	mg/l	0.05	1.5	< 0.01
23	Aluminium as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

Note: NTU – Nephelometric Turbidity Unit, NR – No Relaxation

For M/s Nilawar Laboratories,

Renuka Yadav
(Authorized Signatory)

Off. : First Floor, 'Pratibha Sankul', Beside Alankar Cinema, Dharampeth, Nagpur - 10. Ph. : +91-712-2542261, 2542291, E-mail : nilawarlabs@gmail.com
Laboratory : At Km 16.5, Nilawar Motors Complex, Amravati Road, Waddhamna, Nagpur - 440 023. Mob. : +91-9922409055, 9552550955

Nilawar Laboratories
A Unit of MNEC Consultants Pvt. Ltd)

ISO 17025:2017
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
NABL ACCREDITED LAB

CIN No. U74140MH112009PTC196108

Report No.: **GE-Nilawar/EMS/2022/Feb/45** — **Report Date: 21/02/2022**

Name & Address of the Customer: **M/s. Ambuja Cements Limited [Unit-Bhatapara], Address: Village-Rawan, Tehsil-Baloda Bazar, Dist. Bhatapara (C.G.)**

Sample Description	: Ground Water Sample	Sampling Location: **Bore well water at Maldi Village**	
Sampling Ref Method	: IS :3025	Sample Reference: GE-NW/Feb/46/GW-2	
Sampled by	: GYAN Enviro Representative	Date of Analysis started	: 17.02.2022
Sampling Date	: 15.02.2022	Date of Analysis completed:	21.02.2022
Sample Receipt Date	: 16.02.2022	Testing Period	: 5 Days

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-2
1	Color	Hazen	5	25	1.1
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	0.45
5	Total Dissolved Solids	mg/l	500	2000	179
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.05
7	Dissolved Oxygen (DO)	mg/l	-	-	5.8
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8
10	Conductivity	$\mu S/cm^{-1}$	-	-	271
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	155
12	Total Hardness as $CaCO_3$	mg/l	300	600	208
13	Calcium as Ca^{++}	mg/l	75	200	50
14	Magnesium as Mg^{++}	mg/l	30	100	20
15	Chlorides as Cl	mg/l	250	1000	20.4
16	Sulphates as SO_4	mg/l	200	400	26.7
17	Fluoride as F	mg/l	1	1.5	0.16
18	Nitrates as NO_3	mg/l	45	NR	9.2
19	Iron as Fe	mg/l	0.3	1	0.01
20	Manganese as Mn	mg/l	0.1	0.3	< 0.01
21	Zinc as Zn	mg/l	5	15	<0.01
22	Copper as Cu	mg/l	0.05	1.5	< 0.01
23	Aluminium as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

Note: NTU – Nephelometric Turbidity Unit, NR – No Relaxation

For **M/s Nilawar Laboratories,**

Renuka Yadav
(Authorized Signatory)

Off. : First Floor, 'Pratibha Sankul', Beside Alankar Cinema, Dharampeth, Nagpur - 10. Ph. : +91-712-2542261, 2542291, E-mail : nilawarlabs@gmail.com
Laboratory : At Km 16.5, Nilawar Motors Complex, Amravati Road, Waddhamna, Nagpur - 440 023. Mob. : +91-9922409055, 9552550955

Nilawar Laboratories
A Unit of MNEC Consultants Pvt. Ltd)

ISO 17025:2017
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
NABL ACCREDITED LAB

CIN No. U74140MH112009PTC196108

Report No.: GE-Nilawar/EMS/2022/Feb/45	Report Date: 21/02/2022
Name & Address of the Customer: **M/s. Ambuja Cements Limited [Unit-Bhatapara], Address: Village-Rawan, Tehsil-Baloda Bazar, Dist. Bhatapara (C.G.)**	
Sample Description : Ground Water Sample	Sampling Location: **Bore well water at Arjuni Village**
Sampling Ref Method : IS :3025	Sample Reference: GE-NW/Feb/47/GW-3
Sampled by : GYAN Enviro Representative	Date of Analysis started : 17.02.2022
Sampling Date : 15.02.2022	Date of Analysis completed: 21.02.2022
Sample Receipt Date : 16.02.2022	Testing Period : 5 Days

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-3
1	Color	Hazen	5	25	1
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	0.38
5	Total Dissolved Solids	mg/l	500	2000	188
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.23
7	Dissolved Oxygen (DO)	mg/l	-	-	5.8
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8
10	Conductivity	$\mu S/cm^{-1}$	-	-	285
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	158
12	Total Hardness as $CaCO_3$	mg/l	300	600	175
13	Calcium as Ca^{++}	mg/l	75	200	42
14	Magnesium as Mg^{++}	mg/l	30	100	17
15	Chlorides as Cl	mg/l	250	1000	18.4
16	Sulphates as SO_4	mg/l	200	400	31.8
17	Fluoride as F	mg/l	1	1.5	0.12
18	Nitrates as NO_3	mg/l	45	NR	8.5
19	Iron as Fe	mg/l	0.3	1	0.02
20	Manganese as Mn	mg/l	0.1	0.3	< 0.01
21	Zinc as Zn	mg/l	5	15	<0.01
22	Copper as Cu	mg/l	0.05	1.5	< 0.01
23	Aluminium as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

Note: NTU – Nephelometric Turbidity Unit, NR – No Relaxation

For M/s Nilawar Laboratories,

Renuka Yadav
(Authorized Signatory)

Off. : First Floor, 'Pratibha Sankul', Beside Alankar Cinema, Dharampeth, Nagpur - 10. Ph. : +91-712-2542261, 2542291, E-mail : nilawarlabs@gmail.com
Laboratory : At Km 16.5, Nilawar Motors Complex, Amravati Road, Waddhamna, Nagpur - 440 023. Mob. : +91-9922409055, 9552550955

Nilawar Laboratories
A Unit of MNEC Consultants Pvt. Ltd)

ISO 17025:2017
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
NABL ACCREDITED LAB

CIN No. U74140MH112009PTC196108

Report No.: GE-Nilawar/EMS/2022/Feb/45 | Report Date: 21/02/2022

Name & Address of the Customer: **M/s. Ambuja Cements Limited [Unit-Bhatapara],**
Address: Village-Rawan, Tehsil-Baloda Bazar, Dist. Bhatapara (C.G.)

Sample Description	: Ground Water Sample	Sampling Location: **Bore well water at Bhadrapalli Village**	
Sampling Ref Method	: IS :3025	Sample Reference: GE-NW/Feb/48/GW-4	
Sampled by	: GYAN Enviro Representative	Date of Analysis started	: 17.02.2022
Sampling Date	: 15.02.2022	Date of Analysis completed:	21.02.2022
Sample Receipt Date	: 16.02.2022	Testing Period	: 5 Days

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-4
1	Color	Hazen	5	25	1
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	0.28
5	Total Dissolved Solids	mg/l	500	2000	192
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	6.99
7	Dissolved Oxygen (DO)	mg/l	-	-	5.2
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8
10	Conductivity	$\mu S/cm^{-1}$	-	-	291
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	160
12	Total Hardness as $CaCO_3$	mg/l	300	600	182
13	Calcium as Ca^{++}	mg/l	75	200	44
14	Magnesium as Mg^{++}	mg/l	30	100	17.5
15	Chlorides as Cl	mg/l	250	1000	30.1
16	Sulphates as SO_4	mg/l	200	400	19.6
17	Fluoride as F	mg/l	1	1.5	0.14
18	Nitrates as NO_3	mg/l	45	NR	9.9
19	Iron as Fe	mg/l	0.3	1	0.04
20	Manganese as Mn	mg/l	0.1	0.3	< 0.01
21	Zinc as Zn	mg/l	5	15	<0.01
22	Copper as Cu	mg/l	0.05	1.5	< 0.01
23	Aluminium as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

Note: NTU – Nephelometric Turbidity Unit, NR – No Relaxation

For **M/s Nilawar Laboratories,**

Renuka Yadav
(Authorized Signatory)

Off. : First Floor, 'Pratibha Sankul', Beside Alankar Cinema, Dharampeth, Nagpur - 10. Ph. : +91-712-2542261, 2542291. E-mail : nilawarlabs@gmail.com
Laboratory : At Km 16.5, Nilawar Motors Complex, Amravati Road, Waddhamna, Nagpur - 440 023. Mob. : +91-9922409055, 9552550955

Nilawar Laboratories
A Unit of MNEC Consultants Pvt. Ltd)

ISO 17025:2017
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
NABL ACCREDITED LAB

CIN No. U74140MH112009PTC196108

Report No.: GE-Nilawar/EMS/2022/Feb/45 | Report Date: 21/02/2022

Name & Address of the Customer: **M/s. Ambuja Cements Limited [Unit-Bhatpara],**
Address: Village-Rawan, Tehsil-Baloda Bazar, Dist. Bhatapara (C.G.)

Sample Description	: Ground Water Sample	Sampling Location: **Bore well water at Khairtal Village**	
Sampling Ref Method	: IS :3025	Sample Reference: GE-NW/Feb/49/GW-5	
Sampled by	: GYAN Enviro Representative	Date of Analysis started	: 17.02.2022
Sampling Date	: 15.02.2022	Date of Analysis completed:	21.02.2022
Sample Receipt Date	: 16.02.2022	Testing Period	: 5 Days

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-5
1	Color	Hazen	5	25	1
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	0.34
5	Total Dissolved Solids	mg/l	500	2000	204
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.8
7	Dissolved Oxygen (DO)	mg/l	-	-	5.1
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8
10	Conductivity	$\mu S/cm^{-1}$	-	-	309
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	137
12	Total Hardness as $CaCO_3$	mg/l	300	600	181
13	Calcium as Ca^{++}	mg/l	75	200	43
14	Magnesium as Mg^{++}	mg/l	30	100	17
15	Chlorides as Cl	mg/l	250	1000	37.8
16	Sulphates as SO_4	mg/l	200	400	29.1
17	Fluoride as F	mg/l	1	1.5	0.11
18	Nitrates as NO_3	mg/l	45	NR	6.8
19	Iron as Fe	mg/l	0.3	1	0.01
20	Manganese as Mn	mg/l	0.1	0.3	< 0.01
21	Zinc as Zn	mg/l	5	15	<0.01
22	Copper as Cu	mg/l	0.05	1.5	< 0.01
23	Aluminium as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

Note: NTU – Nephelometric Turbidity Unit, NR – No Relaxation

For **M/s Nilawar Laboratories,**

Renuka Yadav
(Authorized Signatory)

Off. : First Floor, 'Pratibha Sankul', Beside Alankar Cinema, Dharampeth, Nagpur - 10. Ph. : +91-712-2542261, 2542291. E-mail : nilawarlabs@gmail.com
Laboratory : At Km 16.5, Nilawar Motors Complex, Amravati Road, Waddhamna, Nagpur - 440 023. Mob. : +91-9922409055, 9552550955

2.6 GROUND WATER LEVELS:

Ground water level is not static. It is always under the influence of time- dependent recharge and discharge factors. As a result, the water level in the aquifer system fluctuates and the range depends on the period of influence. The recharge is due to many factors such as rainfall, seepage from reservoirs, lakes, ponds, rivers and irrigation, etc. The discharge includes ground water withdrawal through manual and pumping systems, natural seepage to rivers and sea, evaporation from shallow water table and transpiration through vegetation. The monitoring database on water levels and chemical parameters helps to simulate models of forecasting, planning and management of ground water resources.

M/s Ambuja Cement Ltd, Bhatapara
Hydrological Data for the Quarter ending Feb -2022

S.N	Name of Village	Sample Code	Date of Measurement	Internal Diameter in MTR	Total depth from measuring Point inMtr (mpmp)	Static water level from measuring point in mtr (Level in mbmp)	Measuring point i.e. MP distance above ground level (magl)	Water level below ground level in Mtr mbgl = mbmp-magl
1	Rawan Vilalge	GWL-1	15-02-2022	0.152	184.34	6.70	0.45	6.25
2	Maldi Village	GWL-2	15-02-2022	0.152	176.2	8.79	0.47	8.32
3	Arjuni Village	GWL-3	15-02-2022	0.152	85.3	8.40	0.71	7.69
4	Bhadrapalli Village	GWL-4	15-02-2022	0.152	45.72	6.60	0.58	6.02
5	Khairtal Village	GWL-5	15-02-2022	0.152	78.02	8.89	0.67	8.22
6	Dhandani Village	GWL-6	15-02-2022	0.152	91.44	8.91	0.72	8.19
7	Kurkurdi Village	GWL-7	15-02-2022	0.152	128.02	9.02	0.48	8.54
8	Chhuiha Village	GWL-8	15-02-2022	0.152	71.63	6.80	0.75	6.05
9	Bharseli Village	GWL-9	15-02-2022	0.152	77.7	7.40	0.66	6.74
10	Karmandi Village	GWL-10	15-02-2022	0.152	121.92	7.20	0.5	6.70

2.3 OBSERVATIONS

The characteristics of ground water samples and surface water sample are presented in **Table – 2.1, 2.2, 2.3, 2.4 and 2.5.**

Table 2.1: GW-1 Ground Water Quality – Date of sampling – 19.05.2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-1
1	Color	Hazen	5	25	1.5
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	2.4
5	Total Dissolved Solids	mg/l	500	2000	579
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.35
7	Dissolved Oxygen (DO)	mg/l	-	-	4.4
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	12.0
10	Conductivity	µS/cm^{-1}	-	-	877
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	160
12	Total Hardness as $CaCO_3$	mg/l	300	600	480
13	Calcium as Ca^{++}	mg/l	75	200	115
14	Magnesium as Mg^{++}	mg/l	30	100	46
15	Chlorides as Cl	mg/l	250	1000	152
16	Sulphates as SO_4	mg/l	200	400	42.3
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	BDL
19	Iron as Fe	mg/l	0.3	1	0.097
20	Manganese as Mn	mg/l	0.1	0.3	0.043
21	Zinc as Zn	mg/l	5	15	0.214
22	Copper as Cu	mg/l	0.05	1.5	0.078
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	<3.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-1 : Bore well at Karmada Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.2: GW-2- Ground Water Quality – Date of sampling – 19.05.2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-2
1	Color	Hazen	5	25	1.0
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	1.4
5	Total Dissolved Solids	mg/l	500	2000	564
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.28
7	Dissolved Oxygen (DO)	mg/l	-	-	4.6
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	12.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	855
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	195
12	Total Hardness as $CaCO_3$	mg/l	300	600	328
13	Calcium as Ca^{++}	mg/l	75	200	79
14	Magnesium as Mg^{++}	mg/l	30	100	31.5
15	Chlorides as Cl	mg/l	250	1000	157
16	Sulphates as SO_4	mg/l	200	400	75
17	Fluoride as F	mg/l	1	1.5	0.098
18	Nitrates as NO_3	mg/l	45	NR	4.5
19	Iron as Fe	mg/l	0.3	1	0.107
20	Manganese as Mn	mg/l	0.1	0.3	0.034
21	Zinc as Zn	mg/l	5	15	0.213
22	Copper as Cu	mg/l	0.05	1.5	0.053
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-2 : Bore well water at Pausari Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.3: GW-3- Ground Water Quality – Date of sampling – 19.05.2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-3
1	Color	Hazen	5	25	1.3
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	4.1
5	Total Dissolved Solids	mg/l	500	2000	265
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.42
7	Dissolved Oxygen (DO)	mg/l	-	-	3.9
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	16.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	401
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	65
12	Total Hardness as $CaCO_3$	mg/l	300	600	240
13	Calcium as Ca^{++}	mg/l	75	200	58
14	Magnesium as Mg^{++}	mg/l	30	100	23
15	Chlorides as Cl	mg/l	250	1000	29
16	Sulphates as SO_4	mg/l	200	400	22
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	BDL
19	Iron as Fe	mg/l	0.3	1	0.064
20	Manganese as Mn	mg/l	0.1	0.3	<0.01
21	Zinc as Zn	mg/l	5	15	0.036
22	Copper as Cu	mg/l	0.05	1.5	0.066
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-3: Bore Well at Baloda bazar

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.3: GW 4- Ground Water Quality – Date of sampling – 19.05.2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-4
1	Color	Hazen	5	25	1.2
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	3.8
5	Total Dissolved Solids	mg/l	500	2000	279
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.25
7	Dissolved Oxygen (DO)	mg/l	-	-	4.1
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	12.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	423
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	90
12	Total Hardness as $CaCO_3$	mg/l	300	600	264
13	Calcium as Ca^{++}	mg/l	75	200	64
14	Magnesium as Mg^{++}	mg/l	30	100	25
15	Chlorides as Cl	mg/l	250	1000	39
16	Sulphates as SO_4	mg/l	200	400	27
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	1.04
19	Iron as Fe	mg/l	0.3	1	0.065
20	Manganese as Mn	mg/l	0.1	0.3	<0.01
21	Zinc as Zn	mg/l	5	15	0.322
22	Copper as Cu	mg/l	0.05	1.5	0.039
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-4: Bore well water at Mopar Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.5: GW-5- Ground Water Quality – Date of sampling – 19.05.2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-5
1	Color	Hazen	5	25	1.6
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	2.7
5	Total Dissolved Solids	mg/l	500	2000	430
6	pH at 25 ^{0}C	–	6.5 – 8.5	NR	7.38
7	Dissolved Oxygen (DO)	mg/l	-	-	4.6
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	12.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	652
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	145
12	Total Hardness as $CaCO_3$	mg/l	300	600	346
13	Calcium as Ca^{++}	mg/l	75	200	83
14	Magnesium as Mg^{++}	mg/l	30	100	33
15	Chlorides as Cl	mg/l	250	1000	95
16	Sulphates as SO_4	mg/l	200	400	40
17	Fluoride as F	mg/l	1	1.5	0.145
18	Nitrates as NO_3	mg/l	45	NR	0.74
19	Iron as Fe	mg/l	0.3	1	0.109
20	Manganese as Mn	mg/l	0.1	0.3	0.023
21	Zinc as Zn	mg/l	5	15	0.175
22	Copper as Cu	mg/l	0.05	1.5	0.056
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	Absent
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-5: Bore well water at Devrani Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

2.6 GROUND WATER LEVELS:

Ground water level is not static. It is always under the influence of time- dependent recharge and discharge factors. As a result, the water level in the aquifer system fluctuates and the range depends on the period of influence. The recharge is due to many factors such as rainfall, seepage from reservoirs, lakes, ponds, rivers and irrigation, etc. The discharge includes ground water withdrawal through manual and pumping systems, natural seepage to rivers and sea, evaporation from shallow water table and transpiration through vegetation. The monitoring database on water levels and chemical parameters helps to simulate models of forecasting, planning and management of ground water resources.

M/s Ambuja Cement Ltd,
Bhatapara
Hydrological Data for the Quarter ending

S. N	Name of Village	Sample Code	Date of Measurement	Internal Diameter in MTR	Total depth from measuring Point in Mtr (mpmp)	Static water level from measuring point in mtr (Level in mbmp)	Measuring point i.e. MP distance above ground level (magl)	Water level below ground level in Mtr mbgl = mbmp-magl
1	Rawan Vilalge	GWL-1	18-05-2022	0.152	76.2	6.34	0.45	5.89
2	Maldi Village	GWL-2	18-05-2022	0.152	121.9	8.45	0.47	7.98
3	Arjuni Village	GWL-3	18-05-2022	0.152	85.3	7.12	0.71	6.41
4	Latua Village	GWL-4	18-05-2022	0.152	91.4	5.67	0.58	5.09
5	Dhabadih Village	GWL-5	18-05-2022	0.152	65.2	7.34	0.67	6.67
6	Magarchaba Village	GWL-6	18-05-2022	0.152	91.4	9.10	0.72	8.38
7	Kurkurdi Village	GWL-7	18-05-2022	0.152	73.2	7.05	0.48	6.57
8	Chhuiha Village	GWL-8	18-05-2022	0.152	66.7	5.86	0.75	5.11
9	Amera Village	GWL-9	18-05-2022	0.152	76.2	5.23	0.66	4.57
10	Risda Vilalge	GWL-10	18-05-2022	0.152	97.5	6.72	0.47	6.25
11	Champa Village	GWL-11	18-05-2022	0.152	67.1	5.26	0.55	4.71
12	Semradih Village	GWL-12	18-05-2022	0.152	85.3	6.90	0.51	6.39
13	Chandih Village	GWL-13	19-05-2022	0.152	112.8	7.58	0.45	7.13
14	Khelwari Village	GWL-14	19-05-2022	0.152	125.0	5.75	0.48	5.27
15	Khamariya Village	GWL-15	19-05-2022	0.152	57.9	6.07	0.55	5.52
16	Topa Village	GWL-16	19-05-2022	0.152	73.2	6.88	0.59	6.29
17	Devrani Village	GWL-17	19-05-2022	0.152	128.0	6.01	0.6	5.41
18	Karmada Village	GWL-18	19-05-2022	0.152	115.8	6.45	0.62	5.83
19	Mopar Village	GWL-19	19-05-2022	0.152	91.4	5.96	0.47	5.49
20	Pausari Village	GWL-20	19-05-2022	0.152	97.5	6.25	0.52	5.73
21	Baloda bazar	GWL-21	19-05-2022	0.152	57.9	6.42	0.54	5.88

2.3 OBSERVATIONS

The characteristics of ground water samples and surface water sample are presented in **Table – 2.1, 2.2, 2.3, 2.4 and 2.5.**

Table 2.1: GW-1 Ground Water Quality – Date of sampling – 03/09/2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-1
1	Color	Hazen	5	25	1.5
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	3.4
5	Total Dissolved Solids	mg/l	500	2000	525.0
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.48
7	Dissolved Oxygen (DO)	mg/l	-	-	3.9
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	795
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	138
12	Total Hardness as $CaCO_3$	mg/l	300	600	414
13	Calcium as Ca^{++}	mg/l	75	200	99.4
14	Magnesium as Mg^{++}	mg/l	30	100	39.8
15	Chlorides as Cl	mg/l	250	1000	136
16	Sulphates as SO_4	mg/l	200	400	40.4
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	BDL
19	Iron as Fe	mg/l	0.3	1	0.084
20	Manganese as Mn	mg/l	0.1	0.3	0.040
21	Zinc as Zn	mg/l	5	15	0.115
22	Copper as Cu	mg/l	0.05	1.5	0.064
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	3.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-1 : Bore well at Karmada Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.2: GW-2- Ground Water Quality – Date of sampling – 03/09/2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-2
1	Color	Hazen	5	25	1.0
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	2.8
5	Total Dissolved Solids	mg/l	500	2000	507
6	pH at 25 °C	--	6.5 – 8.5	NR	7.33
7	Dissolved Oxygen (DO)	mg/l	-	-	4.0
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	829
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	144
12	Total Hardness as $CaCO_3$	mg/l	300	600	306
13	Calcium as Ca^{++}	mg/l	75	200	73.4
14	Magnesium as Mg^{++}	mg/l	30	100	29.4
15	Chlorides as Cl	mg/l	250	1000	132
16	Sulphates as SO_4	mg/l	200	400	66
17	Fluoride as F	mg/l	1	1.5	0.083
18	Nitrates as NO_3	mg/l	45	NR	3.4
19	Iron as Fe	mg/l	0.3	1	0.112
20	Manganese as Mn	mg/l	0.1	0.3	0.045
21	Zinc as Zn	mg/l	5	15	0.024
22	Copper as Cu	mg/l	0.05	1.5	0.031
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	6.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-2 : Bore well water at Pausari Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.3: GW-3- Ground Water Quality – Date of sampling – 03/09/2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-3
1	Color	Hazen	5	25	1.0
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	4.4
5	Total Dissolved Solids	mg/l	500	2000	248
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.25
7	Dissolved Oxygen (DO)	mg/l	-	-	3.5
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	12.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	370.0
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	58.0
12	Total Hardness as $CaCO_3$	mg/l	300	600	204.0
13	Calcium as Ca^{++}	mg/l	75	200	48.8
14	Magnesium as Mg^{++}	mg/l	30	100	19.7
15	Chlorides as Cl	mg/l	250	1000	22.1
16	Sulphates as SO_4	mg/l	200	400	18.8
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	BDL
19	Iron as Fe	mg/l	0.3	1	0.047
20	Manganese as Mn	mg/l	0.1	0.3	<0.01
21	Zinc as Zn	mg/l	5	15	0.034
22	Copper as Cu	mg/l	0.05	1.5	0.072
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	3.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-3: Bore Well at Baloda bazar

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.3: GW 4- Ground Water Quality – Date of sampling – 03/09/2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-4
1	Color	Hazen	5	25	1.0
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	4.0
5	Total Dissolved Solids	mg/l	500	2000	265
6	pH at 25 ^{0}C	--	6.5 – 8.5	NR	7.40
7	Dissolved Oxygen (DO)	mg/l	-	-	3.6
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	402
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	76.0
12	Total Hardness as $CaCO_3$	mg/l	300	600	243
13	Calcium as Ca^{++}	mg/l	75	200	58.3
14	Magnesium as Mg^{++}	mg/l	30	100	23.3
15	Chlorides as Cl	mg/l	250	1000	32.4
16	Sulphates as SO_4	mg/l	200	400	24.7
17	Fluoride as F	mg/l	1	1.5	BDL
18	Nitrates as NO_3	mg/l	45	NR	1.55
19	Iron as Fe	mg/l	0.3	1	0.044
20	Manganese as Mn	mg/l	0.1	0.3	<0.01
21	Zinc as Zn	mg/l	5	15	0.0201
22	Copper as Cu	mg/l	0.05	1.5	0.0027
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	6.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-4: Bore well water at Mopar Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

Table 2.5: GW-5- Ground Water Quality – Date of sampling – 03/09/2022

S. N	Parameters	Unit	As per IS 10500:1991		Values
			Desirable	Permissible	GW-5
1	Color	Hazen	5	25	1.5
2	Odour	AG	AG	AG	AG
3	Taste	AG	AG	AG	AG
4	Turbidity	NTU	5	10	3.4
5	Total Dissolved Solids	mg/l	500	2000	404
6	pH at 25 °C	--	6.5 – 8.5	NR	7.22
7	Dissolved Oxygen (DO)	mg/l	-	-	4.0
8	Biochemical Oxygen Demand	mg/l	-	-	<3.0
9	Chemical Oxygen Demand	mg/l	-	-	8.0
10	Conductivity	$\mu S/cm^{-1}$	-	-	612
11	Total Alkalinity as $CaCO_3$	mg/l	200	600	124
12	Total Hardness as $CaCO_3$	mg/l	300	600	317
13	Calcium as Ca^{++}	mg/l	75	200	76.1
14	Magnesium as Mg^{++}	mg/l	30	100	30.5
15	Chlorides as Cl	mg/l	250	1000	84
16	Sulphates as SO_4	mg/l	200	400	32
17	Fluoride as F	mg/l	1	1.5	0.098
18	Nitrates as NO_3	mg/l	45	NR	0.90
19	Iron as Fe	mg/l	0.3	1	0.084
20	Manganese as Mn	mg/l	0.1	0.3	0.021
21	Zinc as Zn	mg/l	5	15	0.065
22	Copper as Cu	mg/l	0.05	1.5	0.042
23	Aluminum as Al	mg/l	0.03	0.2	< 0.01
24	Boron as B	mg/l	1	5	< 0.01
25	Total Coliform	MPN/100 ml	Absent	NR	9.0
26	E. Coli	MPN/100 ml	Absent	NR	Absent
B. Toxic Substance					
27	Cadmium & its Compounds as Cd	mg/l	0.01	NR	< 0.005
28	Arsenic & its Compounds as As	mg/l	0.01	NR	< 0.005
29	Lead & its Compounds as Pb	mg/l	0.05	NR	< 0.001
30	Chromium & its compound as Cr	mg/l	0.05	NR	<0.01
31	Mercury as Hg	mg/l	0.001	NR	BDL

GW-5: Bore well water at Devrani Village

Note: UO – unobjectionable; AG – agreeable; NR – no relaxation; BDL – below detectable limit; MPN – most probable number

2.6 GROUND WATER LEVELS:

Ground water level is not static. It is always under the influence of time- dependent recharge and discharge factors. As a result, the water level in the aquifer system fluctuates and the range depends on the period of influence. The recharge is due to many factors such as rainfall, seepage from reservoirs, lakes, ponds, rivers and irrigation, etc. The discharge includes ground water withdrawal through manual and pumping systems, natural seepage to rivers and sea, evaporation from shallow water table and transpiration through vegetation. The monitoring database on water levels and chemical parameters helps to simulate models of forecasting, planning and management of ground water resources.

M/s Ambuja Cement Ltd, Bhatapara
Hydrological Data for the Quarter ending

S.N	Name of Village	Sample Code	Date of Measurement	Internal Diameter in MTR	Total depth from measuring Point in Mtr (mpmp)	Static water level from measuring point in mtr (Level in mbmp)	Measuring point i.e MP distance above ground level (magl)	Water level below ground level in Mtr mbgl = mbmp-magl
1	Rawan Vilalge	GWL-1	03-09-2022	0.152	78.4	1.98	0.48	1.50
2	Maldi Village	GWL-2	03-09-2022	0.152	119.4	1.95	0.45	1.50
3	Arjuni Village	GWL-3	03-09-2022	0.152	82.4	2.36	0.66	1.70
4	Latua Village	GWL-4	03-09-2022	0.152	88.5	1.55	0.55	1.00
5	Dhabadih Village	GWL-5	03-09-2022	0.152	66.8	2.51	0.61	1.90
6	Magarchaba Village	GWL-6	03-09-2022	0.152	90.5	1.19	0.69	0.50
7	Kurkurdi Village	GWL-7	03-09-2022	0.152	75.6	2.50	0.50	2.00
8	Chhuiha Village	GWL-8	03-09-2022	0.152	68.4	2.19	0.69	1.50
9	Amera Village	GWL-9	03-09-2022	0.152	74.4	2.22	0.72	1.50
10	Risda Vilalge	GWL-10	03-09-2022	0.152	90.1	1.22	0.52	0.70
11	Champa Village	GWL-11	03-09-2022	0.152	62.4	1.64	0.64	1.00
12	Semradih Village	GWL-12	03-09-2022	0.152	80.4	3.16	0.56	2.60
13	Chandih Village	GWL-13	03-09-2022	0.152	115.1	3.89	0.59	3.30
14	Khelwari Village	GWL-14	03-09-2022	0.152	119.0	1.93	0.53	1.40
15	Khamariya Village	GWL-15	03-09-2022	0.152	60.4	2.01	0.51	1.50
16	Topa Village	GWL-16	03-09-2022	0.152	70.4	1.17	0.47	0.70
17	Devrani Village	GWL-17	03-09-2022	0.152	120.4	2.85	0.55	2.30
18	Karmada Village	GWL-18	03-09-2022	0.152	112.1	3.28	0.58	2.70
19	Mopar Village	GWL-19	03-09-2022	0.152	89.7	1.85	0.45	1.40
20	Pausari Village	GWL-20	03-09-2022	0.152	95.4	2.52	0.56	1.96
21	Baloda bazar	GWL-21	03-09-2022	0.152	59.6	2.50	0.60	1.90

For M/s Nilawar Laboratories,

Renuka Yadav
(Authorized Signatory)

Annexure – VI a

Typical View of online Piezometers installed in Rawan Mine

Annexure- VII

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
भूमि जल प्राधिकरण

Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development and Ganga Rejuvenation
Central Ground Water Authority

NANDAKUMARAN P
MEMBER SECRETARY

CGWA/IND/Proj/2019-375-R

No.21-4(117)/NCCR/CGWA/2011- 762

Dated:- 05 SEP 2019

To

M/s Ambuja Cements Ltd.,
(Unit-Bhatapara),Village & P.O.- Rawan
Block & Tehsil- Balodabazar
Dist- Balodabazar: Bhatapara, Chhattisgarh - 493331

Sub: - Renewal of NOC for ground water withdrawal to M/s Ambuja Cements Ltd., for their existing Integrated cement manufacturing, captive power plant and Limestone Mine located at Villages Rawan, Kukurdih, Pausari and Bharseli, Block &Tehsil Balodabazar ,District Balodabazar:Bhatapara, Chhattisgarh - reg.

Refer to your application dated 31/10/2018 on the above cited subject. Based on recommendation of Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur vide his office letter No 35-1/NCCR/CGWA/Vol-XI- 818 dated 17/06/2019, and further deliberations on the subject, the NOC issued to **M/s Ambuja Cements Ltd., for their existing Integrated cement manufacturing, captive power plant and Limestone Mine located at Villages Rawan, Kukurdih, Pausari and Bharseli, Block &Tehsil Balodabazar ,District Balodabazar:Bhatapara, Chhattisgarh** vide this office letter of even no. dated 06/11/2015 is hereby renewed. The earlier NOC issued vide Letter No. 21-4(117)/NCCR/CGWA/2011-1739 dated 06/11/2015 shall be deemed to be extended from 05/11/2018 to 25/07/2019 and the renewed NOC shall be valid from 26/07/2019 to 25/07/2024 and shall be subject to the following conditions:-

1. The firm may continue to abstract **1,11,325 cu.m/year** of ground water through twelve (12) existing bore wells only and **18,47,225 cu.m/year** through dewatering of mine seepage on account of mining intersecting the water table during the mining operation. The total withdrawal from bore wells and dewatering shall not exceed **19,58,550 m3/year**. No additional ground water abstraction structures shall be constructed for this purpose without prior approval of the CGWA.

2. All the wells shall be fitted with digital water flow meters and monthly ground water abstraction data of each well shall be recorded in a log book by the firm.
3. **M/s Ambuja Cements Ltd.,** shall continue to implement ground water recharge measures to the tune of **5,30,188 m^3/year** for augmenting the ground water resources of the area. Firm shall also undertake periodic maintenance of recharge structures at its own cost.
4. The firm shall continue to execute monthly ground water level monitoring in the project area through two (2) nos. of existing piezometers. The firm shall install digital water level recorders in both the existing piezometers. Firm shall install telemetry system in one of the piezometers and share user ID and password of the telemetry system with the Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur.
5. The ground water quality shall be monitored once in a year during pre monsoon period.
6 The ground water monitoring data in respect of S. No. 2, 4, & 5 shall be submitted to the Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur on regular basis at least once in a year.
7. The firm shall ensure proper recycling and reuse of waste water after adequate treatment.
8. The firm shall submit report on impact of ground water abstraction on the ambient ground water regime within six months of the renewal of NOC.
9. Action taken report in respect of S.N o. 1 to 8 shall be submitted to CGWA within one year period.
10. The NOC is liable to be cancelled in case of non-compliance of any of the conditions as mentioned in S. No. 1 to 9.
11. The project proponent shall take all necessary measures to prevent contamination of groundwater in the premises failing which the firm shall be responsible for any consequences arising there upon.
12. This NOC is subject to prevailing Central/State Government rules/laws or Court orders related to construction of tubewell/ground water withdrawal/construction of recharge or conservation structures/discharge of effluents or any such matter as applicable.
13. This NOC does not absolve the applicant / proponent of his obligation / requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
14. The NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and be taking decisions independently of the NOC.

Member (CGWA)

Copy to:

1. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Naya Raipur, Chhattisgarh.
2. The District Collector & Magistrate, District Balodabazar, Chhattisgarh for necessary action.
3. The Director, Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003
4. The Regional Director, Central Ground Water Board, North Central Chhattisgarh Region, Raipur. This has reference to your recommendation dated 17/06/2019.
5. Guard File 2019-20.

Member (CGWA)

Annexure VIII

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO	UES/TR/22-23/03625	
	LAB REF NO	UES/22-23/AAQM/09047-09054	
	DATE OF SAMPLING	01/09/2022 to 26/09/2022	
	DATE OF RECEIPT	02/09/2022 to 27/09/2022	
	DATE OF REPORT	01/10/2022	
	DATE OF ANALYSIS	START: 03/09/2022	END: 01/10/2022

SAMPLE DETAILS

MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	2800900967/NE08 Date: 07/06/2022
SAMPLING LOCATION	CORE ZONE		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM_{10}): 1X1 NO., FILTER PAPER ($PM_{2.5}$): 1X1 NO. SO_2: 30MLX1 NO. PVC BOTTLE, NO_2: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS 5182 (Part 24): 2019, CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO_2)	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO_2)	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0

Sampling Location	Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO* mg/m³
MALDI MINES (ROOF TOP OF THE FIELD OFFICE)	01.09.2022	54.6	20.8	16.8	28.5	0.28
	05.09.2022	62.2	26.6	12.2	22.2	0.22
	08.09.2022	50.6	22.2	14.6	26.8	0.26
	12.09.2022	64.4	22.4	9.8	22.0	0.22
	16.09.2022	46.8	28.8	16.4	28.6	0.10
	19.09.2022	52.2	24.2	10.2	30.2	0.24
	23.09.2022	58.5	22.6	14.6	22.8	0.16
	26.09.2022	60.7	26.8	12.4	24.4	0.22

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

01/10/22 REVIEWED BY		For ULTIMATE ENVIROLYTICAL SOLUTIONS 01/10/22 AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO	UES/TR/22-23/03624	
	LAB REF NO	UES/22-23/AAQM/09039-09046	
	DATE OF SAMPLING	01/09/2022 to 26/09/2022	
	DATE OF RECEIPT	02/09/2022 to 27/09/2022	
	DATE OF REPORT	01/10/2022	
	DATE OF ANALYSIS	START: 03/09/2022	END: 01/10/2022

SAMPLE DETAILS

MONITORING FOR	AMBIENT AIR QUALITY MONITORING	CUSTOMER REF. NO. & DATE	2800900967/NE08 Date: 07/06/2022
SAMPLING LOCATION	CORE ZONE		
DURATION OF SAMPLING	24 HOURS	SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	AS PER METHOD REFERENCE		
SAMPLE QUANTITY/PACKING	FILTER PAPER (PM_{10}): 1X1 NO., FILTER PAPER ($PM_{2.5}$): 1X1 NO. SO_2: 30MLX1 NO. PVC BOTTLE, NO_2: 30MLX1 NO. PVC BOTTLE RUBBER BLADDER: 1X1 NO.		

Test Method and NAAQM Standard for Ambient Air Quality Monitoring

Parameter	Method Reference	NAAQM Standard
Particulate Matter size less than 10 microns (PM_{10})	IS 5182 (Part 23): 2006 & CPCB Guidelines Vol.-I	100
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	IS 5182 (Part 24): 2019 CPCB Guidelines Vol.-I	60
Sulphur Dioxide (SO_2)	IS 5182 (Part 2): 2001, RA 2006 & CPCB Guidelines Vol.-I	80
Nitrogen Dioxide (NO_2)	IS 5182 (Part 6): 2006 & CPCB Guidelines Vol.-I	80
Carbon Monoxide (CO)*	IS 5182(Part 10):1999, RA 2003	4.0

Sampling Location	Date of Sampling	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO* mg/m³
RAWAN MINES (NEAR WORK SHOP)	01.09.2022	68.5	26.2	10.5	24.6	0.27
	05.09.2022	60.2	22.6	14.2	28.2	0.36
	08.09.2022	42.9	26.0	12.8	22.8	0.22
	12.09.2022	52.5	28.4	18.4	26.4	0.28
	16.09.2022	56.2	20.8	10.6	24.6	0.24
	19.09.2022	42.6	24.2	12.2	20.2	0.12
	23.09.2022	50.8	26.6	8.8	22.4	0.26
	26.09.2022	60.2	30.2	10.6	28.2	0.30

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

01/10/22

REVIEWED BY

01/10/22

AUTHORIZED SIGNATORY

----------*End of the test report*----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO.	UES/TR/22-23/03639
	LAB REF NO.	UES/22-23/AAQM/09074-09077
	DATE OF SAMPLING	07/09/2022
	DATE OF RECEIPT	08/09/2022
	DATE OF REPORT	12/09/2022
	DATE OF ANALYSIS	START: 08/09/2022 END: 12/09/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08,Date 07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle, NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Devrani Village	Karmandi Village	Mopar Village	Maldi Village
Particulate Matter size less than 10 microns (PM_{10})	$\mu g/m^3$	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	58.8	62.8	55.4	64.8
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	$\mu g/m^3$	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	26.4	22.2	28.4	20.2
Sulphur Dioxide (SO_2)	$\mu g/m^3$	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	18.4	12.2	10.8	9.4
Nitrogen Dioxide (NO_2)	$\mu g/m^3$	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	26.4	20.4	28.5	26.2
Carbon Monoxide (CO)	mg/m^3	4.0	IS 5182(Part 10):1999, RA 2003	0.16	0.12	0.18	0.11
Ozone (O_3)	$\mu g/m^3$	180	CPCB Guidelines Vol-I	9.6	8.4	12.4	8.2
Ammonia (NH_3)	$\mu g/m^3$	400	CPCB Guidelines Vol-I	26.4	22.8	20.8	22.4
Arsenic (As)	ng/m^3	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m^3	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	$\mu g/m^3$	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	$\mu g/m^3$	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a)Pyrene	ng/m^3	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for publication, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.
- This is for information as the party has asked for above test(s) only.

12/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
12/09/22
AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO.	UES/TR/22-23/03640	
	LAB REF NO.	UES/22-23/AAQM/09078-09081	
	DATE OF SAMPLING	15/09/2022	
	DATE OF RECEIPT	16/09/2022	
	DATE OF REPORT	22/09/2022	
	DATE OF ANALYSIS	START:16/09/2022	END:22/09/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08, Date:07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CHARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle, NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Parsadi Village	Mudhipar Village	Kairatal Village	Bhadrapali Village
Particulate Matter size less than 10 microns (PM_{10})	$\mu g/m^3$	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	68.2	58.5	50.4	62.8
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	$\mu g/m^3$	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	28.4	22.8	26.4	20.8
Sulphur Dioxide (SO_2)	$\mu g/m^3$	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	10.8	16.4	9.8	14.4
Nitrogen Dioxide (NO_2)	$\mu g/m^3$	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	22.4	20.2	28.4	26.4
Carbon Monoxide (CO)	mg/m^3	4.0	IS 5182(Part 10):1999, RA 2003	0.16	0.18	0.22	0.28
Ozone (O_3)	$\mu g/m^3$	180	CPCB Guidelines Vol-I	20.5	16.4	10.8	18.4
Ammonia (NH_3)	$\mu g/m^3$	400	CPCB Guidelines Vol-I	28.6	20.8	26.4	28.2
Arsenic (As)	ng/m^3	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m^3	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	$\mu g/m^3$	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	$\mu g/m^3$	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a)Pyrene	ng/m^3	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for publication, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.
- This is for information as the party has asked for above test(s) only.

22/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
22/09/22
AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO.	UES/TR/22-23/03641	
	LAB REF NO.	UES/22-23/AAQM/09082-09085	
	DATE OF SAMPLING	24/09/2022	
	DATE OF RECEIPT	25/09/2022	
	DATE OF REPORT	29/09/2022	
	DATE OF ANALYSIS	START: 25/09/2022	END: 29/09/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08, Date: 07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CHARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle, NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Arjuni Village	Rawan Village	Pausari Village	Bharseli Village
Particulate Matter size less than 10 microns (PM_{10})	$\mu g/m^3$	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	62.6	54.2	60.4	52.6
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	$\mu g/m^3$	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	28.4	22.8	24.2	26.8
Sulphur Dioxide (SO_2)	$\mu g/m^3$	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	12.8	10.2	14.2	16.6
Nitrogen Dioxide (NO_2)	$\mu g/m^3$	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	26.4	22.8	20.4	28.6
Carbon Monoxide (CO)	mg/m^3	4.0	IS 5182(Part 10):1999, RA 2003	0.18	0.14	0.22	0.24
Ozone (O_3)	$\mu g/m^3$	180	CPCB Guidelines Vol-I	12.8	9.8	10.8	14.8
Ammonia (NH_3)	$\mu g/m^3$	400	CPCB Guidelines Vol-I	26.4	20.8	28.4	22.8
Arsenic (As)	ng/m^3	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m^3	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	$\mu g/m^3$	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	$\mu g/m^3$	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a)Pyrene	ng/m^3	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The use of the report for publication, arbitration or as the legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.*
- *This is for information as the party has asked for above test(s) only.*

29/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
29/09/22
AUTHORIZED SIGNATORY

----------*End of the test report*----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Name & Address Of The Customer		
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO.	UES/TR/22-23/02686
	LAB REF NO.	UES/22-23/AAQM/07543-07546
	DATE OF SAMPLING	11/08/2022
	DATE OF RECEIPT	12/08/2022
	DATE OF REPORT	18/08/2022
	DATE OF ANALYSIS	START:13/08/2022 | END:18/08/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08, Date: 07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CHARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle. NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Arjuni Village	Rawan Village	Pausari Village	Bharseli Village
Particulate Matter size less than 10 microns (PM_{10})	µg/m³	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	68.4	58.2	62.8	54.8
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	µg/m³	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	26.2	28.4	20.2	24.8
Sulphur Dioxide (SO_2)	µg/m³	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	10.4	16.4	12.8	14.8
Nitrogen Dioxide (NO_2)	µg/m³	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	20.8	28.4	26.4	20.8
Carbon Monoxide (CO)	mg/m³	4.0	IS 5182(Part 10):1999, RA 2003	0.12	0.18	0.26	0.22
Ozone (O_3)	µg/m³	180	CPCB Guidelines Vol-I	9.4	8.8	12.6	16.2
Ammonia (NH_3)	µg/m³	400	CPCB Guidelines Vol-I	22.8	26.2	24.8	20.6
Arsenic (As)	ng/m³	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m³	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	µg/m³	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	µg/m³	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a)Pyrene	ng/m³	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for publication, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.
- This is for information to the party has asked for above test(s) only.

18/08/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS

18/08/22
AUTHORIZED SIGNATORY

----------End of the test report----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		
TO, AMBUJA CEMENT LIMITED (UNIT: BHATAPARA) P.O. Rawan, Tehsil: Baloda Bazar, Dist: Baloda Bazar-Bhatapara-493331	REPORT NO.	UES/TR/22-23/03639
	LAB REF NO.	UES/22-23/AAQM/09074-09077
	DATE OF SAMPLING	07/09/2022
	DATE OF RECEIPT	08/09/2022
	DATE OF REPORT	12/09/2022
	DATE OF ANALYSIS	START: 08/09/2022 END: 12/09/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08, Date 07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle, NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Devrani Village	Karmandi Village	Mopar Village	Maldi Village
Particulate Matter size less than 10 microns (PM_{10})	$\mu g/m^3$	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	58.8	62.8	55.4	64.8
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	$\mu g/m^3$	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	26.4	22.2	28.4	20.2
Sulphur Dioxide (SO_2)	$\mu g/m^3$	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	18.4	12.2	10.8	9.4
Nitrogen Dioxide (NO_2)	$\mu g/m^3$	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	26.4	20.4	28.5	26.2
Carbon Monoxide (CO)	mg/m^3	4.0	IS 5182(Part 10):1999, RA 2003	0.16	0.12	0.18	0.11
Ozone (O_3)	$\mu g/m^3$	180	CPCB Guidelines Vol-I	9.6	8.4	12.4	8.2
Ammonia (NH_3)	$\mu g/m^3$	400	CPCB Guidelines Vol-I	26.4	22.8	20.8	22.4
Arsenic (As)	ng/m^3	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m^3	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	$\mu g/m^3$	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	$\mu g/m^3$	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a)Pyrene	ng/m^3	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for public action, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless specified with the customer
- This is for information as the party has asked for above tests only

12/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
12/09/22
AUTHORIZED SIGNATORY

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer		
TO, AMBUJA CEMENT LIMITED (UNIT: BHATAPARA) P.O. Rawan, Tehsil: Baloda Bazar, Dist: Baloda Bazar-Bhatapara-493331	REPORT NO.	UES/TR/22-23/03640
	LAB REF NO.	UES/22-23/AAQM/09078-09081
	DATE OF SAMPLING	15/09/2022
	DATE OF RECEIPT	16/09/2022
	DATE OF REPORT	22/09/2022
	DATE OF ANALYSIS	START:16/09/2022 END:22/09/2022

SAMPLE DETAILS

Monitoring For	Ambient Air Quality Monitoring
Sampling Location	Buffer Zone
Customer Ref. No. & Date	2800900967/NE08, Date:07/06/2022
Duration Of Sampling	As per CPCB norms
Sample Collected by	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CHARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle, NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Parsadi Village	Mudhipar Village	Kairatal Village	Bhadrapali Village
Particulate Matter size less than 10 microns (PM_{10})	µg/m³	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	68.2	58.5	50.4	62.8
Particulate Matter size less than 2.5 microns ($PM_{2.5}$)	µg/m³	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	28.4	22.8	26.4	20.8
Sulphur Dioxide (SO_2)	µg/m³	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	10.8	16.4	9.8	14.4
Nitrogen Dioxide (NO_2)	µg/m³	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	22.4	20.2	28.4	26.4
Carbon Monoxide (CO)	mg/m³	4.0	IS 5182(Part 10):1999, RA 2003	0.16	0.18	0.22	0.28
Ozone (O_3)	µg/m³	180	CPCB Guidelines Vol-I	20.5	16.4	10.8	18.4
Ammonia (NH_3)	µg/m³	400	CPCB Guidelines Vol-I	28.6	20.8	26.4	28.2
Arsenic (As)	ng/m³	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Nickel (Ni)	ng/m³	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Lead (Pb)	µg/m³	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
Benzene (C_6H_6)	µg/m³	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
Benzo(a) Pyrene	ng/m³	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for publication, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.
- This is for information as the party has asked for above test(s) only.

22/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS

22/09/22
AUTHORIZED SIGNATORY

End of the test report

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

ame & Address Of The Customer			
O, MBUJA CEMENT LIMITED UNIT: BHATAPARA) .O. Rawan, Tehsil: Baloda Bazar, list: Baloda Bazar-Bhatapara-493331	REPORT NO.	UES/TR/22-23/03641	
	LAB REF NO.	UES/22-23/AAQM/09082-09085	
	DATE OF SAMPLING	24/09/2022	
	DATE OF RECEIPT	25/09/2022	
	DATE OF REPORT	29/09/2022	
	DATE OF ANALYSIS	START: 25/09/2022	END: 29/09/2022

SAMPLE DETAILS

onitoring For	Ambient Air Quality Monitoring
ampling Location	Buffer Zone
ustomer Ref. No. & Date	2800900967/NE08, Date: 07/06/2022
uration Of Sampling	As per CPCB norms
ample Collected by	Laboratory Chemist
ampling Procedure	As Per Method Reference
ample Quantity/Packing	Filter Paper (PM10): 1X1 No., Filter Paper (PM2.5): 1X1 No. SO2: 30mlX1 No. PVC Bottle, NO2: 30mlX1 No. PVC BOTTLE, Rubber Bladder: 1X1 No., C6H6: CHARCOAL Tube. OZONE: 10MLX1 No. Brown PVC Bottle. NH4:10MLX1 No. Brown PVC Bottle

TEST REPORT

Parameter	Unit	NAAQM Standard	METHOD REFERENCE	Arjuni Village	Rawan Village	Pausari Village	Bharseli Village
articulate latter size less han 10 microns PM_{10})	µg/m³	100	IS 5182(Part 23):2006 & CPCB Guidelines Vol.-I	62.6	54.2	60.4	52.6
articulate latter size less han 2.5 microns $PM_{2.5}$)	µg/m³	60	IS 5182(Part 24):2019 & CPCB Guidelines Vol.-I	28.4	22.8	24.2	26.8
ulphur Dioxide SO_2)	µg/m³	80	IS 5182(Part 2):2001, RA 2006 &CPCB Guidelines Vol.-I	12.8	10.2	14.2	16.6
itrogen Dioxide NO_2)	µg/m³	80	IS 5182(Part 6): 2006 & CPCB Guidelines Vol.-I	26.4	22.8	20.4	28.6
arbon Monoxide CO)	mg/m³	4.0	IS 5182(Part 10):1999, RA 2003	0.18	0.14	0.22	0.24
zone (O_3)	µg/m³	180	CPCB Guidelines Vol-I	12.8	9.8	10.8	14.8
mmonia (NH_3)	µg/m³	400	CPCB Guidelines Vol-I	26.4	20.8	28.4	22.8
rsenic (As)	ng/m³	6.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
ickel (Ni)	ng/m³	20	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
ead (Pb)	µg/m³	1.0	CPCB Guidelines Vol-I and AAS Method	N.D.	N.D.	N.D.	N.D.
enzene (C_6H_6)	µg/m³	5.0	IS 5182 (Part 11):2006	N.D.	N.D.	N.D.	N.D.
enzo(a) Pyrene	ng/m³	1.0	IS 5182 (Part 12):2014	N.D.	N.D.	N.D.	N.D.

Note: N.D.: Not Detected.

EMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- The use of the report for publication, arbitration or as the legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless agreed with the Customer.
- This is for information to the party has asked for above testing only.

28/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
29/09/22
AUTHORIZED SIGNATORY

----------End of the test report----------

Ambient Air Quality Monitoring Data Taken From NABL Aproved Laboratories APRIL 2022 - SEPTEMBER 2022 Ambuja Cement Plant & Ambuja Rawan Mines ,Maldi Mopar Mines

Name Of Location	Month of April 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
RAWAN MINES OFFICE	54.7	63.8	16.4	21.8	6.7	11.4	16.4	21.9	0.17	0.216
	Month of May 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	62.1	74.2	21.6	30.7	12.8	14.2	17.2	19.9	0.529	0.619
	Month of June 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	75.2	88.2	40.2	46.5	10.2	16.4	20.2	32.2	0.11	0.34
	Month of July 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	70.6	82.2	32.6	44.8	10.6	18.5	22.8	32.4	0.11	0.26
	Month of August 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	50.8	66.6	22.2	34.2	8.2	18.2	22.5	28.8	0.1	0.34
	Month of September 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	42.6	60.5	20.8	30.2	8.8	18.4	20.2	28.8	0.12	0.36

Ambient Air Quality Monitoring Data Taken From NABL Aproved Laboratories APRIL 2022 - SEPTEMBER 2022 Ambuja Cement Plant & Ambuja Rawan Mines ,Maldi Mopar Mines

Name Of Location	Month of April 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
MALDI MINES OFFICE	57.2	68.1	18.1	26.3	8.4	13.6	18.6	23.8	0.182	0.251
	Month of May 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	63.8	70.3	23.2	27.5	15	17.5	17.5	21	0.448	0.611
	Month of June 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	81.3	89.4	40.3	48.5	8.2	16.4	16.8	32.6	0.12	0.34
	W									
	Month of July 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	72.2	84.7	34.5	44.6	9.2	16.2	18.8	30.2	0.16	0.38
	Month of August 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	62.8	74.8	20	36.4	8.4	16.8	20.5	32.4	0.12	0.34
	Month of September 2022									
	PM10		PM2.5		SO2		NO2		CO	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	46.8	64.4	20.8	28.8	9.8	16.8	20.2	30.2	0.1	0.28

Annexure-IX

Typical view of Road Water sprinklers

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer			
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO	UES/TR/22-23/03644	
	LAB REF NO	UES/22-23/FE/09102	
	DATE OF SAMPLING	02/09/2022 to 23/09/2022	
	DATE OF RECEIPT	20/09/2022 to 24/09/2022	
	DATE OF REPORT	28/09/2022	
	DATE OF ANALYSIS	Start:21/09/2022	End:28/09/2022

SAMPLE DETAILS

Monitoring For	Work Place Air Monitoring (MINES)
Customer Ref. No. & Date	2800900967/NE08, Date:07/06/2022
Duration Of Sampling	8 Hours
Sample Collected By	Laboratory Chemist
Sampling Procedure	As Per Method Reference
Sample Quantity/Packing	GMF Filter Paper (8 X 10 Inch): 1x1 No.

TEST REPORT

Parameter	Unit	Result (SPM)	The Environment (Protection) Rules, 1986 Standard	Method Reference
South Block Field Office Rawan mines	µg/m³	1024	2000	EPA Method Io - 2.1
North Block Field Office Rawan mines	µg/m³	1236		
South Block Haulage Road Rawan mines	µg/m³	1462		
North Block Haulage Road Rawan mines	µg/m³	862		
Maldi Mines Workshop	µg/m³	728		
Maldi Mines Haulage Road	µg/m³	1282		

Terms & conditions

- *The report for publication, arbitration or as the legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with the customer.*
- *This is for information as the party has asked for the above test (s) only.*

28/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
28/09/22
AUTHORIZED SIGNATORY

----------*End of the test report*----------

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address of The Customer		
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	REPORT NO.	UES/TR/22-23/03637
	LAB REF NO.	UES/22-23/N/09068-9071
	DATE OF REPORT	25/09/2022
	DATE OF SAMPLING	22/09/2022 to 23/09/2022

SAMPLE DETAILS

MONITORING FOR	NOISE LEVEL MONITORING
CUSTOMER REF. NO. & DATE	2800900967/NE08, Date 07/06/2022
SAMPLING LOCATION	MINES (CORE ZONE)
SAMPLE COLLECTED BY	LABORATORY CHEMIST
SAMPLING PROCEDURE	IS 9989:1981:RA 2001

TEST REPORT

LOCATION	UNIT	RESULT		LIMIT (INDUSTRIAL ZONE)	
		DAY TIME	NIGHT TIME	DAY TIME	NIGHT TIME
Industrial Area					
MALDI LIMESTONE FIELD OFFICE	dB(A)	64.2	48.2	75	70
MALDI LIMESTONE HAULAGE ROAD	dB(A)	62.9	52.6		
RAWAN LIME STONE NORTH BLOCK AREA	dB(A)	66.4	55.4		
RAWAN LIME STONE SOUTH BLOCK AREA	dB(A)	54.8	46.8		

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

25/09/22
REVIEWED BY

For ULTIMATE ENVIROLYTICAL SOLUTIONS
25/09/22
AUTHORIZED SIGNATORY

----------*End of the test report*----------

Annexure – XI

Format No. : UES/FORM/09

Ultimate
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099
Ph : 0771 - 4027777 I Email : ultimatenviro@gmail.com

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

Name & Address Of The Customer	Report No	UES/TR/22-23/03630	
TO, **AMBUJA CEMENT LIMITED** **(UNIT: BHATAPARA)** **P.O. Rawan, Tehsil: Baloda Bazar,** **Dist: Baloda Bazar-Bhatapara-493331**	Lab Ref No	UES/22-23/W/09059-09060	
	Date of Sampling	27/09/2022	
	Date of Receipt	28/09/2022	
	Date of Report	03/10/2022	
	Date of Analysis	Start:28/09/2022	End: 03/10/2022

SAMPLE DETAILS

Sample Type	Effluent Water	Customer Ref. No. & Date	2800900967/NE08 Date 07/06/2022
Customer Sample Id	Rawan Mines Etp Inlet /Outlet	Sample Condition At Receipt	Ok
Packing Of Sample	Jerry Cane (2.5 ltr.*1) Glass bottle (300ml*1)	Sample Collected By	Laboratory Chemist
Other Details	Sealed	Quantity Received	Approx. 5.0 Ltr.

TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	LIMITS AS PER TREATED WATER	ETP INLET (UNTREATED)	ETP OUTLET (TREATED)
1	pH Value at 25.0°C	-	IS:3025:(Part-11):1983, RA 2012	5.5 To 9.0	6.98	7.04
2	Total Suspended Solid	mg/L	IS:3025:(Part-17):1984, RA 2012	100	242	48.0
3	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	-	176.0	128.4
4	Chemical Oxygen Demand	mg/L	IS:3025:(Part-58):2006, RA 2012	250	164.2	30.0
5	Bio-chemical Oxygen Demand at 27°C for three day	mg/L	IS:3025:(Part-44):1993 RA 2014	30	52.8	12.8
6	Oil & Grease	mg/L	IS:3025:(Part-39):1986	10	Absent	Absent

Note:mg/lit.: milligram per liter. N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

Terms & conditions

- *The report for publication, arbitration or as legal dispute is forbidden.*
- *Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.*
- *This is for information as the party has asked for above test(s) only.*

For ULTIMATE ENVIROLYTICAL SOLUTIONS

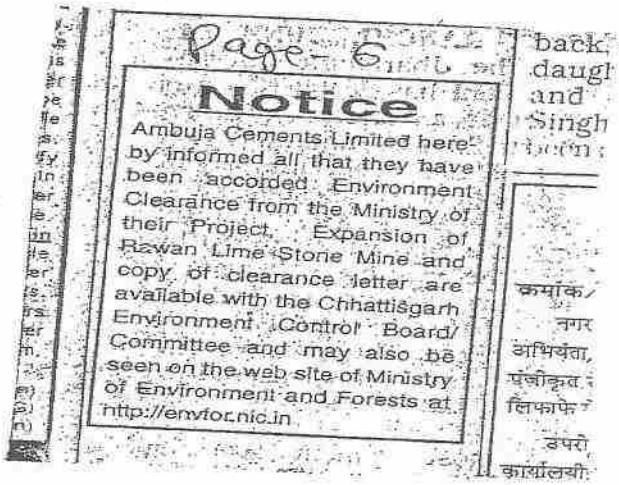
03/10/22
REVIEWED BY

03/10/22
AUTHORIZED SIGNATORY

----------End of the test report----------

Annexure- XII

Central Chronicle, Raipur
dated 15.06.07



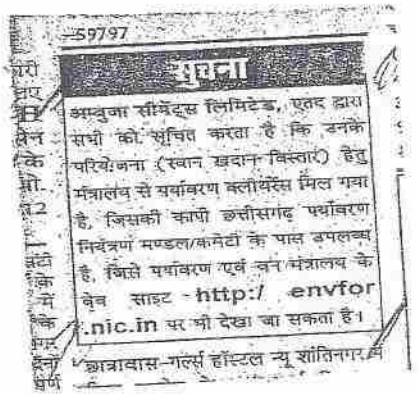
Page- 6

Notice

Ambuja Cements Limited here by informed all that they have been accorded Environment Clearance from the Ministry of their Project Expansion of Rawan Lime Stone Mine and copy of clearance letter are available with the Chhattisgarh Environment Control Board/ Committee and may also be seen on the web site of Ministry of Environment and Forests at http://envfor.nic.in

हरिभूमि रायपुर, दिनांक 15.06.2007

Page- 6



59797

सूचना

अम्बुजा सीमेंट्स लिमिटेड, एतद द्वारा सभी को सूचित करता है कि उनके परियोजना (रवान खदान विस्तार) हेतु मंत्रालय से पर्यावरण क्लीयरेंस मिल गया है, जिसकी कापी छत्तीसगढ़ पर्यावरण नियंत्रण मण्डल/कमेटी के पास उपलब्ध है, जिसे पर्यावरण एवं वन मंत्रालय के वेब साइट - http:/ envfor .nic.in पर भी देखा जा सकता है।