

**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI
O.A. NO.164/2018
(EARLIER O.A NO. 276/2013)**

IN THE MATTER OF:-

ASHWANI KUMAR DUBEY

APPLICANT

VS.

UNION OF INDIA & ORS.

RESPONDENTS

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Log
**(NAZIMUDDIN)
SCIENTIST-E
CENTRAL POLLUTION CONTROL BOARD,
PARIVESH BHAWAN, EAST ARJUN NAGAR,
DELHI-110032.**

DATE: 20.08.2019
PLACE: DELHI

Compliance Report

**In reference to Order dated 19.07.2019 (Para 18 to 22) of
Hon'ble National Green Tribunal (Principal Bench)
New Delhi**

in the Matter of

O.A.No.164 of 2018 (Earlier O.A. No. 276/2013)

Ashwani Kumar Dubey

Vs.

Union of India & Ors.

**Compliance Report in refrence to Order dated 19th July 2019 of
Hon'ble National Green Tribunal (Principal Bench), New Delhi in
O.A. 164/2018 Ashwani Kumar Dubey Vs Union of India & Ors.**

Hon'ble National Green Tribunal (NGT) Principal Bench (PB) in O.A.164/2018 Ashwani Kumar Dubey Vs Union of India & Ors. considered the joint inspection report in respect of M/s Essar Power (M.P.) Ltd. on 19.07.2019 and passed order dated 19.07.2019 (Para 18 to 22) directing as under:

“However, the unit must comply with the requirement of operation of STP, establishment of peizometers and remote calibration (of CEMS) as well as other deficiencies forthwith which may be overseen by the CPCB. In this regard the CPCB may assess compensation for the damage in this regard for last five years and give its report within one month by email at judicial-ngt@gov.in”

In compliance of the above order the officers from CPCB Bhopal office carried out site visit of Singroli on 02.08.2019 and collected information and supporting documents to assess the status of compliance by M/s Essar Power (M.P.) Ltd. on the deficiencies reported in the joint report mentioned in above Hon'ble NGT order and to assess environmental compensation for non-compliance during last five years (2014-15 to 2018-19).

The updated compliance status on the deficiencies reported in the joint report mentioned in above Hon'ble NGT order such as operation of STP, establishment of peizometers, remote calibration system for CEMS, ground water depletion assessment study etc. is enclosed as **Annexure-A**.

In view of the compliance on other points, non-utilisation of ash as per the Central Government amendment notification dated 3.11.2009 for utilization of ash generated in coal/lignite based power plants has been considered as the overriding point of non-compliance and accordingly environmental compensation has been assessed for non-compliance of the year wise targets set for ash utilization in the said notification as below:

Assessment of environmental compensation

The Unit#1 & #2 commissioned on 29.4.2013 & 7.10.2018 respectively. Due to non-availability of coal the plant was stopped operation during 17.10.2014 to 29.4.2016. The industry disposes off the unutilized ash / fly ash in wet form having 65:35 Ash to Water ration using High Concentration Slurry Disposal System (HSDS). Ash utilization during 5 years has been as under:

Year	Target	Actual % utilization	Compliance
2014-15	At least 70% (within two years from the date of commissioning i.e. 29.4.2013).	95.3	Compliance
2015-16	Due to non-availability of coal the plant was completely stopped operation during 17.10.2014 to 29.4.2016.	--	Not applicable
2016-17	90% (within three years from the date of commissioning i.e. 29.4.2013).	80.6	Non-compliance
2017-18	100% (within four years from the date of commissioning i.e. 29.4.2013).	61.2	Non-compliance
2018-19	100%	86.4	Non-compliance

As per the Environmental Compensation guidelines framed by CPCB in compliance of order 31.08.2018 in O.A. 593/2017 the maximum environmental compensation is Rs. 30,000/- per day of non-compliance. Since the non-

compliance related to ash utilisation is to be assessed on annual basis, the number of non-compliance days in a year are assessed proportionate to the level of non-compliance as below:

Non-compliance days = 365 days x (annual unutilization, %) / utilisation target, %)

Therefore,

Non-compliance days in 2014-15 : Nil (actual ash utilisation was more than target)

Non-compliance days in 2015-16 : Nil (the plant remained not in operation)

Non-compliance days in 2016-17 : $365 \times 9.4 / 90 = 38$ days

Non-compliance days in 2017-18 : $365 \times 38.8 / 100 = 142$ days

Non-compliance days in 2018-19 : $365 \times 13.6 / 100 = 50$ days

Total number of no-compliance days = 230 days

Accordingly,

Environmental compensation = Rs. 30,000 per day x 230 days

= Rs. 69 lakhs (Rupees Sixty Nine Lakhs)

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Annexure-A

S.No.	Non-complying consent conditions	Compliance status
1.	The regular operations of STP	Complying. The unit operates its 25KLD STP regularly & monthly analyse the quality of treated waste water through third party. Analysis report for the month May 2019 is enclosed as Annexure-1.
2.	Peizometers establishment in periphery of ash pond	Complying. The third party monitoring report of "Ground water monitoring and depletion" (Dec, 2018) is enclosed as Annexure-2.
3.	Non-complying with remote calibration assess to MPPCB	The peizometers installation is in process and expected to complete by 15.09.2019. Complying. Unit has installed Continuous Emission Monitoring (CEMS) on 02-10-2014 with all the data directly connected to MPPCB & CPCB servers on 16-03-2016. Letter is enclosed as Annexure-3. The Purchase Order for remote calibration was issued in 18-Jul-2018 to M/s Swan Technical Services Pvt Ltd. Copy of the purchase order in enclosed as Annexure-4. Remote calibration of CEMS has been completed on 03-Aug-2019. Installation report is enclosed as Annexure-5.
4.	Ground water depletion study not yet carried out	Complying. Unit receives allocated water from Rihand reservoir with dedicated pipeline. As per the EIA study carried out before start off the project, the water level was at 4-5 m around the project site. As per recently conducted "Ground Water Monitoring & Compliance Report" dated Dec-2018 there is no any depletion as compared to EIA study (Annexure-2).
5.	Not yet informed MPPCB regarding the low lying area filling with ash	Complying. Unit has informed Madhya Pradesh Pollution Control Board (MPPCB) vide letter No. EPMP/LA/3917A/10 dated 29.03.2017 about the use of Fly Ash in low lying areas. Copy of the letter is enclosed as Annexure-6.

6.	Fly ash utilization up to 86.42% by FY 2018-19	<p>Not complying. The unit dumped its fly ash using High Concentration Slurry Disposal system.</p> <p>The Unit#1 & #2 commissioned on 29.4.2013 & 7.10.2018 respectively. Due to non-availability of coal the plant was completely stopped operation during 17.10.2014 to 29.4.2016.</p> <p>As per the Fly ash notification dated 3.11.2009; following was the fly ash utilization against the target date (details are given under Annexure-7):</p>																		
		<table border="1"> <thead> <tr> <th>Year</th> <th>% utilization</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>2014-15</td> <td>95.3</td> <td>At least 70% (Two years from the date of commissioning i.e. 29.4.2013).</td> </tr> <tr> <td>2015-16</td> <td>--</td> <td>--</td> </tr> <tr> <td>2016-17</td> <td>80.6</td> <td>90% (Three years from the date of commissioning i.e. 29.4.2013).</td> </tr> <tr> <td>2017-18</td> <td>61.2</td> <td>100% (Four years from the date of commissioning i.e. 29.4.2013).</td> </tr> <tr> <td>2018-19</td> <td>86.4</td> <td>100%</td> </tr> </tbody> </table>	Year	% utilization	Target	2014-15	95.3	At least 70% (Two years from the date of commissioning i.e. 29.4.2013).	2015-16	--	--	2016-17	80.6	90% (Three years from the date of commissioning i.e. 29.4.2013).	2017-18	61.2	100% (Four years from the date of commissioning i.e. 29.4.2013).	2018-19	86.4	100%
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2018-19	86.4	100%																		
7.	Flue Gas Desulfurization plant installation under progress	<p>Under process of Complying.</p> <p>Feasibility study is under finalization, techno commercial proposal received from various vendors; however finalization is pending due to ambiguity in applicable norms for EPMPL Unit-2. Communication regarding this with CEA is attached under Annexure- 8. Timeline for installation of FGD is till 2020.</p>																		
8.	Internal roads of weighbridge to coal handling area & ash pond area are not yet pucca.	<p>Complying.</p> <p>RCC pucca road from weighbridge to coal handling areas provided, however due to heavy vehicle movements some minor road repairs were observed during earlier visit i.e. 4-5th July 2019. WBM road is provided in around ash pond.</p>																		

9.	Fugitive dust control system (water mist spray) is inadequate at CHP area.	<p>Complying. The water mist spray at CHP area was working effectively during earlier visit the nozzles were found chocked. Industry has cleaned-up the nozzles & working fine.</p>
10.	Interlocking of the process with APCDs	<p>Complying. The unit has procured BTG & BOP package from reputed vendors like Harbin Electric Company Ltd., Areva, ABB, McNally Bharat etc. these vendors have already implemented process logics and interlocks to take care safety & environmental aspects of TPP. Interlocking of APCDs like Bag filters, DSS, DES etc. are already in place. Sample testing protocol is attached as Annexure-9.</p>

Annexure-1

TEST REPORT



ANACON LABORATORIES PVT. LTD.

ISO 9001:2015, ISO 14001:2015, OHSAS 18001 Certified Organization,
Recognized By Ministry of Environment & Forests (MoEF), New Delhi
Accredited By Quality Council of India by NABET - Environment Impact Assessment Studies
Authorised by Food Safety & Standards Authority of India Under FSS Act
Approved by Bureau of Indian Standards (BIS)

Test Report No. : ALPL/10062019/114-2

Page 1 of 1

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No. 1920/Mon-75-W2 Inward Date 03.06.2019 W.O.NO. EPMPL/SFS/9610007143 Date 10.03.2018	Analysis Start 04.06.2019 Analysis End 08.06.2019 Report Issue Date 10.06.2019 Sample Category Water	
	Sample Name Sewage Water	Sample Collected By Anacon Representative	Quantity Received 2 Lit.
	Sampling Location Inside the Plant	Sampling Date 31.05.2019	Sampling Time 1.30 pm

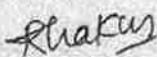
TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Result	Limit's
1.	pH	-	7.14 at 25°C	5.5 to 9.0
2.	Electrical conductivity at 25°C	µs/cm	739	--
3.	Chemical oxygen demand (COD)	mg / l	16.4	50
4.	Biochemical oxygen demand (BOD at 27°C for 3 days)	mg / l	4.1	10
5.	Suspended Solids (SS)	mg / l	< 10	10
6.	Total dissolved solids (TDS)	mg / l	414	2100
7.	Oil & Grease	mg / l	< 4	10
8.	Dissolved Oxygen (DO)	mg / l	5.8	--
9.	Phosphate (PO ₄)	mg / l	1.16	2
10.	Ammonical Nitrogen (NH ₄ -N)	mg / l	1.3	5
11.	Total Nitrogen	mg / l	2.1	10
12.	Fecal Coliform	Per 100ml	110	230

NOTES : ● Please see watermark "Original Test Report" in blue color to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to Invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only.

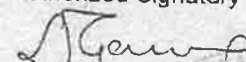
Verified by



Ms. Roshani Thakur
(Chemist)

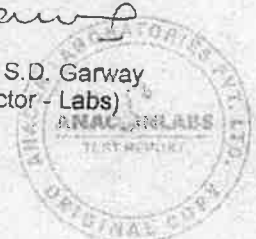
For ANACON LABORATORIES PVT. LTD.

Authorized Signatory



Dr. (Mrs.) S.D. Garway
(Director - Labs)

Head Office : 60, Bajiprabhu Nagar, Nagpur - 440033 India, Ph. No. (0712) 2242077, 9372404924, Email : ngp@anacon.in
Lab : FP 34-35, Food Park, Five Star Estate, MIDC Bulburi, Nagpur - 441122, Mob. No. 9373287475, Email : labngp@anacon.in
Support Helpline : Technical (9373287475), Accounts Division (9326960081, 9372960079), Administration (9372960076)
Email : support@anacon.in. You may also visit us at www.anaconlaboratories.com
Branches : Maharashtra | Chhattisgarh | Madhya Pradesh | Jharkhand | Delhi



Annexure 2**GROUND WATER MONITORING AND
DEPLETION REPORT****FOR****M/s Essar Power MP Ltd****ESSAR** 

Located at

Bandhaura, PO-Karsualal, District - Singrauli,
486 886.*Environment Consultant***QCI-NABET MoEF & CC (GOI)****NABL Recognized Laboratory****ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007**

60, Bajiprabhu Nagar, Nagpur - 440 033, MS

Lab. & Consultancy: FP-34, 35, Food Park,

MIDC, Butibori, Nagpur - 441122

Ph.: (0712) 2242077, 9373287475

Email: info@anacon.in, ngp@anacon.inwebsite: www.anaconlaboratories.com**December-2018**

FOREWORD

In order to assess the Ground Water Regime of the area for M/s. Essar Power MP Ltd. Management engaged M/s. Anacon Laboratories Pvt. Ltd Nagpur for detail study of the Groundwater monitoring both ground water table fluctuation and impact on ground water quality if any during the year 2018 to comply with the conditions of CTO, also here it would be proper to mention that company is not using ground water for their project entire quantity of water used for plant is from surface water as per permission from Competent Authority.

However as social responsibility and for protection and conservation of surface and groundwater the utmost importance is given to avoid any impact on the water quality and quantity by way of water conservation through harvesting of rain water and proper use. It is mandatory requirement to submit study report based on primary and secondary data on groundwater regime of the area. In line with this requirement, the management of M/s. Essar Power MP Ltd. has adopted a corporate responsibility of water conservation and protection.

This is ground water quality report submitted for [Year-2018]

**For Essar Power MP Ltd
(Bandhaura Plant)**

For Anacon Laboratories Pvt. Ltd.



S. D. Garway

Authorized Signatory

**Dr. Mrs. S. D. Garway
(Director-Lab)**

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

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GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)

1.0 INTRODUCTION

Essar Power Ltd is one of India's largest private sector power producers with an operating track record of over 20 years. It owns plants in India and Canada with a planned generation capacity of 5,090 MW, of which 3,830 MW is operational. The operating plants are at Bandhaura in Madhya Pradesh, Hazira & Salaya in Gujarat, Paradeep in Odisha, and Algoma in Ontario, Canada. Another 1,260 MW of capacity is under construction at Tori, Jharkhand, and Paradeep. Essar Power has also invested in the transmission business, building a 465-km transmission system that spans three Indian states.

Essar Power Mahan — Madhya Pradesh (1,200 MW)

The Mahan I power plant is a 1,200 MW (2×600 MW) captive coal-fired pit-head power plant located in Singrauli district, Madhya Pradesh. The Mahan plant is supported by an end-to-end raw material sourcing and evacuation infrastructure.

Essar Power Transmission Company Ltd.(EPTCL), an arm of Essar Power, has built a 465-km Inter State Transmission System (ISTS), comprising three transmission lines. These lines are:

- 337-km 400 kV Mahan-Sipat line
- 105-km 400 kV Gandhar-Hazira line
- 22-km loop-in-loop-out (LILO) on 400 kV Vindhyachal-Korba line

The lines span three states—Madhya Pradesh, Chhattisgarh and Gujarat—and connect the Mahan power plant to the Central Grid.

1.1 Objectives

- Groundwater monitoring of the study area to know the generalized ideas of water levels during year 2018.
- Evaluation and required measures for rainwater harvesting and artificial recharge structures and estimation of recharge potential to ameliorate the adverse impact on ground water regime.
- To assess the ground water availability, quantity, quality and its development prospects.

1.2 Location and Extent

The project area falls in Bandhaura, Block Mada, Singrauli District, with the state of Madhya Pradesh. The present study has been carried out in an area around the project, considering study area of 5 Km radius, which comes to around 78.5 sq. Km, lies between

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

latitude from 24°03'17.04"N to 23°57'53.30"N and longitude 82°21'31.09"E to 82°27'28.43"E and falls in survey of India Topo-sheet nos. 63L/8 and 64 I/5. The location of project area is defined by latitude and longitude 24° 0'29.21"N and 82°25'2.18"E respectively.

The area is well connected by Tar road called as Essar Power Plant Road which connects to District Road. The surrounding of the projects is connected by tar road, mettle and unmettle road within 5 Km radius. Singrauli Railway Station, on Jabalpur-Howrah Broad Gauge main line of the EC Railway is around 33 km away from the project area. The project area falls in Bandhaura village. The location map is given in **Plate 1.1**; satellite image of the plant premises is given in **Plate 1.2** and Satellite image of the 5 km study area given in **Plate 1.3**

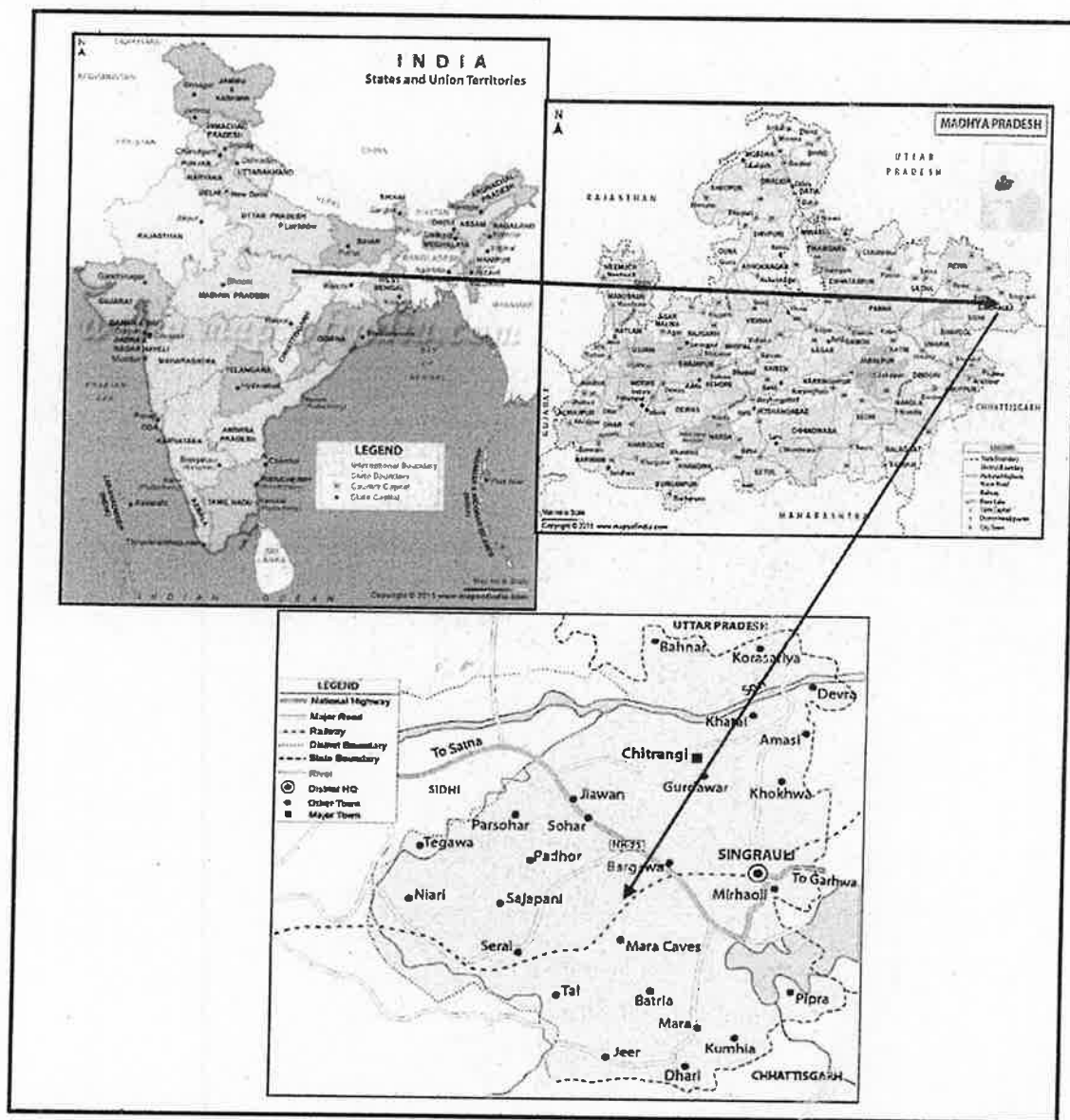


Fig 1.1: Location map

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**



Plate 1.2: Plant premises with Ash Dyke and Coal Yard

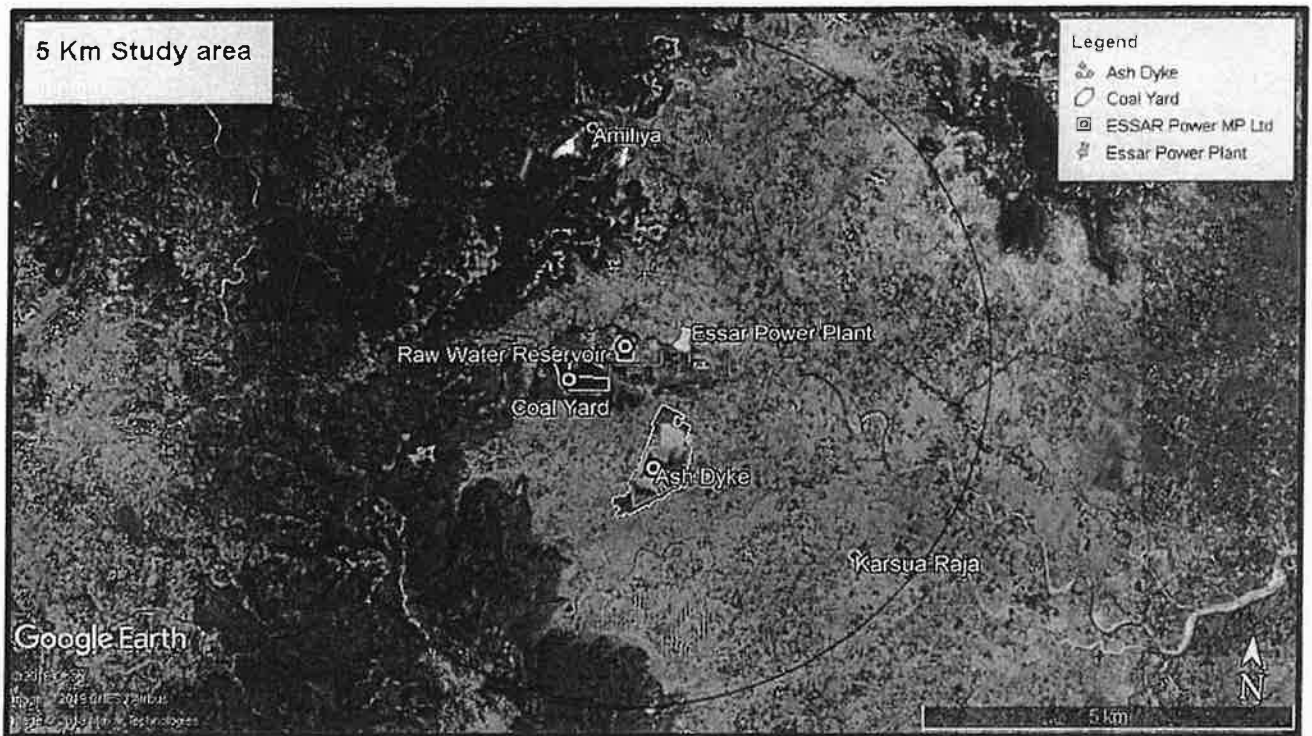


Plate 1.3: 5 Km study area with location of Plant

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

1.3 Geomorphology

The district as a whole constitutes a hilly terrain most part of the district is covered by kaimur hilly ranges. The district is divided into three physiographic divisions: -

- (i) Kaimur hilly ranges
- (ii) The Central part hilly ranges
- (iii) Southern hilly ranges

In the district three main river flows along with several tributaries. The major rivers are the son, Gopal and Rihand. Study area lies in central hilly region which shows undulating terrain. Drainage pattern of the study area is mostly Dendritic but locally Radial drainage pattern also observed especially in hilly region.

1.4 Geology

The geology of the district reveals that the Occurrence of various work formation as old as granites of Achaeon age to the Alluvium of Recent age. The other important formations Outcropping in the district are Deccan trap of cretaceous – Eocene, Gondwanas of Paleozoic to Mesozoic Sandstone and other ranks of Vindhayans and Phyllites. Quartzites, Schist Gneisses and Granites of Archeans age. The Geology of the district is shown in the Hydrogeological Map. The general Stratigraphical Succession obtained in the district is given as under:- **Table 1.1**

Table 1 Generalised Stratigraphic succession

Period	Series/stage	Lithology	
Recent Pleistocene	Alluvium	Alluvium and soil cap comprising clay, sand gravel etc.	
Cretaceous to Eocene	Deccan Traps	Basaltic Lava flows	
Permian to up carboniferous	Gondwanas	Upper Gondwana formation Ranging formation Talchir formation	Sandstone, Coal beds, Shale conglomerate

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

			and glauconite
Cambrian	Vindhya	Kaimur Series Semri Series	Porcellinite sandstone Orthoquartzite and conglomerate
Pre Cambrian	Archeans	Phyllite, Quartzites, Granite, Schist, gneisses metabasic sedimentary and intrusive	

1.5 Hydrogeology

1.5.1 Introduction

The ground water occurrence and its distribution in space are highly influenced by the underlying geological formations and hydro-geological characteristic of the surroundings. The weathered, jointed and fractured zones present in the rocks or formation provides scope of ground water occurrence, storage and its movement. The hydrogeology of the area broadly describes the disposition of water bearing formations occurrence of ground water and their yield potential, groundwater regime conditions, and depth to water levels in different seasons, yield potential of the aquifers etc.

1.5.2 Ground water occurrence and Aquifer system

The district area is underlain by hard rocks as well alluvium. The occurrence and movement of ground water in different formations varies with rock type. The weathered and fractured zones occurring at shallow depths provide scope of ground water storage and movement. In the study area lower Gondwana formations i.e Talchir sandstone and Raniganj sandstone forms the major aquifer system. The upper gondwana formations mainly consists of sandstones and clays and present in hilly terrain in the southern part of the study area.

GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)

2.0 Ground Water Monitoring data

Monitoring of ground water levels at pre-specified locations with respect to time provides basic idea of changes in ground water regime due to various stresses acting on the ground water system. Seasonal fluctuations in ground water level are indicator of changes in input and output to ground water reservoir. Water level is the manifestation of the resultant changes in space and time. The long term decline in ground water level points towards excess withdrawal with respect to recharge. The ground water level data available for different locations at various time intervals has been analyzed for the study area to understand the regional as well as local ground water regime scenario.

For knowing the behavior of the ground water storage, depth of water levels and fluctuation, the water level monitoring was carried out in the study area by established 10 nos. of observatory dug wells at different villages during pre-monsoon and post monsoon season for the year 2018 which is mentioned in **Table 2.1**. The Established monitoring locations in the study area are represented in **Plate 1.4**. From the field data and with the help of satellite images downstream side in study area is towards East to SE direction which shows in **Plate 1.4**, DEM in **Plate 1.5**, slope map in **Plate 1.6** and Slope trend in **Plate 1.7**.

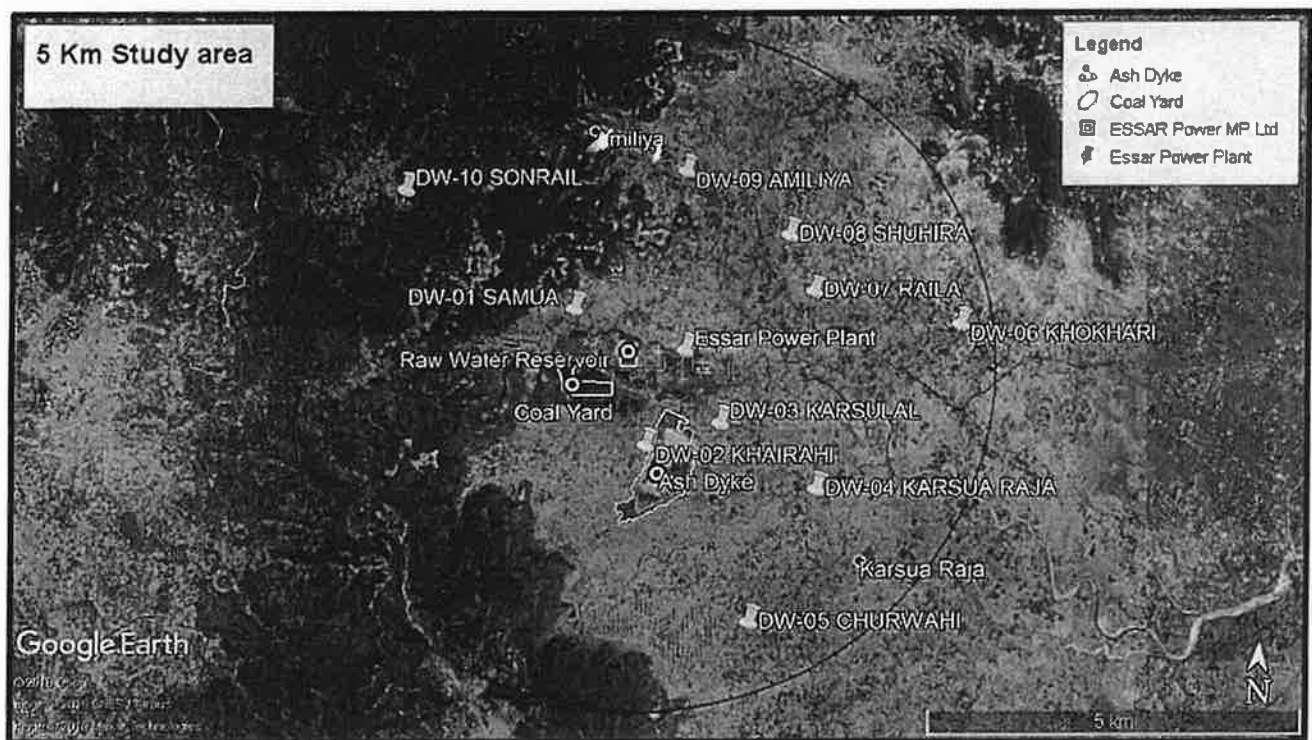


Plate 1.4: Observation wells and downstream direction in study area

**GROUNDWATER MONITORING WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

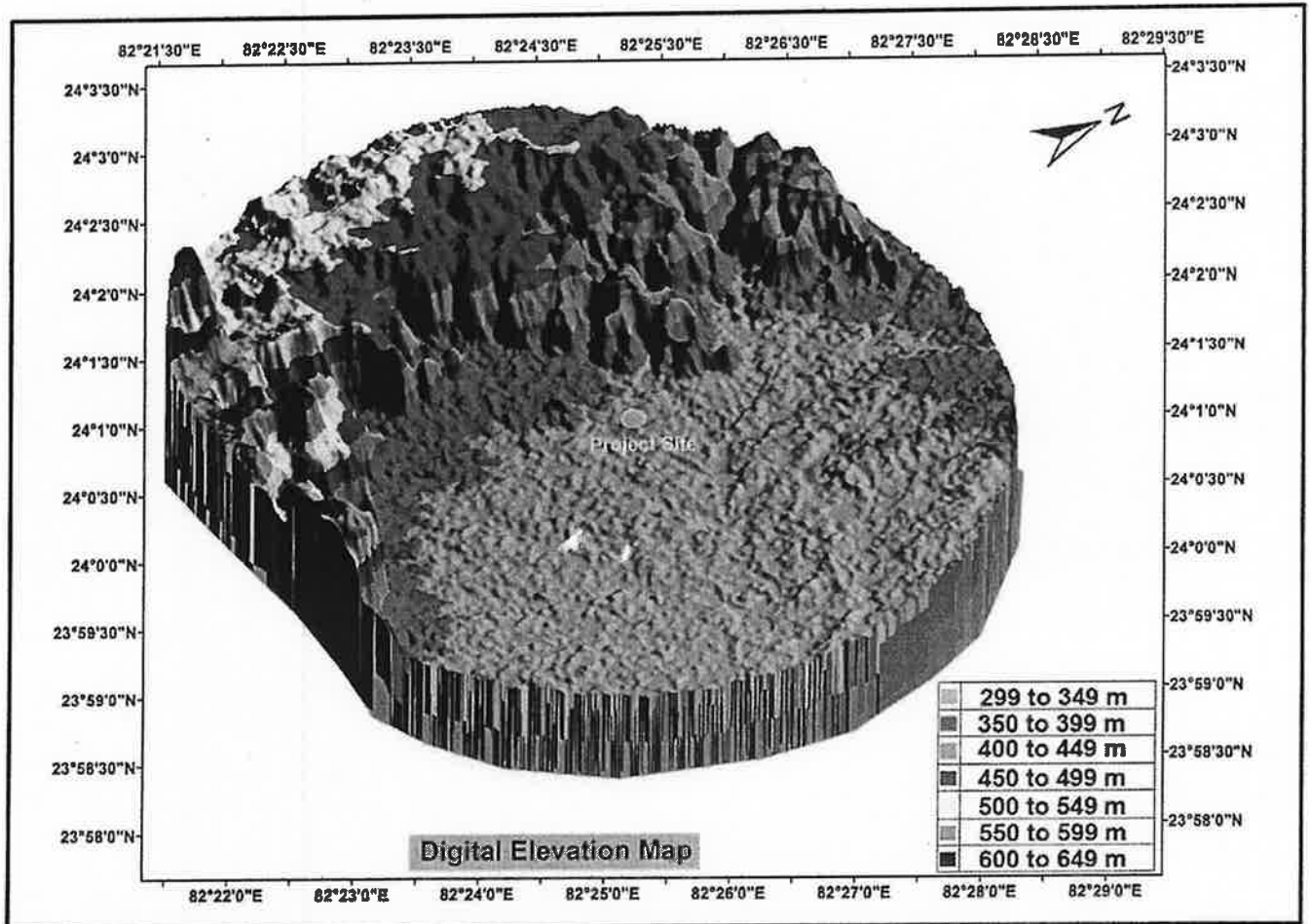


Plate 1.5: Digital Elevation Model of the study area

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
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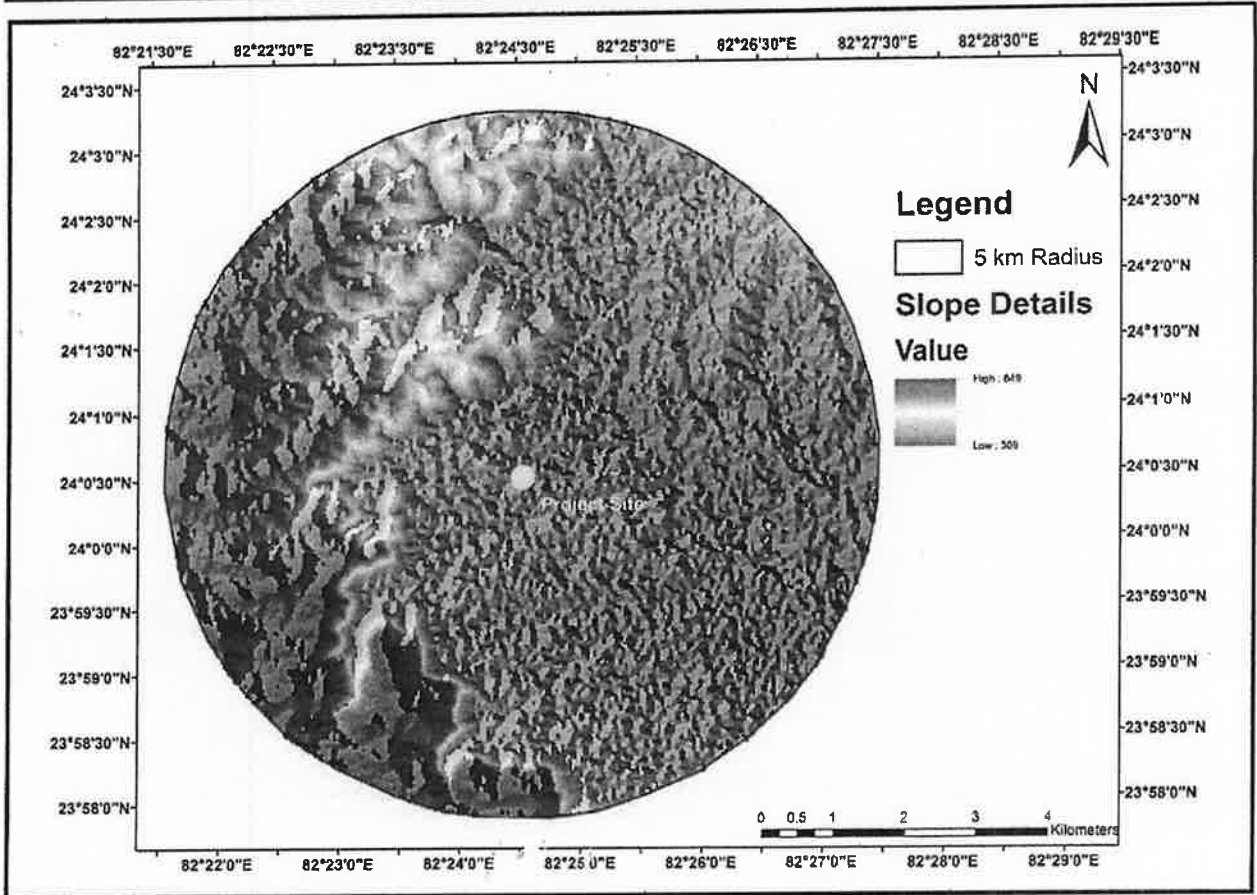


Plate 1.6: Slope map of the Area

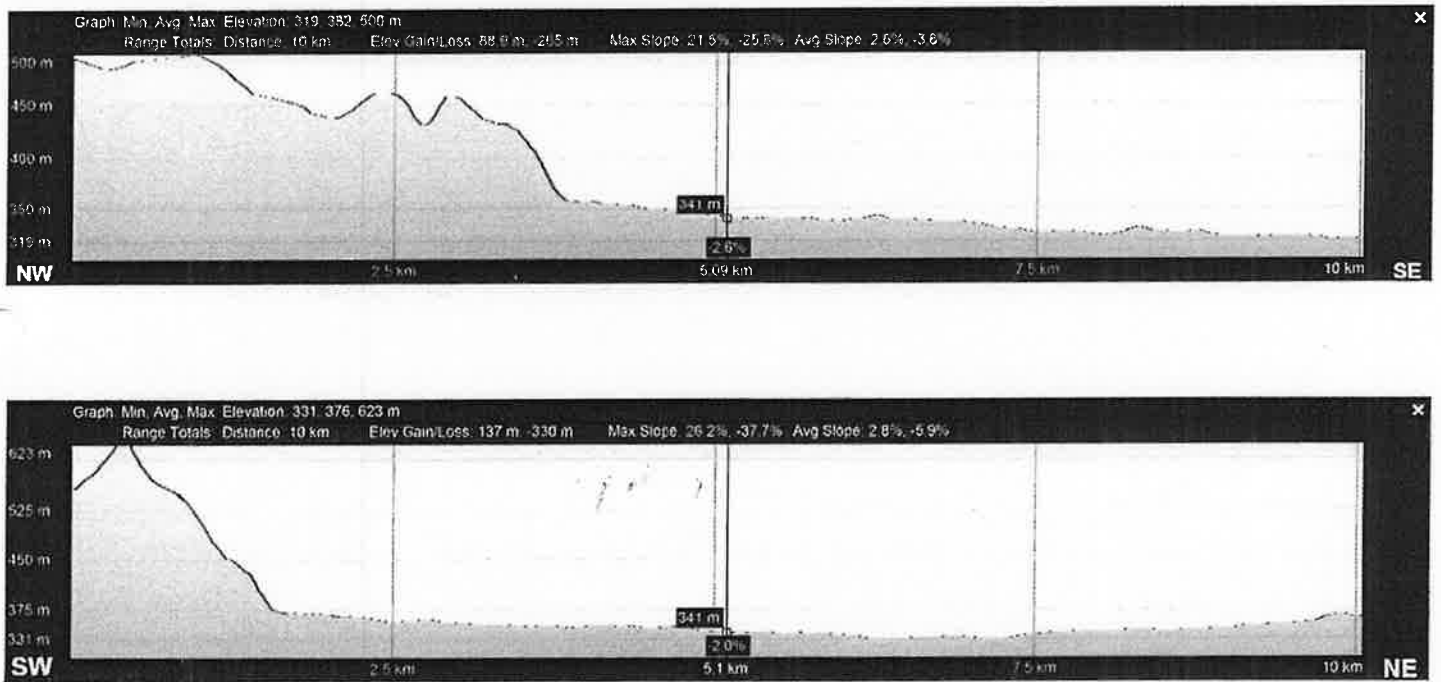


Plate 1.7 Generalized slope trend of the study area –NW-SE direction and SW-NE direction

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

S.N.	Sampling Stations	Latitude N	Longitude E	Pre-Monsoon Water Level (mbgl)	Post-Monsoon Water Level (mbgl)
GW1.	Samua	24°00'44.6''	82° 23'53.6''	8.2	4.5
GW2.	Khairahi	24° 59'42.9''	82° 24'32.4''	7.2	3.1
GW3.	Karsulal	23° 59'55.3''	82° 25'10.5''	7.9	4
GW4.	Karsua Raja	23° 59'28.2''	82° 25'59.3''	6.9	4.8
GW5.	Chourwahi	23° 58'27.7''	82° 25'30.1''	10.1	4.7
GW6.	Khokhari	24° 00'49.19''	82° 27'8.16''	8.2	3.9
GW7.	Raila	24° 01'00.6''	82° 25'53.8''	11	5.1
GW8.	Shuhira	24° 01'27.5''	82° 25'39.8''	9.6	4.8
GW9.	Amiliya	24° 01'55.5''	82° 24'44.9''	11.3	3.4
GW10.	Sonrail	24° 01'36.05''	82° 22'23.07''	10.9	4.1

Table 2.1: Observation wells with locations and water levels

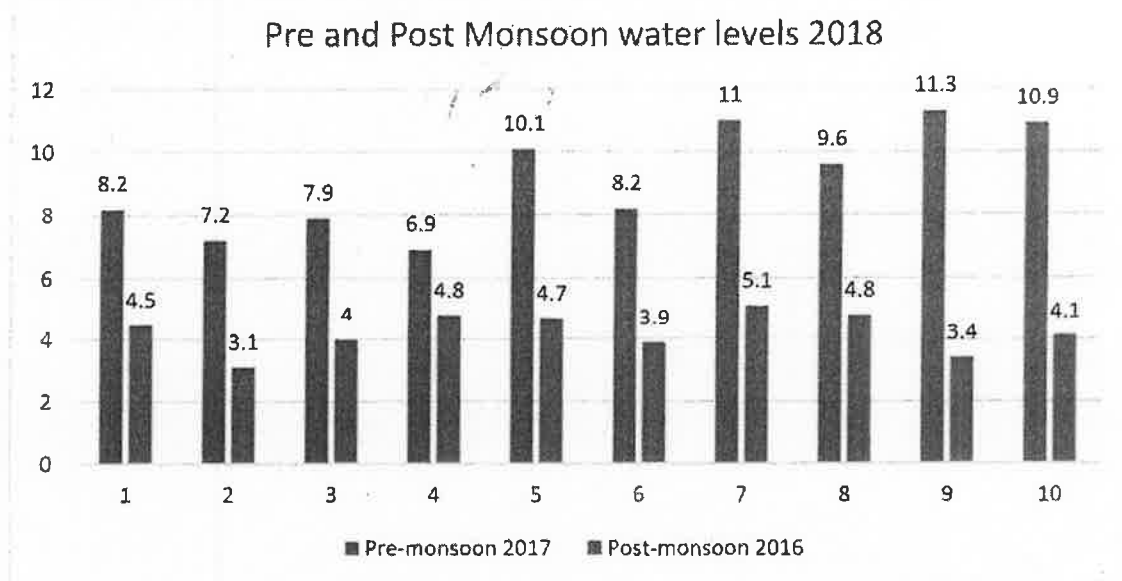


Fig 1.1 Water levels in 2018

Fig 1.1 shows water level fluctuation in the year 2018 for the Post-Monsoon and Pre-monsoon Season and it depends upon rainfall received in monsoon season.

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

3.0 Groundwater Quality Monitoring

3.1 Objective

A routine analysis of Water Quality is required to find out any contamination of natural water due to plant activities as a source. However, as per stipulated condition, ground water quality have monitored for routine parameters and to understand the impact of project in and around for ground water sources and water table.

3.2 Location of Water Quality Sampling

The water quality monitoring was done with a view to check out the impact of project activities on ground water sources due to plant activities. A total number of 08 (Eight) ground water samples were collected and analyzed over the year i.e. for Post-monsoon and Pre-monsoon for the year 2018.

Location of sampling stations is given in **Table – 3.1**

S.No.	Sampling Stations	Latitude N	Longitude E
1	Samua	24°00'44.6''	82° 23'53.6''
2	Khairahi	24° 59'42.9''	82° 24'32.4''
3	Karsulal	23° 59'55.3''	82° 25'10.5''
4	Chourwahi	23° 58'27.7''	82° 25'30.1''
5	Shuhira	24° 01'27.5''	82° 25'39.8''
6	Karsua Raja	23° 59'28.2''	82° 25'59.3''
7	Amiliya	24° 01'55.5''	82° 24'44.9''
8	Sonrail	24° 01'36.05''	82° 22'23.07''

Table – 3.1: Descriptive Listing of Ground Water Sampling wells

3.3 Methodology

Eight ground water samples were collected with consideration of the factors like counter levels and topography, upstream and downstream area, human settlement near the site, location nearest to ash dyke and coal handling areas and usages of water. All Eight water samples were analyzed for selected environmental parameters viz Physical, Chemical and heavy metals as per IS: 10500:2012.

3.4 Observations

The characteristics of ground water samples are presented in **Table – 3.4.1 to 3.4.8** respectively for the **Pre-monsoon** season and in **Table – 3.4.9 to 3.4.16** respectively for the **Post-monsoon** season.

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.1

Test Report No. : ALPL/30042018/39-1

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	14.04.2018	10.50 am		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.36 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	450
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.28
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	42.69
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	85.77
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	160.68
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	33.78
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	18.56
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	23.01
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	12.44
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.

Authorized Signatory



S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-1

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Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue	30.04.2018
	Date	10.03.2018	Date	
			Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	14.04.2018	10.50 am		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-1

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Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	14.04.2018	10.50 am		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.2

Test Report No. : ALPL/30042018/39-2

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Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location Samua Village	Sampling Date 14.04.2018	Sampling Time 12.50 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.23 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	422
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.26
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	40.87
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	74.39
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	146.32
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	32.96
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	16.05
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	16.24
17.	Nitrate (as NO ₃)	mg/l	AP-1A Method	45	No relaxation	9.49
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-2

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Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Samua Village	14.04.2018	12.50 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane	mg/l	APHA 6232	0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Signature
Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-2

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-1	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Samua Village	14.04.2018	12.50 pm		

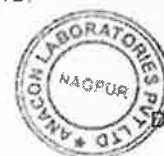
TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm', ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.3

Test Report No. : ALPL/31052018/98-3

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-54-GW-3	Analysis Start	23.05.2018
	Inward Date	22.05.2018	Analysis End	28.05.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	31.05.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsualal Village	17.05.2018	12.30 P.M.		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.82 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.24
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	Min. 1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	328
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.26
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	132.76
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	108.29
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	191.11
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	61.38
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	9.17
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	34.76
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	< 2
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS 3025 (Part 2)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS 3025 (Part 2)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS 3025 (Part 2)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS 3025 (Part 2)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS 3025 (Part 2)	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS 3025 (Part 2)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.6

NOTES : • Please see watermark 'Original Test Report' in blue color to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • *Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'cfu' indicates colony forming units • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • Result for test no. 7 is not relevant. • 'NT' indicates not tested as sample failed to establish safety concerns. • ND-Not Detected.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/31052018/98-3

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-54-GW-3	Analysis Start	23.05.2018
	Inward Date	22.05.2018	Analysis End	28.05.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	31.05.2018
	Date	10.03.2018	Sample Category	Water
Sample Name Ground Water	Sample Collected By Anacon Representative	Sample Source Dug-well Water	Quantity Received 5 Lit. & 250ml	
Sampling Location Karsualal Village	Sampling Date 17.05.2018	Sampling Time 12.30 P.M.		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.01
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.01
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	1.0	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.001
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	MPN/100 ml	IS 1622	—	—	< 2
43.	<i>Escherichia coli</i>	Per100 ml	IS 1622	Absent	Absent	Absent

NOTES : • Please see watermark "Original Test Report" in blue color to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • *Permissible limit in 'absence of an alternate source for drinking water. • MPN indicates most probable number. • 'cfu' indicates colony forming units • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • Result for test no. 7 is not relevant. • 'NT' indicates not tested as sample failed to establish safety concerns. • ND-Not Detected.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/31052018/98-3

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-54-GW-3	Analysis Start	23.05.2018
	Inward Date	22.05.2018	Analysis End	28.05.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	31.05.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsualal Village	17.05.2018	12.30 P.M.		

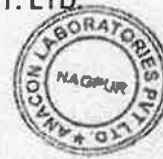
TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta-HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES : • Please see watermark "Original Test Report" in blue color to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • *Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'cfu' indicates colony forming units • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • Result for test no. 7 is not relevant. • 'NT' indicates not tested as sample failed to establish safety concerns. • ND-Not Detected.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.4

Test Report No. : ALPL/30042018/39-3

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-3	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Khairahi Village	14.04.2018	2.50 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.32 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.5
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	418
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.25
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	47.03
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	73.54
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	152.44
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	31.31
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	18.06
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	19.33
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	13.25
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD



Authorized Signatory
Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-3

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-3	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location Khairachi Village	Sampling Date 14.04.2018	Sampling Time 2.50 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.

Authorized Signatory



(Signature)

(Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-3

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-3	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue	30.04.2018
	Date	10.03.2018	Date	
			Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Khairahi Village	14.04.2018	2.50 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.

Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.5

Test Report No. : ALPL/30042018/39-4

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-4	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location Churwahi Village	Sampling Date 14.04.2018	Sampling Time 3.10 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.38 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.7
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	462
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.43
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	54.66
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	104.89
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	177.16
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	40.38
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	18.56
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	25.96
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	14.88
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' Indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-4

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-4	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon, ^{ns} Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Churwahi Village	14.04.2018	3.10 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane	mg/l	APHA 6232	0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)			mg/l	IS 3025 (Part 43) :1001	0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' Indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

[Signature]
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-4

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-4	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location Churwahi Village	Sampling Date 14.04.2018	Sampling Time 3.10 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT end its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.6

Test Report No. : ALPL/30042018/39-5

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-5	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	14.04.2018	3.40 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.19 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.9
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.23
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	482
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.26
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	47.26
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	116.52
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	162.51
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	42.58
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	13.65
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	21.43
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	11.62
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.4

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-5

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-5	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	14.04.2018	3.40 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-5

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-5	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	14.04.2018	3.40 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.

Authorized Signatory



S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.7

Test Report No. : ALPL/30042018/39-6

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-6	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Amiliya Village	14.04.2018	4.15 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	6.73 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.19
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	416
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.21
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	37.81
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	143.68
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	180.13
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	51.29
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	12.64
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	16.58
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	9.43
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	< 0.1

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-6

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-6	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue	30.04.2018
	Date	10.03.2018	Date	
			Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Amiliya Village	14.04.2018	4.15 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane	mg/l	APHA 6232	0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)			mg/l	IS 3025 (Part 43) :1001	0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.

Authorized



Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-6

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-6	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Amiliya Village	14.04.2018	4.15 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' Indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.8

Test Report No. : ALPL/30042018/39-7

Page 1 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-7	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	14.04.2018	4.35 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.16 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Ag. eable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.08
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	457
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.32
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	43.58
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	129.46
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	176.73
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	47.25
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	14.27
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	23.46
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	11.24
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	< 0.1

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-7

Page 2 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-7	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	14.04.2018	4.35 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/30042018/39-7

Page 3 of 3

Issued To : M/s. Essar Power M.P. Ltd., Village: Bandhora, Karsualal, Thesil : Waidhan- 486 886 (M.P.)	Sample Inward No.	1819/Mon-11-GW-7	Analysis Start	17.04.2018
	Inward Date	17.04.2018	Analysis End	21.04.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	30.04.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anakon [®] Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	14.04.2018	4.35 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: ● Please see watermark 'Original Test Report' to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table – 3.4.9

Test Report No. : ALPL/10122018/490-1

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-1	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	27.11.2018	12.45 am		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.31 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.5
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	432
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.34
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	49.22
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	105.66
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	173.04
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	36.26
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	20.06
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	38.21
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	16.23
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

NOTES: • Please see watermark 'Original Test Report' to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory
(Signature)
 Dr. (Mrs.) S.D. Garway
 (Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-1

Page 2 of 3

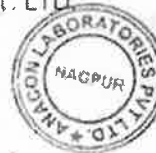
Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-1	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	27.11.2018	12.45 am		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane	mg/l	APHA 6232	0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)			mg/l	IS 3025 (Part 43) :1001	0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-1

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-1	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Shuhira Village	27.11.2018	12.45 am		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
xix.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
xx.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
xxi.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
xxii.	Alachlor	µg/l	USEPA 508	20	< 0.03
xxiii.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
xxiv.	Atrazine	µg/l	USEPA 1657	2	< 0.03
xxv.	Butachlor	µg/l	USEPA 508	125	< 0.03
xxvi.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
xxvii.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
xxviii.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xxix.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xxx.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xxxi.	Ethion	µg/l	USEPA 1657	3	< 0.03
xxxii.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xxxiii.	Malathion	µg/l	USEPA 1657	190	< 0.03
xxxiv.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xxxv.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xxxvi.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table – 3.4.10

Test Report No. : ALPL/10122018/490-2

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-2	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Samua Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.31 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	448
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.33
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	52.42
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	97.43
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	166.86
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	34.61
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	19.56
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	28.63
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	18.77
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-2

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-2	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Samua Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-2

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-2	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Samua Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
xix.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
xx.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
xxi.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
xxii.	Alachlor	µg/l	USEPA 508	20	< 0.03
xxiii.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
xxiv.	Atrazine	µg/l	USEPA 1657	2	< 0.03
xxv.	Butachlor	µg/l	USEPA 508	125	< 0.03
xxvi.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
xxvii.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
xxviii.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xxix.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xxx.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xxxi.	Ethion	µg/l	USEPA 1657	3	< 0.03
xxxii.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xxxiii.	Malathion	µg/l	USEPA 1657	190	< 0.03
xxiv.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xxv.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xxvi.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

Table – 3.4.11

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-3

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-3	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Khairahi Village	27.11.2018	3.40 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.25 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.4
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	454
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.32
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	37.99
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	89.47
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	160.68
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	28.84
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	21.57
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	25.46
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	18.40
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' Indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-3

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No. 1819/Mon-328-GW-3 Inward Date 03.12.2018 W.O.NO. EPMPPL/SFS/9610007143 Date 10.03.2018	Analysis Start 04.12.2018 Analysis End 07.12.2018 Report Issue Date 10.12.2018 Sample Category Water	
	Sample Name Ground Water	Sample Collected By Anacon Representative	Sample Source Dug-well Water
	Sampling Location Khairahi Village	Sampling Date 27.11.2018	Sampling Time 3.40 pm
	Quantity Received 5 Lit. & 250ml		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

 Dr. (Mrs.) S.D. Garway
 (Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-3

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No. 1819/Mon-328-GW-3	Analysis Start 04.12.2018	
	Inward Date 03.12.2018	Analysis End 07.12.2018	
	W.O.NO. EPMPL/SFS/9610007143	Report Issue Date 10.12.2018	
	Date 10.03.2018	Sample Category Water	
Sample Name Ground Water	Sample Collected By Anacon Representative	Sample Source Dug-well Water	Quantity Received 5 Lit. & 250ml
Sampling Location Khairahi Village	Sampling Date 27.11.2018	Sampling Time 3.40 pm	

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
xix.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
xx.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
xxi.	Delta-HCH	µg/l	USEPA 508	0.04	< 0.03
xxii.	Alachlor	µg/l	USEPA 508	20	< 0.03
xxiii.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
xxiv.	Atrazine	µg/l	USEPA 1657	2	< 0.03
xxv.	Butachlor	µg/l	USEPA 508	125	< 0.03
xxvi.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
xxvii.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
xxviii.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xxix.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xxx.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xxxi.	Ethion	µg/l	USEPA 1657	3	< 0.03
xxxii.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xxxiii.	Malathion	µg/l	USEPA 1657	190	< 0.03
xxxiv.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xxxv.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xxxvi.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table – 3.4.12

Test Report No. : ALPL/10122018/490-4

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-4	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name Ground Water	Sample Collected By Anacon Representative	Sample Source Dug-well Water	Quantity Received 5 Lit. & 250ml	
Sampling Location Churwahi Village	Sampling Date 27.11.2018	Sampling Time 4.10 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.12 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.3
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.18
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	408
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.21
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	34.61
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	83.54
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	156.56
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	28.02
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	21.07
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	20.44
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	11.06
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.2

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For ANACON LABORATORIES PVT. LTD



Authorized Signatory

[Signature]
Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-4

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-4	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Churwahi Village	27.11.2018	4.10 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-4

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-4	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Churwahi Village	27.11.2018	4.10 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
xix.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
xx.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
xxi.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
xxii.	Alachlor	µg/l	USEPA 508	20	< 0.03
xxiii.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
xxiv.	Atrazine	µg/l	USEPA 1657	2	< 0.03
xxv.	Butachlor	µg/l	USEPA 508	125	< 0.03
xxvi.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
xxvii.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
xxviii.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xxix.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xxx.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xxxi.	Ethion	µg/l	USEPA 1657	3	< 0.03
xxxii.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xxxiii.	Malathion	µg/l	USEPA 1657	190	< 0.03
xxxiv.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xxxv.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xxxvi.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
 Dr. (Mrs.) S.D. Garway
 (Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table - 3.4.12

Test Report No. : ALPL/22102018/401-3

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-271-GW-3	Analysis Start	16.10.2018
	Inward Date	15.10.2018	Analysis End	20.10.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	22.10.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsualal Village	10.10.2018	2.40 P.M.		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	7.82 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.24
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	Min. 1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	459
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.36
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	42.17
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	162.94
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	183.22
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	54.76
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	11.28
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	27.43
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	9.16
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS 3025 (Part 2)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS 3025 (Part 2)	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS 3025 (Part 2)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.3

NOTES : • Please see watermark "Original Test Report" in blue color to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • *Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'cfu' indicates colony forming units • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' Indicates detection limit of instrument/method and shall be considered as 'absent'. • Result for test no. 7 is not relevant. • 'NT' indicates not tested as sample failed to establish safety concerns. • ND-Not Detected

For ANACON LABORATORIES PVT. LTD.

Authorized Signatory
Dr. (Mrs.) S. B. Garway

(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/22102018/ 401-3

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-271-GW-3	Analysis Start	16.10.2018
	Inward Date	15.10.2018	Analysis End	20.10.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	22.10.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By Anacon Representative	Sample Source	Quantity Received	
Ground Water		Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsualal Village	10.10.2018	2.40 P.M.		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)		Test Result
				Acceptable Limit	*Permissible Limit	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.01
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	1.0	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	MPN/100 ml	IS 1622	---	---	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 1622	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

[Signature]
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/22102018/ 401-3

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-271-GW-3	Analysis Start	16.10.2018
	Inward Date	15.10.2018	Analysis End	20.10.2018
	W.O.NO.	EPMPL/SFS/96100071 43	Report Issue Date	22.10.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dug-well Water	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsualal Village	10.10.2018	2.40 P.M.		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	As per IS 10500 : 2012 (Drinking Water - Specification)	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES : • Please see watermark "Original Test Report" in blue color to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 90 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • *Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'cfu' indicates colony forming units • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • Result for test no. 7 is not relevant. • 'NT' indicates not tested as sample failed to establish safety concerns. • ND-Not Detected.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway

(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.14

Test Report No. : ALPL/10122018/490-5

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-5	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	6.81 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.6
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.28
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	439
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.26
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	42.58
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	104.76
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	180.51
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	42.19
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	18.27
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	21.43
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	9.72
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	1.1

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

ANACON LABORATORIES PVT. LTD.

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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-5

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-5	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform	mg/l	APHA 6232	0.1	No relaxation	Absent
	b. Dibromochloromethane			0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	IS 3025 (Part 43) :1001	0.001	0.002	< 0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

NOTES: ● Please see watermark 'Original Test Report' to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● MPN indicates most probable number. ● 'mg/l' is equivalent to 'ppm'. ● 'µg/l' is equivalent to 'ppb'. ● '<' indicates detection limit of instrument/method and shall be considered as 'absent'. ● ND-Not detected ● Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-5

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-5	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Railla Village	27.11.2018	2.20 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no 7 is not relevant.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.15

Test Report No. : ALPL/10122018/490-6

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-6	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Amiliya Village	27.11.2018	4.05 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	6.94 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.8
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.19
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	463
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.32
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	37.46
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	132.58
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	192.86
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	53.29
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	14.52
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	16.17
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	11.28
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
28.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	< 0.1

NOTES: • Please see watermark 'Original Test Report' to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • #Permissible limit in absence of an alternate source for drinking water. • MPN indicates most probable number. • 'mg/l' is equivalent to 'ppm'. • 'µg/l' is equivalent to 'ppb'. • '<' indicates detection limit of Instrument/method and shall be considered as 'absent'. • ND-Not detected • Result for test no. 7 is not relevant.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

Signature
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-6

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-6	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name Ground Water	Sample Collected By Anacon Representative	Sample Source Dugwell	Quantity Received 5 Lit. & 250ml	
Sampling Location Amiliya Village	Sampling Date 27.11.2018	Sampling Time 4.05 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane	mg/l	APHA 6232	0.1	No relaxation	Absent
	c. Bromodichloromethane			0.06	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as C ₆ H ₅ OH)			mg/l	IS 3025 (Part 43) :1001	0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-6

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-6	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Amiliya Village	27.11.2018	4.05 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
Dr. (Mrs.) S.D. Garway
(Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Table 3.4.16

Test Report No. : ALPL/10122018/490-7

Page 1 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-7	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	27.11.2018	4.25 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
1.	pH value	-	IS 3025 (Part 11)	6.5 to 8.5	No relaxation	8.16 at 25°C
2.	Turbidity	NTU	IS 3025 (Part 10)	1	5	0.9
3.	Colour	Hazen units	IS 3025 (Part 4)	5	15	1
4.	Odour	-	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable
5.	Taste	-	IS 3025 (Part 8)	Agreeable	Agreeable	Agreeable
6.	Iron (as Fe)	mg/l	IS 3025 (Part 2)	1.0	No relaxation	0.32
7.	Free residual chlorine	mg/l	IS 3025 (Part 26)	Min. 0.2	1	< 0.1
8.	Total dissolved solids	mg/l	IS 3025 (Part 16)	500	2000	482
9.	Fluoride (as F)	mg/l	IS 3025 (Part 60)	1.0	1.5	0.39
10.	Cyanide (as CN)	mg/l	IS 3025 (Part 27)	0.05	No relaxation	< 0.005
11.	Chloride (as Cl)	mg/l	IS 3025 (Part 32)	250	1000	42.17
12.	Total Alkalinity (as CaCO ₃)	mg/l	IS 3025 (Part 23)	200	600	146.92
13.	Total hardness (as CaCO ₃)	mg/l	IS 3025 (Part 21)	200	600	182.42
14.	Calcium (as Ca)	mg/l	IS 3025 (Part 40)	75	200	46.29
15.	Magnesium (as Mg)	mg/l	IS 3025 (Part 46)	30	100	16.24
16.	Sulphate (as SO ₄)	mg/l	IS 3025 (Part 24)	200	400	28.73
17.	Nitrate (as NO ₃)	mg/l	APHA Method	45	No relaxation	8.19
18.	Copper (as Cu)	mg/l	IS 3025 (Part 2)	0.05	1.5	< 0.03
19.	Manganese (as Mn)	mg/l	IS 3025 (Part 2)	0.1	0.3	< 0.05
20.	Mercury (as Hg)	mg/l	IS : 3025 (Part 48)	0.001	No relaxation	ND
21.	Cadmium (as Cd)	mg/l	IS : 3025 (Part 41)	0.003	No relaxation	< 0.001
22.	Selenium (as Se)	mg/l	IS : 3025 (Part 56)	0.01	No relaxation	< 0.001
23.	Arsenic (as As)	mg/l	IS : 3025 (Part 37)	0.01	No relaxation	< 0.01
24.	Aluminium (as Al)	mg/l	IS : 15302	0.03	0.2	< 0.005
25.	Lead (as Pb)	mg/l	IS : 3025 (Part 47)	0.01	No relaxation	< 0.001
26.	Zinc (as Zn)	mg/l	IS 3025 (Part 2)	5	15	< 0.1

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For ANACON LABORATORIES PVT. LTD



Authorized Signatory

S.D. Garway
Dr. (Mrs.) S.D. Garway
(Director - Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-7

Page 2 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-7	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	27.11.2018	4.25 pm		

TEST RESULTS

Sr. No	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit #	
27.	Nickel (as Ni)	mg/l	IS 3025 (Part 2)	0.02	No relaxation	< 0.01
28.	Total Chromium (as Cr)	mg/l	IS 3025 (Part 2)	0.05	No relaxation	< 0.03
29.	Barium (as Ba)	mg/l	Annexure F of IS 13428	0.7	No relaxation	< 0.01
30.	Ammonia (as N)	mg/l	IS 3025 (Part 34)	0.5	No relaxation	< 0.1
31.	Sulphide (as H ₂ S)	mg/l	IS 3025 (Part 29)	0.05	No relaxation	< 0.03
32.	Chloramines (as Cl ₂)	mg/l	APHA 4500-Cl ₂ G	4.0	No relaxation	< 0.05
33.	Molybdenum (as Mo)	mg/l	IS 3025 (Part 2)	0.07	No relaxation	< 0.001
34.	Silver (as Ag)	mg/l	Annexure J of IS 13428	0.1	No relaxation	< 0.001
35.	Polychlorinated Biphenyls (PCB)	µg/l	USEPA 508	0.5	No relaxation	< 0.03
36.	Boron (as B)	mg/l	IS 3025 (Part 2)	0.5	2.4	< 0.1
37.	Mineral Oil	mg/l	IS 3025 (Part 39)	0.5	No relaxation	< 0.001
38.	Tri Halo Methane					
	a. Bromoform			0.1	No relaxation	Absent
	b. Dibromochloromethane	mg/l	APHA 6232	0.1	No relaxation	Absent
	c. Bromodichloromethane			0.05	No relaxation	Absent
	d. Chloroform			0.2	No relaxation	Absent
39.	Phenolic compounds (as CaH ₅ OH)			mg/l	IS 3025 (Part 43) :1001	0.001
40.	Anionic detergents (as MBAS)	mg/l	IS 13428:2005 (Annex K)	0.2	1.0	< 0.01
41.	Polynuclear aromatic hydrocarbon (PAH)	µg/l	USEPA : 550	0.1	No relaxation	< 0.03
42.	Total coliform	Per 100 ml	IS 15185	Absent	Absent	Absent
43.	<i>Escherichia coli</i>	Per 100 ml	IS 15185	Absent	Absent	Absent

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For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S. D. Garway
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**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Test Report No. : ALPL/10122018/490-7

Page 3 of 3

Issued To : Essar Power MP Ltd. Mahan, Village - Bandhaura, Post-Karsualal, Tehsil - Mada, Dist - Singrauli, Waidhan-486 886.	Sample Inward No.	1819/Mon-328-GW-7	Analysis Start	04.12.2018
	Inward Date	03.12.2018	Analysis End	07.12.2018
	W.O.NO.	EPMPL/SFS/9610007143	Report Issue Date	10.12.2018
	Date	10.03.2018	Sample Category	Water
Sample Name	Sample Collected By	Sample Source	Quantity Received	
Ground Water	Anacon Representative	Dugwell	5 Lit. & 250ml	
Sampling Location	Sampling Date	Sampling Time		
Karsua Raja	27.11.2018	4.25 pm		

TEST RESULTS

Sr. No.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2	Test Result
44.	Pesticides residues				
i.	Alpha-HCH	µg/l	USEPA 508	0.01	< 0.01
ii.	Beta HCH	µg/l	USEPA 508	0.04	< 0.03
iii.	Delta- HCH	µg/l	USEPA 508	0.04	< 0.03
iv.	Alachlor	µg/l	USEPA 508	20	< 0.03
v.	Aldrin / Dieldrin	µg/l	USEPA 508	0.03	< 0.03
vi.	Atrazine	µg/l	USEPA 1657	2	< 0.03
vii.	Butachlor	µg/l	USEPA 508	125	< 0.03
viii.	Chlorpyrifos	µg/l	USEPA 1657	30	< 0.03
ix.	DDT and its Isomers	µg/l	USEPA 508	1	< 0.03
x.	Gamma - HCH (Lindane)	µg/l	USEPA 508	2	< 0.03
xi.	2,4-Dichlorophenoxyacetic acid	µg/l	USEPA 1657	30	< 0.03
xii.	Endosulphan	µg/l	USEPA 508	0.4	< 0.03
xiii.	Ethion	µg/l	USEPA 1657	3	< 0.03
xiv.	Isoproturon	µg/l	USEPA 1657	9	< 0.03
xv.	Malathion	µg/l	USEPA 1657	190	< 0.03
xvi.	Methyl Parathion	µg/l	USEPA 1657	0.3	< 0.03
xvii.	Monocrotophos	µg/l	USEPA 1657	1	< 0.03
xviii.	Phorate	µg/l	USEPA 1657	2	< 0.03

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REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. Sample complies with IS:10500:2012, for test conducted, indicating that it is fit for drinking purpose with respect to tested parameters.

For ANACON LABORATORIES PVT. LTD.



Authorized Signatory

S.D. Garway
 Dr. (Mrs.) S.D. Garway
 (Director- Labs)

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

4.0 Results And Discussion about quality

The results of ground water analysis are discussed as per findings and its significance over environment and human being. Water quality & certain common characteristics have been described in following paragraphs:

4.1 Chemical Parameters

□ Colour, Odour and Taste

Presence of these parameters gives some hints regarding source of water sample. These parameters are checked at site with help of relevant sense-organs. All Eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) are colorless in appearance respectively.

All Eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) were collected for Odor test have represented no any objectionable odour.

Any salty or metallic taste in water samples comes only if salts or metals are present in high concentration. Here, all eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have agreeable taste.

□ pH Value

pH is an important parameter, for drinking purpose it indicates the water is going to affect the mucous membrane and/or water supply system and for non-drinking purpose it indicates the contamination if the values are beyond the given range.

All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have pH values are within desirable range of 6.5 to 8.5 as per IS 10500:2012 standards for drinking water.

• Total Dissolved Solids

Total Dissolved Solids may cause gastro intestinal irritation if water is being used for drinking purposes and its concentration is out of norms. There is no abnormality have found in water sample regarding dissolved solids concentrations.

All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have Dissolved Solids which are well below prescribed limit of 2000 mg/l as given in IS10500:2012.

• Chlorides

Corrosion & palatability nature of water are affected if the Chlorides values are beyond the prescribed limits. All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have Chlorides concentrations which well below the desirable

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

limit of 250 mg/l as prescribed in IS 10500:2012.

- **Sulphates**

High values of Sulphates may cause gastro intestinal irritation with Magnesium & Sodium. All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have Sulphate concentration against desirable limit of 200 mg/l as prescribed in IS 10500:2012.

- **Total Hardness**

Hardness causes encrustation in water supply structure in case of high values of water samples.

All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have hardness values are less than permissible limit of 600 mg/l as prescribed in IS 10500:2012

4.2 Health Related Parameters

- **Fluorides**

Fluoride concentration above 2.0 mg/l is harmful and can cause bone fluorosis. All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have fluoride content which are lower than desirable limit of 1.0 mg/l as given in IS 10500:2012.

- **Nitrate**

Nitrate value should not cross the desirable limit as it can cause a serious disease in human being known as Methaemoglobinemia. Nitrate is usually contributed by excessive use of fertilizer and / or explosives and occasionally from minerals of the strata.

All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have nitrate concentrations are much below the desirable limit of 45 mg/l.

- **Iron**

Beyond the desirable limit, Iron affects the taste and odour of water and promotes iron bacteria. All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have Iron concentrations are less than desirable limit of 0.3 mg/l.

- **Heavy Metals**

Heavy metals produce astringent taste if its concentration crosses the desirable limits. In alkaline water, metal concentration, can be present in the form of hydroxides, most of which are insoluble. Heavy metals like Copper, Zinc, Manganese, Aluminum, Boron and other trace elements in all water samples are either absent or wherever present, were below their respective permissible limits.

**GROUNDWATER MONITORING, WATER LEVEL DEPLETION REPORT FOR
ESSAR POWER MP Ltd AT BANDHAURA, DISTRICT-SINGRAULI, (M.P.)**

Presence of toxic metals beyond desirable limits makes the water toxic and such waters are hazardous for health of human being. Toxic heavy metals like Cadmium, Lead, Arsenic, Hexavalent Chromium, Mercury etc. were either below their respective detectable levels or wherever present were below or equal to the permissible limits.

- **Total Coliform**

The purpose of the total coliform counts in water bodies was to estimate the number of coliforms in water samples as an index of magnitude of biological contamination. Total coliform counts in water bodies are an important parameter for checking possible sewage contamination. The presence of coliform organism are taken as indication that pathogenic organism may also present and absence of coliform organism is taken as an indication that water is free from diseases producing organisms.

All eight ground water samples (GW-1, GW-2, GW-3, GW-4, GW-5, GW-6, GW-7, GW-8) have the zero loads of total coliform and coliform

5.0 Result and Conclusion:

- There is no use of groundwater in plant premises for any process, thus impact on groundwater levels due to plant activity is null.
- From the graphical representation it seems that there is slight depletion in water levels but it's due to difference in rainfall over the years.
- As far as water quality is concern it observed that there is no change in quality of water due to plant activities and it's observed over the year 2018.
- Karsualal village is nearest to Ash pond Location and quality report of this village shows that there is no contamination of Groundwater due to Ash Pond i.e. handling of Ash is properly done by plant management.
- Thick green cover in the plant premises is developed and its work as a barrier for runoff water.
- Currently rooftop rainwater is channelized through drains and discharge into water reservoir outside the plant boundary, thus rainwater is harvested and used for greenbelt development.



Annexure-3

**SWAN ENVIRONMENTAL PVT. LTD.**

An ISO 9001 : 2015 Certified Company

CIN: U92110TG1988PTC008656

Plot No: 922 & 935, Swami Ayyappa Co-Op Society, Madhapur,
Hyderabad - 500081, Telangana, India.

Ph: +91 - 40 - 4021 6184 / 85, Fax : 40216183.

Email : info@swanenviron.com ; Website : www.swanenviron.com

Date: 16/03/2016

To

M/s. Essar Power MP Ltd

Village - Bandhaura,

Post-Karsualal, Tehsil-Mada, Dist-Singrauli,

Waidhan-486886 (Madhya Pradesh)

Sub: Installation of 4 nos. CAAQM station at Essar Power MP Ltd.

Dear Sir,

This is to inform you that OCEMS system and 4 nos. CAAQM station at Essar Power MP Ltd. Bandhaura, Waidhan, District Singrauli (MP) has been installed 02/10/2014.

Since MPPCB server was not ready at that time to hook up the same.

4 nos. CAAQM system was hooked up with MPPCB and CPCB on 16/03/2016 after server readiness from MPPCB.

This is for your kind information and record.

Thanking you,

**N.Tirupathi**

Yours sincerely,

For Swan Environmental Pvt. Ltd.

Annexure-4

Essar Power M. P. Limited

Essar Power M. P. Limited
 Village: Bandhora, Karsualal
 Tehsil - Waidhan-486886
 Madhya Pradesh, India.
 Ph : 7509061540/8966902954
 Fax :
 CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853
 CST NO : 23637305853
 ECC NO : NIL
 S.TAX REG NO : AABCE6086CST001
 RANGE : WAIDHAN
 PAN NO : AABCE6086C
 GST NO: 23AABCE6086C1ZZ

ESSAR**PURCHASE ORDER**

PO NO: EPMP/INS/9310020566

DATE : 18.07.2018

SUPPLIER'S NAME & ADDRESS - VENDOR CODE 183546

Company **SWAN TECHNICAL SERVICES PVT LTD**
 PLOT NO 922 & 935 , SWAMI AYYAPPA CO-OP SOCIETY
 MADHAPUR
 500061
 Andra Pradesh,India.
 Ph. :91-040-40216184
 Fax :
 E-mail :service.enviro@swanenviron.in
 GST Number: 36AAWCS7296M1Z2

PLEASE SUPPLY THE FOLLOWING MATERIALS

As per the terms & conditions mentioned below.
 General terms & Conditions mentioned at the end,
 forms a part of purchase order.
 Please acknowledge receipt of the Purchase Order
 and send your unconditional acceptance to abide
 the terms and conditions of the order.

Contact for this PO :

Mr. Pankaj Sharma
 Tel. : 91-8959591713
 Fax. : 91-
 Email : Pankaj.Sharma2@Essarpower.Co.In

Your Person Responsible : Mr. Kishore. K Telephone : +91 9642225277
 Email : kishore.k@swanenviron.com;;

With reference to your offer ref: 255 dated: 10.07.2018 and subsequent communication with you, we are pleased to issue a Purchase Order for Essar Power M.P. Limited.

OUR PR REF NO. 9210022230

Note:

The Purchase Order price is based on unit rates, which shall remain firm till the execution of complete order and shall not be subjected to any increase or escalation whatsoever for the duration of order. However, statutory variation regarding change in Tax norms, Duties, etc if any, shall be adjusted on either side.

It is mandatory to affix sticker mentioning with below details on all materials.
 EPMP reserve the rights to reject the material if found any material without sticker at the time of receiving.

PO No. Dt
 Material code :
 Item :

SR.NO.	MAT.CODE	QTY	UNIT	RATE/UNIT (INR)	AMOUNT (INR)
	00010 900013304	2	NoOfUnits	225,000.00	450,000.00
	CALIBRATOR,REMOTE,12VDC				
	HSN/SAC ID:				
			Discount(%)	-5.00 %	-22,500.00
			Pckg & fwd (%)	2.00 %	8,550.00
			GST		78,489.00
			Net value inclus	218,025.00 /1NO	514,539.00

Applicable Taxes & Duties : Integrated GST: 18%

CALIBRATOR
 TYPE : REMOTE
 POWER SUPPLY : 12 VDC

CALIBRATOR UNIT COMPLETE ASSEMBLY

.....contd. Page 1 of 9

75

Essar Power M. P. Limited Essar Power M. P. Limited Village: Bandhora, Karsualal Tehsil - Waidhan-486886 Madhya Pradesh, India. Ph : 7509061540/8966902954 Fax : CIN : U40100DL2005PLC201961		VAT/LST NO : 23637305853 CST NO : 23637305853 ECC NO : NIL S.TAX REG NO : AABCE6086CST001 RANGE : WAIDHAN PAN NO : AABCE6086C GST NO: 23AABCE6086C1ZZ		 PURCHASE ORDER	
		PO NO: EPMP/INS/9310020566		DATE : 18.07.2018	
SUPPLIER'S NAME : SWAN TECHNICAL SERVICES PVT LTD					
SR.NO.	MAT.CODE	QTY	UNIT	RATE/UNIT (INR)	AMOUNT (INR)
DESCRIPTION					
TYPE : REMOTE UNIT POWER SUPPLY : 230 VOLT / ALL CONVERSIONS SHALL BE INTEGRAL TO THE UNIT) COMMUNICATION PORT: ETHERNET/RS485/RS232/GPRS/GSM PANEL:POWDER COATED CRCA,WALL MOUNTED GAS PARTS :06(SAMPLE IN,SAMPLE OUT,ZERO/N2,SO2,NO AND CO) ACCESSORIES: RELAY UNITS AND FOR REMOTE CALIBRATION/ VERIFICATION OF THE CEMS SYSTEM FROM OFFLINE LOCATION THROUGH BROADBAND INTERNET ALONG WITH DATA ACQUISITION, FULLY LICENSED SOFTWARE FOR COMMUNICATION WITH POLLUTION CONTROL BOARD					
Please deliver the above materials (00010 to 00010) Essar Power M. P. Limited Essar Power M. P. Limited Village: Bandhora, Karsualal Tehsil - Waidhan, Singrauli 3100-Central Store					
Total net value incl. tax INR					514,539.00
Rupee five hundred fourteen thousand five hundred thirty-nine Only					
Price basis : FOR Free on rail / road Bandhoura Payment terms : Against P.I on readiness material; Curr. INR					
Pricing types F.O.R. Bandhoura- central store					
Deadlines Goods shall be delivered on OR before 10.08.2018.					
In case of SELLER fails to deliver the material strictly within the delivery schedule, OWNER shall have right to ask them to dispatch the same by any faster / costlier mode of transport. The entire additional expenditure involved will therefore, shall be borne by SELLER.					
.....contd. Page 2 of 9					

Essar Power M. P. Limited

Essar Power M. P. Limited
 Village: Bandhora, Karsualal
 Tehsil - Waidhan-486886
 Madhya Pradesh, India.
 Ph : 7509061540/8966902954
 Fax :
 CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853
 CST NO : 23637305853
 ECC NO : NIL
 S.TAX REG NO : AABCE6086CST001
 RANGE : WAIDHAN

PAN NO : AABCE6086C
 GST NO: 23AABCE6086C1ZZ



ESSAR
PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

SUPPLIER'S NAME : SWAN TECHNICAL SERVICES PVT LTD

Terms of delivery

The goods shall be delivered at the following address:

Essar Power M.P. Limited
 Central Material Store
 Attention: Mr. Vijay Kashyap (M. +91 7509061568)
 Village # Bandhoura , Post- Karsualal
 Distt. Singrauli , M.P.-486886
 E-mail ID: vijay.kashyap@essar.com

Following ORIGINAL documents are to be sent along with delivery of goods.

1. Tax / Commercial / Retail Invoice, whichever is applicable
2. Excise Invoice (Duplicate for Transporter)
3. Delivery Challan
4. Packing List
5. Lorry Receipt (Consignee Copy)
6. Quality Assurance Certificates
7. Inspection Reports
8. Guarantee / Warranty Certificate

Shipping instructions

SELLER shall intimate OWNER with dispatch details through E-mail, Telefax/Telephone immediately after dispatch of goods.

Transportation:

Charges towards transportation (Including Service Tax thereon) are included in Basic PURCHASE ORDER value.

Lorry receipt (LR/GC Note) to be submitted with goods & must indicate Person liable to pay Service Tax (PLST) as CONSIGNOR. This is a statutory requirement. In case of non-compliance, payment will be released after correction in LR by SELLER/Transporter.

SELLER shall use any of the below listed transporters / courier agencies ONLY for delivery of ordered goods OR for sending the documents related to this Purchase Order:

- # Associated Road Carriers Ltd. (ARC)
- # TCI-XPS / TCI-Freight
- # GATI-KWE
- # Safexpress
- # DTDC Cargo
- # DTDC Courier

Essar Power M. P. Limited**Essar Power M. P. Limited**

Village: Bandhora, Karsualal

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

Fax :

CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853

GST NO : 23637305853

ECC NO : NIL

S.TAX REG NO : AABCE6086CST001

RANGE : WAIDHAN

PAN NO : AABCE6086C

GST NO. 23AABCE6086C1ZZ

ESSAR
PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

SUPPLIER'S NAME : SWAN TECHNICAL SERVICES PVT LTD

First Flight Courier

Statutory Requirement: As per RTO and our safety & security requirements, the vehicle carrying goods should have following original documents, without which the vehicle will not be allowed to enter into the site.

- Valid RC Book
- Valid Insurance papers
- Valid PUC certificate
- Valid Driving License of Driver
- Spare wheel in usable condition

Terms of payment

100% PAYMENT AGAINST PRO FORMA INVOICE BASIS AFTER READINESS OF MATERIALS.

Following documents to be submitted for payment via email after dispatch of materials :

- 1) SIGNED PI copy as per PO.

Following ORIGINAL documents are to be sent along with delivery of goods for records & enable OWNER to process the payment in time:

1. Tax / Commercial / Retail Invoice, whichever is applicable
2. Excise Invoice (Duplicate for Transporter)
3. Delivery Challan
4. Packing List
5. Lorry Rceipt (Consignee Copy)
6. Quality Assurance Certificates
7. Inspection Reports
8. Guarantee / Warranty Certificate

SELLER shall send a scan copy of such documents to BUYER - Mr. Pankaj Sharma, E-Mail ID: PANKAJ.SHARMA2@ESSAR.COM immediately after dispatch of goods for record.

Tax Invoice shall be prepared on the following name:

Essar Power M.P. Limited
Village-Bandhoura , Post-Karsualal
Distt. Singrauli , M.P.-486886
India.

Guarantees

The SELLER shall guarantee for their goods against any defect/failure which arise due to faulty material, workmanship or design (except material or design furnished by OWNER). The guarantee shall expire after eighteen

Essar Power M. P. Limited

Essar Power M. P. Limited

Village: Bandhora, Karsualal

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

Fax :

CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853

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ESSAR
PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

SUPPLIER'S NAME : SWAN TECHNICAL SERVICES PVT LTD

(18) months from the date of commissioning OR twenty-four (24) months from the date of completion of delivery of goods, whichever is earlier.

If during the guarantee period, any goods are found defective, the SELLER shall promptly replace/rectify at its own cost (Including the cost of Transportation, dismantling & re-installation).

Packing and Forwarding

Material shall be sent in transit worthy packing and any damage during transit of material (reasons owing to improper packing) shall be the sole responsibility of the SELLER. The damaged goods shall be repaired / replaced by SELLER at FOC.

Charges towards Packing, Forwarding and Loading at SELLER / SUB-SELLER's Shop / Warehouse are included in Basic PURCHASE ORDER value.

VAT/CST/Service Tax

IGST @ 18% IS INCLUDED IN THE ORDER VALUE.

Insurance

Transit Insurance shall be in scope of Essar Power M.P. Ltd.

Inspection

Inspection of goods shall be carried out at our site store. Seller shall, however, repair or replace damaged / rejected goods to the satisfaction of owner at free of cost.

Payment of Liquidated Damages

Liquidated Damages (LD) is not applicable for this PURCHASE ORDER. However supplier shall ensure timely delivery of the material as per delivery date mentioned in the purchase order. For delays beyond four (04) weeks from the agreed delivery schedule, OWNER reserves the right to accept or reject the GOODS.

PO Terms & Conditions

Post order Co-ordination/Communication Procedure:

Purchase Manager for this Purchase Order is Mr. Arup Banerjee (M. +91 7509061524) / E-Mail ID: Arup.Banerjee1@essar.com

Buyer for this Purchase Order is Mr. Pankaj Sharma.
SELLER shall send all correspondence at the following address:

Essar Power M.P. Limited
Attention: Mr. Pankaj Sharma (Purchase Dept.)

Essar Power M. P. Limited

Essar Power M. P. Limited

Village: Bandhora, Karsualai

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

Fax :

CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853

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PAN NO : AABCE6086C

GST NO: 23AABCE6086C1ZZ



ESSAR

PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

SUPPLIER'S NAME : SWAN TECHNICAL SERVICES PVT LTD

Village- Bandhoura , Post-Karsualai
 Distt. Singrauli , M.P. - 486886

Mobile No. +918959591713

E-Mail ID: Pankaj.Sharma2@essar.com

E & OE.**For Essar Power MP Limited****Authorised Signatory.**

Essar Power M. P. Limited

Essar Power M. P. Limited

Village: Bandhora, Karsualal

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

Fax :

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GST NO : 23AABCE6086C1ZZ

ESSAR
PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

GENERAL TERMS & CONDITION FOR PURCHASE ORDER

Unless specifically stated in this contract, the following clauses shall form the terms and the conditions of the PURCHASE ORDER NO. 9310020566 (hereafter referred as 'P.O.')

GENERAL TERMS:

1. The terms and conditions of this P.O. constitute the contract between SWAN TECHNICAL SERVICES PVT LTD and Essar Power MP Limited and any variation there in will be binding only if confirmed in writing by the authorized representative of the company.

ACCEPTANCE:

2. Non acceptance of this order shall be conveyed to the Company with in 7 days of its receipt by the Vendor. In case of deviation P.O. terms at the time of delivery, the Company reserves the right to cancel the order and procure the materials from alternate source. All extra cost incurred by the Company in procuring the materials from alternate source will be debited to the Vendor's account.

Price:

3. Prices will remain firm till completion of this contract.

4. Bank charges: In case of payment "Through Bank", bank charges shall be borne by respective accounts. Vendor's bank charges shall be borne by Vendor and Company's charges shall be borne by Company.

5. 'C' Form: Form 'C' shall be issued by the Company on quarterly basis. If the payment mode is through bank, bank shall not be advised to collect 'C' forms along with payment.

Delivery:

6. Supply of materials must accompany delivery challan /delivery note mentioning complete order no., description of items, size, item code, quantity Gross / Netweight, etc. Other wise it may not be accepted by the Company.

Vendor shall take necessary confirmation from the Company before dispatch of materials.

7. Delivery time is the essence of this contract and should be rigidly followed. In the event of delay, the Company reserves the right to cancel the order without any notice to the Vendor & purchase the materials from alternate source. Any extra cost/cost overrun will be debited to Vendor's account.

8. The company reserves the right to postpone the delivery of materials from the Vendor and in such an event, the Vendor shall store the materials in good condition till the further instructions from the Company for delivery of materials.

9. Dispatch documents must be sent in advance to the Company, otherwise demurrage, if any, will be to Vendor's account.

10. If vendor fails to deliver material as per delivery date mentioned in the P.O., Company reserves the right to reject the material.

Expenditing & INSPECTION:

11. The materials delivered are subject to final inspection and approval by the Company regarding quantity, quality and specifications. Vendor shall provide guarantee/test certificate/compatibility/ interchangeability or materials supplied and make available such facilities for the inspection as required to confirm the product specifications.

12. Rejected materials shall be taken back by the Vendor with in 20 days of the intimation of rejection by the Company. In failure of above, the Company reserves all rights to dispatch the material to the Vendor on 'TO PAY' basis or to dispose the rejected material. Such rejected materials shall be at Vendor's risk from the time of rejection and the company shall not be liable for any shortages/ quality deterioration for any reason.

Submission AND PAYMENT OF BILL:

13. All invoices are to be prepared indicating details of P.O. and along with signed challans in duplicate. One set of original copies should be sent to Stores Department & one set of duplicate copies should be sent to Purchase department.

INDEMNITY:

14. Vendor shall at all times, indemnify the Company against all claims which may be paid, including liability for payment of any statutory compensation on account of accident or death of any person or persons entering the premises of the Company for and on behalf of the purpose of delivering, installing, inspecting, repairing or estimating supplies of material or work done against this P.O.

GUARANTEES/WARRANTIES:

15. Materials supplied against this P.O. shall be guaranteed for performance for a period of 12 months from the date of receipt or 18 months from the date of supply, whichever is earlier.

SHIPPING TERMS:

16. Unless explicitly agreed upon differently in writing, materials shall be delivered to the Company as per INCO terms mentioned in this PO in conformity with the INCOTERMS 2000 (or latest edition) including loading & unloading cost, P & F charges, etc.

Essar Power M. P. Limited

Essar Power M. P. Limited

Village: Bandhora, Karsualal

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

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ESSAR

PURCHASE ORDER

PO NO: EPMP/INS/9310020566

DATE : 18.07.2018

LIQUIDATED DAMAGES (LD) FOR LATE DELIVERY:

17. Liquidated Damages(L.D.):Company reserves the right to levy L.D.@½% of the order price per week or part there of by which delivery has been delayed, subject to maximum upto 5% of the order price.

PACKAGING AND FORWARDING:

18. Materials shall be packed suitable to with stand transit handling.

19. Transporter:Materials shall be booked by recommended transporter (V-Trans/TCI, LaljiMunji/ARC/XPS Cargo/Safe Express). In case of non-availability of the said transporter,material to be booked by any Bank approved transporter in consultation with Purchase Department.

DISPUTE SETTLEMNT:

20. And dispute concerning to this PO shall be settled through arbitration as per the Arbitration and Conciliation Act, 1996 as may be amended from time to time and place of arbitration shall be under the jurisdiction of Mahan

INSURANCE & TAXES:

Excise duty shall be paid(if applicable)on production of original gatepass.All taxes and duties will be paid on submission of documentary evidences only.

22. Vendor shall be responsible to intimate to Insurance Company mentioned in this PO directly, before dispatch of materials. This is applicable if the insurance is in the scope of the Company.

23. In case,where freight is on 'TO PAY' basis, the freight shall be paid extra at actual, subject to production of documentary evidences (LR copy &freight receipts) upto max 1% of basic order value.

FORCE MAJEURE:

24. Any delay in or failure of performance of this PO by either party hereto, shall not constitute defaults by such party or give rise to any claim for damages, if, and to the extent of such delay or failureof performance is caused by acts of God, war, invasions, revolution, civil commotion, flood, severe earthquake, typhoon, cyclones, plague and epidemic.

25. This PO shall be binding on and ensure to the benefit of the Company and Vendor and to their respective heirs, executors, administrators, successors and assigns, but neither the Company nor the Vendor shall assign this PO or any portion thereof, or any benefit or money accruing to it there under, without the written consent of the other party. However, it is clarified that the Company shall assign this PO to any of its Group Company(ies) without written consent of the Vendor.

26. Where special conditions are stated in the PO, those conditions shall apply equally with the general terms and conditions shown here in except that where there is any inconsistency between the general and special conditions, the special conditions shall apply.

27. Road permit will be issued by the Company, if required, to the Vendor. Road permit shall be used with-in specified time period as mentioned on road permit. Vendor has to keep the proper accounting of the same. In case of missing / expiry of any road permit even ransit, Vendor will be sole responsible for the same and appropriate recovery will be made from their dues.

Essar Power M. P. Limited

Essar Power M. P. Limited

Village: Bandhora, Karsualal

Tehsil - Waidhan-486886

Madhya Pradesh, India.

Ph : 7509061540/8966902954

Fax :

CIN : U40100DL2005PLC201961

VAT/LST NO : 23637305853

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PAN NO : AABCE6086C

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ESSAR
PURCHASE ORDER

PO NO: EP MPL/INS/9310020566

DATE : 18.07.2018

ANNEXURE : CONTRACTUAL CLAUSES - LOW RISK THIRD PARTIES:

1. SWAN TECHNICAL SERVICES PVT LTD is and shall remain in compliance with all relevant laws applicable to the services [he/she/it] shall perform under this Agreement including all relevant anti-corruption laws.

2. SWAN TECHNICAL SERVICES PVT LTD shall not, and nor shall any of its officers, employees, shareholders, representatives or agents ("Associated Parties") directly or indirectly, either in private business dealings or in dealings with the public sector, offer, give or agree to offer or give (either itself or in agreement with others) any payment, gift or other advantage (whether or not by using any payments under the Agreement) with respect to any matters which are the subject of this Agreement which (i) would violate any anti-corruption laws or regulations applicable to SWAN TECHNICAL SERVICES PVT LTD or [Company], (ii) is intended to or does, influence any person to act or reward any person for acting in breach of an expectation of good faith, impartiality or trust, or which it would otherwise be improper for the recipient to accept, (iii) is made to or for a Public Official with the intention of influencing such a person and obtaining or retaining an advantage in the conduct of business, or (iv) which a reasonable person would otherwise consider to be unethical, illegal or improper.

3. Without prejudice to clause [Termination], in the event company Reasonably suspects there to have been a breach of clauses [Anti Corruption clauses] of this agreement, [company may terminate the Agreement immediately upon giving notice in writing to the SWAN TECHNICAL SERVICES PVT LTD

Annexure-5



SWAN TECHNICAL SERVICES PVT. LTD.,

(Group of Swan Environmental Pvt. Ltd., ISO 9001 : 2015 Certified Company)

1-B, First Flore, SWAN AALAYAA, Plot. No. 922 & 935, Swami Ayyappa Co-Op Society, Madhapur, Hyderabad - 500 081, Telangana, India. Phone : +91-40-40216184 / 85, Fax : +91-40-40216183.

Email : service.enviro@swanenviron.in Website : www.swanenviron.com

INSTALLATION / SERVICE REPORT

Customer Address : M/S ESSAR POWER M.P

Contact Person : Mr. Vijaykant Singh Designation : D.O. M

Phone No. : 750 9060216 Extention : _____

Mail Id. : _____

Product Name : CEMS Remote check Unit Model : _____

Serial No. : _____ Warranty : YES / NO

Short Shipment : _____

Purpose of visit : Installation and configuration of CEMS Remote check unit 02 No. (CEMS 01 and CEMS 02) ON 25/07/19, 02/08/19 and 03/08/19

Action Taken : Completed the mounting of 02 No. Remote check unit and gas lines connection Done. connected cylinder's for both unit, and cross check the all connections. then configured both units in CCR P.C with

ESSAR Network and then checked in Remote found all solenoid valve's operating properly and gases. Remarks : Sequensly pass through units. Now 02 No. units Remote checked. Installation and configuration Done.

Engineer Signature : Pushpendra Patel

Name : Pushpendra Patel

Date : 03/08/19

Customer Signature : V.K. Singh

Name & Designation : V.K. Singh

Office Seal : 3/8/19



Ref. No. : EPML/LA/3917A/10
Dated : 29th March, 2017

Regional Officer
MPPCB,
D-2, Russian Complex,
Vindhyanagar, Singrauli
M.P.-486885

Essar Power M.P. Limited
Village: Bandhora,
Post Karsualal,
Tehsil Mada,
Dist. - Singrauli,
Waidhan - 486 886
Madhya Pradesh,
India

Corporate Identity Number
U40100DL2005PLC201961

T +91 75090 61540 / 89889 02954
www.essar.com

Subject: Ash utilization in low lying area and ash dyke raising

Dear Sir,

With reference to our subject matter we are going to ash utilization in low lying area filling and ash dyke raising. We identified some low lying area inside the plant.

So, we need leveling in identified area in connection to that we have plan the same.

We are making grading and leveling and rolling then we have to laying HDPE sheet on the ground before dumping the ash.

We hereby submit this letter for your information and record please.

Thanking you,

Yours sincerely

For Essar Power M.P. Ltd.



Essar Power M.P. Limited
Registered Office : Ground Floor, Hotel Concierge Boutique, A-20, Kailash Colony, New Delhi - 110048, India

STEEL | ENERGY | INFRASTRUCTURE | SERVICES

Annexure 7

Return for the period from April'2014 to March'2019

Name of the Address of the Unit: Essar Power M.P. Ltd., Bandhaura, PO-Karsualal, Distt.-Singrauli (M.P.)

Production Capacity: 2X600 MW

SN	Month	Total Ash Generation	Utilization				% Utilization	Ash Accumulation in Dyke
			Cement Quantity	Bricks Quantity	Others Quantity			
					In ash dyke raising	In reclamation of low lying area & Road construction		
1	2014-2015	127083	68970	1000	7500	43604	95.3	6009
2	2015-2016*	0	0	0	0	0	100.0	0
3	2016-2017	626124	62220	0	119349	323368	80.6	121187
4	2017-2018	632587	118000	3200	185358	82444	61.2	245585
5	2018-2019	562851	173676	2740	204000	105990	86.4	76445

* Plant was not in operation

Ref No: EPMPL / LA / 44-28 / 10

Date: 25 Jan 2018

To,

Shri. Narendra Singh,
Chief Engineer (TPE&CC),
9th Floor, Central Electricity Authority,
R K Puram, Sector - 1
New Delhi - 110066

Dear Sir

Subject: Extension of timeline in Phasing plan for FGD Implementation for Essar Power M.P. Ltd (EPMPL) meeting the revised Environmental Norms Implemented by MoEFCC.

Reference: Minutes of Special TCC Meeting of WRPC held on 28 September 2017 at WRPC, Mumbai - Annexure II

Essar Power M. P. Limited ("EPMPL"), a wholly owned subsidiary of Essar Power Limited ("EPL") is operating 2x600 MW Coal based power project at Bandhora village, Singrauli district, Madhya Pradesh. The Unit-I has been commissioned in April, 2013 and the Unit-II has been synchronized with the grid in August 2017 even though the Main plant package installation was completed and was ready for commissioning by May 2015. Mahan Coal Block was allocated jointly to EPL and Hindalco Industries Limited ("HIL") for meeting the coal requirements of EPMPL and Hindalco Power Project.

Due to cancellation of Mahan coal block by Hon'ble Supreme Court of India, vide its judgment dated 25.08.2014, the fuel availability to the project was affected and the fund disbursement to the project was stopped by the Lenders. Unit-I was unable to generate power and the plant had to be shut-down from October 2014 till April 2016.

EPMPL has secured Tokisud North Coal Block in the Coal Block Auctions conducted by Ministry of Coal in February 2015 but has faced several road blocks for development of the same. EPMPL

has filed a Writ Petition in Delhi High Court for quashing the MoP notification dated 16th April 2015 regarding fixed cost capping and in the alternate prayer to allow EPMPPL to withdraw from the bid of Tokisud north coal block in line with the High Court Judgment dated 9th March 2017 for the case of Monnet and others. The matter is pending before the Delhi High Court and is listed for hearing in Feb 2018.

Since the time, EPMPPL has secured Tokisud coal block there has been only one tender from UPPCL for power procurement on long term basis from coal block based power plant. However, the tendering process was later on cancelled. EPMPPL is not in a position to tie up the balance power on long term basis.

Presently EPMPPL is sourcing the coal through special forwarding e-auction conducted by Coal India Limited ("CIL") / subsidiaries and is operating the Unit-I. EPMPPL has also applied for the long term coal linkage under SHAKTI scheme and shall participate in the upcoming auctions conducted by CIL.

Unit-II was synchronised with grid on 4th August 2017 and yet to achieve the Commercial Operation Date ("COD") due to transmission system constraints (non-completion of 400 kV Mahan-Sipat transmission line and due to insufficient capacity of power evacuation in current LILO arrangement) and the limited availability of coal. The transmission system is expected to be completed by March 2018 to evacuate 1200 MW of power from this project.

Due to all above reasons, the revenue flow of the Mahan power project is totally constrained and the project is severely stressed. In order to comply with the revised environmental norms, as notified by MoEFCC during December 2015, EPMPPL may likely to install FGD & De-Nox system and may require around Rs. 0.7 to 0.8 Crore/MW of the capacity. EPMPPL has already appointed Tractebel Engineering Pvt. Ltd. to identify the suitable technology to be adopted to comply with the revised norms.

However, even after two years of notification, CERC or any other state REC's have not framed/published any regulations to consider this under Change in Law category and provide adequate clarity on the recovery of the expenditure to be incurred.

Due to the above constraints and considering the current status of power sector, the Lenders are not in a position to undertake any additional exposure to fund for the installation of additional system/equipment such as Flue Gas Desulphurization plant & Selective catalytic reduction units etc., to comply with the revised environmental norms.

Considering all these factors, Compliance to meet these revised environmental norms, within the given timeline of December 2020 for EPMPL remains highly challenging.

We kindly request the following:

1. Revise the timelines for FGD implementation of Unit-I to December 2022.
2. Include Unit-II in category-2 (TPPs installed after 1st Jan 2003, up to 31st December, 2016) and indicate the timelines for completion to be March 2023.

Thanking you

Yours faithfully



For Essar Power M.P. Limited

CC:

1. Shri A K Bhalla, Secretary, Ministry of Power, Government of India
2. Shri C K Mishra, Secretary, Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India
3. Shri P.D Siwal, Member (Thermal), Central Electricity Authority
4. Shri A. Balan, Member Secretary, Western Region Power Committee.



2X600 MW Essar Power MP LTD
Equipment Testing Protocol

Date : 25/05/2019
System : Dust Suppression System
Nature of Test : Interlock checking
End Points : Interlock & Protection Checking


This has been checked & verified that Dust Suppression System interlock & protection is healthy and found OK.

Remarks:

Opatidas
.....
EPMPL (C&I)

[Signature]
.....
EPMPL (CHP Operations)

Annexure-9

	<p align="center">2X600 MW Essar Power MP LTD</p> <p align="center">Equipment Testing Protocol</p>
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Date : 13/04/2019
System : Fly Ash Conveying
Nature of Test : Interlock checking
End Points : Interlock & Protection Checking

This has been checked & verified that Fly Ash Silo-1, 2, 3, 4, 5, 6 Bag filter & Vent Fan interlock checking done and found OK.

Remarks:


.....
EPMP (C&I)


.....
EPMP (Operations)

Annexure-10

Revised Order

Item No.03& 04

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No.164/2018
(Earlier O.A.No.276/2013)
(I.A. No. 155/2019,I.A. No. 337/2019 &
I.A. No. 384/2019)

WITH

Execution Application No. 22/2018

IN

O. A. No. 276/2013

Ashwani Kumar Dubey

Versus

Applicant(s)

Union of India &Ors.

Respondent(s)

(Report of the Committee in O.A 164/2018 with I.A. No. 155/2019 for direction dispensing the implementation of the Core Committee's Recommendation. I.A. No. 337/2019 for permitting the applicant to continue to transport coal by road&I.A. No. 384/2019 for quashing the recommendation of the Core Committee)

Date of hearing: 19.07.2019

CORAM:

HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

For Applicant(s):

For Respondent (s):

Ms. Vidushi Garg, Advocate for R-10,11 & 12
Mr. AnipSachthey, Sr. Advocate, Ms. Anjali Chaudhary, Ms. Ria Sachthey, Advocates for NCL
Dr. Ashwani Bhardwaj with Ms. Kavita Rawat, Advocates for R- 33 to 35
Mr. Pradeep Misra, Mr. DaleepDhyani, Advocates for UPPCB
Mr. Rajkumar, Advocates for CPCB
Mr. Sarvjit Pratap Singh, Advocate for R-24&26
Mr. Ranji Srinivasan, Sr. Advocate, Mr. Syed Shahid Hussain Rizvi, Mr. Zeeshan Rizvi, Ms. Sylona Mohapatra, Advocates for R-20, Hindustan Industries

Mr. Ajitesh Sai, Advocate for Essar MP
Mr. Gaurav Dudej, Mr. Sudhanshu Goil,
Advocate for R-25
Mr. Prag Tripathi, Senior Advocate for Grasim
Industries

ORDER

1. **I. A. No. 155/2019** has been filed by Grasim Industries Limited (earlier Aditya Birla Chemical Industries Limited) for modification (which in substance is by way of review) of the order dated 28.08.2018, *inter alia* directing the said applicant to shift the hazardous waste to the TSDF.
2. According to the applicant, it generated hazardous waste in the course of its activities of manufacturing Castic Soda which was stored in its premises since 2010. The said waste has Mercury bearing brine sludge which has to be disposed of as per Rule 16 of the Hazardous Waste Management Rules, 2016. However, the said waste continues to be stored in the premises of applicant.
3. This Tribunal dealt with the matter of industrial pollution in District Sonbhadra in the State of Uttar Pradesh in the light of allegation of discharge of mercury beyond the prescribed limits, affecting the nervous system and causing disorder and illness to the inhabitants of District Sonbhadra, Uttar Pradesh since the year 2006-2017.
4. To consider the above allegation, this Tribunal, on 25.08.2014, constituted a Core Committee and Sub-Committees to assess the potential impact of pollution and further action.

5. The Core Committee gave its report on 03.04.2018 which was considered and accepted by the order dated 28.08.2018. Directions were issued in terms of the said report. In respect of the applicant, it was *inter-alia* noted:

“(iii) M/s Aditya Birla Chemicals, Renukoot a) Industry shall ensure proper operation of effluent treatment plant so as to ensure the compliance of the effluent discharge standard. The industry shall also ensure that no untreated/partially treated effluent finds its way in to the Nallah leading to the Rihand Reservoir. The channel leading to Kihand Reservoir has to be intercepted, diverted and treated within the industry. The nallah presently passing through the factory should be isolated so that the industry cannot discharge any treated/partially/treated/untreated effluent which is being done now. b) **There is also an urgent need for the preparation of an action plan by the industry to shift the mercury bearing brine sludge and the muck contaminated with chlorinated chemicals from the factory premises to the TSDF in consultation with the UP State Pollution Control Board.** It may be stated here that storage of hazardous mercury bearing brine sludge and the muck contaminated with chlorinated chemicals inside the premises is not permitted by the prevailing Hazardous Waste Management Rules, 2016 and, therefore, to be shifted to a suitable TSDF immediately.”

(highlighting by us)

6. The Tribunal disposed of the application and constituted an Oversight Committee to oversee the compliance of the above recommendations/directions, headed by a former Judge of the Allahabad High Court, with representatives of the CPCB, State PCB and the District Magistrates of Districts Sonbhadra and Singrauli as members.
7. The Committee in its meeting dated 07.06.2019 considered the compliance of the said direction in respect of the applicant unit as follows:

"Shifting of Mercury bearing brine sludge:

M/s Grasim Industries Ltd. is manufacturing Caustic Soda. Admittedly, in the manufacturing of Caustic Soda, Mercury was one of the items which was obtained as a sludge in the process of the manufacturing. On the objection being raised, it is the case of the Company that they have completely changed the process of manufacturing of Caustic Soda, in which no Mercury is coming out as a bye product in the form of sludge since 2012. However, admittedly a huge stock of the mercury bearing brine sludge/waste which was obtained as a bye product during the course of manufacturing prior to 2012, has been stored in the premises of the Company. Mercury is a hazardous goods. The Hon'ble NGT in its order dated 28.08.2018 directed the industry to shift the mercury from the factory premises to TSDF immediately. The direction was as follows:

"There is also an urgent need for the preparation of an action plan by the industry to shift the mercury bearing brine sludge and the muck contaminated with chlorinated

chemicals from the factory premises to the TSDF in consultation with the UP State Pollution Control Board. It may be stated that storage of hazardous mercury bearing brine sludge and the muck permitted by the prevailing Hazardous Waste Management Rules, 2016 and, therefore, to be shifted to a suitable TSDF immediately*.

Admittedly, the aforesaid direction has not been complied with. In some of the meetings, the Company requested time to take steps but subsequently its representative stated that they have stored the mercury sludge properly in a place. He further stated that it would be difficult to shift the mercury from the premises to the TSDF. He also stated that TSDF will also store mercury sludge in the same manner in which they have stored.

Today, the representative of the Company stated that they have moved an Application before the Hon'ble NGT for the modification of the order dated 28.08.2018 and the said application is on the board for hearing on 19.07.2019. He requested that the matter may be taken up after 19th July, 2019.

It may be stated that in the meeting dated 23.11.2018 the Company expressed their difficulty in shifting the mercury waste/ sludge from the premises to TSDF. The Committee categorically stated that they have no power to modify the order and the Company can approach the NGT for the modification of the order. It may be mentioned here that in the earlier meetings the R.O. Sonbhadra was directed to get the sample of the Dongianullah and also find out the source of the water.

It may be mentioned here that the Committee has visited the Dongianullah in district Sonbhadra and has taken out

the sample of the flowing water. The said sample was analysed by the Central Pollution Control Board in their lab in which the mercury was found. In this regard, a report was submitted. In the report, the mercury was .0452 mg. per litre while the standard as per the E/Rules 1986 the permissible limits is .01 mg. per litre.

In the survey report of Dongianullah prepared by Shri Rajesh Singh, Scientific Assistant, Senior Engineer, Dr. S.C. Shukla Assistant Scientific Officer and submitted by Shri Radhey Shyam, R.O. Sonbhadra, wherein it is reported that in the column of waste source, discharge in nullah was from M/s Grasim Industries Ltd. Ranukoot. **In this way, the survey report demonstrates that the waste water discharge found from M/s Grasim Industries Ltd. in Dongianullah.**

At the time of the meeting, a query was made from Shri Avinash Rai, representative of the Company, that whether there is any another source from where the mercury may come to Dongianullah. He stated that to his knowledge, there is none but it may be possible that some discharges may be coming from other sources. The Committee is of the view that most probably the discharge of mercury in the Dongianullah may be from Grasim Industries wherein the mercury sludge is stored. The Committee is of the view that on the facts and circumstances the Hon'ble NGT has categorically directed the industry to shift the mercury waste brine sludge from the premises to TSDF, Kanpur and they have not been allowed to store mercury bearing brine sludge has not yet been shifted. The order of the NGT has not been complied with. The company is not able to show that NGT has modified its order and, in the circumstances, the Committee is of the view that the Company has clearly violated the

order of the Hon'ble NGT. In these circumstances, we propose to levy the penalty/ compensation of rupees one crore which will be subject to the approval by the Hon'ble NGT."

(highlighting by us)

8. It is, thus, clear that activity of discharge of Mercury in the environment by the applicant has been found and storage of hazardous waste is illegally continuing for which the applicant is liable to be dealt with as per law.
9. Prayer in the present application is that recommendation of the Core Committee regarding shifting of the Mercury brine sludge and muck may not be required to be enforced as the said storage is safe and covered by the consent given by the UPPCB.
10. On the other hand, learned counsel for the UPPCB points that under Rule 8 of the Hazardous Waste Management Rules, 2016, there cannot be storage of hazardous waste for more than 90 days and the jurisdiction of the UPPCB to extend it is further 90 days. Thus, the UPPCB has no authority to permit continuing storage of Mercury bearing brine sludge. Consent of UPPCB cannot be set up as an estoppels against the statutory provisions. Thereafter, the hazardous waste is to be shifted to a Treatment Storage and Disposal Facility (TSDF) set up by the State under Rule 16. Transportation has to be in terms of Rule 18 and 19. There is thus no occasion to modify the order of this Tribunal dated 28.08.2018. Moreover, the Committee in

its report dated 07.06.2019 has found that on taking sample of the flowing water outside the unit of the applicant, Mercury was found to be 0.452 mg/l against the standard of 0.1 mg/l. The finding has already been quoted above. The Committee has suggested penalty of Rs. 1 Crore as compensation.

11. In view of above, we are of the view that the applicant must forthwith shift the hazardous waste in accordance with the Rules and for the illegal storage as well as damage to the environment on account of contamination, the applicant is liable to pay environmental compensation and be dealt with as per rules. Such compensation may be assessed by a joint Committee comprising representative of the MoEF&CC, CPCB and the IIT, Kanpur within one month pending such assessment, the applicant may deposit a sum of Rs. 1 Crore towards the interim compensation with the CPCB to be spend for the restoration of the environment. CPCB will be the nodal agency for the purpose. The application as well as the report of the Committee with regard to the applicant stands disposed on in the above terms.
12. **I.A. No. 337/2019** is dismissed as withdrawn.
13. **I.A. No. 384/2019**: The prayer in this application is in substance to review the order of this Tribunal dated 28.08.2018 accepting recommendations of an Expert Committee in its report dated February, 2018 on the subject of emission limit of the particulate matter for boilers.

14. According to the applicant, the said limit according to MoEF&CC is to apply from 2022 but the said matter is pending before the Hon'ble Supreme Court in *W.P No. 13029/1985, M.C Mehta v. U.O.I.*
15. In view of the above, the matter is adjourned to avoid parallel proceedings on the issue before the Hon'ble Supreme Court and this Tribunal.

REPORT OF THE COMMITTEE

16. The Committee constituted by this Tribunal vide order dated 28.08.2018 has furnished its report dated 28.06.2019 suggesting ban of manufacturing of red bricks by use of clay/soil and by burning of coal with a view to facilitate more disposal of fly ash in brick manufacturing. This aspect may be looked into by the MoEF&CC and CPCB and a report be furnished to this Tribunal before the next date, by email.
17. The other aspects may be monitored by the Committee and its final report be given which may set out recommendations cumulatively at one place in a tabular form giving the status of compliance and the recommendations on or before 31.08.2019. The Chief Secretary of Uttar Pradesh in respect of District Sonbhadra and Chief Secretary of Madhya Pradesh in respect of Singrauli area may suggest further course of alternative oversight mechanism, in view of the fact the Committee is being asked to conclude its proceedings.

REPORT OF THE CPCB

18. We have also perused the report furnished by the CPCB in pursuance of the order dated 21.05.2019 on the subject of compliance of consent conditions. The Tribunal noted that consent conditions requires all internal roads to be made *pucca* to control the emission of particulate matter generated due to coal transportation in the area of Singrauli in Madhya Pradesh.

19. The relevant observations of the Committee are as under:

"Specific observations related to compliance of consent conditions:

- i. *The industry is non-complying with the regular operations of STP piezometers establishment in periphery of ash pond & remote calibration assess to MPPCB.*
- ii. *The industry is partially complying on following conditions:*
 - a. *Ground water depletion study not yet carried out.*
 - b. *Not yet informed MPPCB regarding the low-lying area filling with ash.*
 - c. *Fly ash utilization upto 86.42% by FY 2018-19*
 - d. *Flue -gas-desulfurization plant installation in under process.*
 - e. *Internal roads of weighbridge to coal handling area & ash pond area are not yet pucca. However, other major lengths of road have been mad pucca.*
 - f. *Fugitive dust control system (water mist spray) is inadequate at CHP area.*
 - g. *Interlocking of the process with APCDs."*

20. The Committee observed as follows:

"By 12 different locations, public roads are being used as haul roads which are passing through various

villages due to which the vulnerability of population to dust emission, vehicle pollution & chances of road accident increases. The nearest place from where industry is lifting coal is GajraBahra siding which is 15 kms far from the plant. For this industry is using MPRDC road as haul road this path passes through less habited & forest area. It is also pertinent to mention that having 24X7 vigils over the trucks for their tarpaulin cover & speed is not possible."

21. It has further been observed that transportation of coal by road was taking placed in violation of the order of Hon'ble Supreme Court of which compensation of Rs. 19,50,000 was liable to be paid.

22. We are informed that the Hon'ble Supreme Court has by an interim order permitted such transportation till further order. In view of the order of the Hon'ble Supreme Court, we defer the matter with regard to transportation only. However, the unit must comply with the requirement of operation of STP, establishment of piezometers and remote calibration as well as other deficiencies forthwith which may be overseen by the CPCB. In this regard the CPCB may assess compensation for the damage in this regard for the last five years and give its report within one month by email at judicial-ngt@gov.in.

List for further consideration on 30.09.2019.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

July 19, 2019
Original Application No.164/2018and connected matters
AK

