

SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE

JITPUR OPEN CAST COAL PROJECT (2.5 MTPA)

At

**VILLAGE JITPUR, TAHSIL SUNDERPAHARI,
DISTRICT GODDA
JHARKHAND**

Submitted to:

**Regional Office, East Central Zone
Ministry of Environment & Forests,
Central Pollution Control Board, New Delhi &
Jharkhand State Pollution Control Board, Ranchi**

The logo for Adani, featuring the word "adani" in a lowercase, sans-serif font. The letters "a", "d", and "n" are blue, while the letters "a", "n", and "i" are purple.

Submitted By:

**Corporate Environment Group
Adani Power Limited
Adani House, Shantigram
S G Highway, Ahmedabad
Gujarat**

PERIOD: October'2019 – March'2020

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Compliance status on Environmental Clearance (Jitpur Open Cast Coal Mine of 2.5 MTPA)

EC Letter No.- J/11015/148/2008-IA (IIM) Dated- 18.05.2009 and
Subsequent Environment Clearance Transfer to APL on dated 06/07/2015

Sl. No.	Conditions	Compliance Status
A. Specific Conditions		
(i)	Mining shall not be carried out in forestland until forestry clearance is obtained.	Noted. Stage II Forest approval has been received on 03.05.2018. Mining will be carried out after final diversion in favour of APL.
(ii)	The plan for diversion and realignment of the nala and modification of the natural surface drainage and design of the diversion canal shall be done in consultation and approval of the concerned State Flood and Irrigation Department. Dimension and depth of the nala should be finalized based on the peak flow of the water.	Compliance assured. The proposal has been prepared by M/s WAPCOS & submitted for approval to WRD, Govt. of Jharkhand.
(iii)	Top soil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.	Noted, Compliance assured.
(iv)	OB shall be stacked at earmarked external OB dumpsite within ML area and shall be a maximum height of 40m only each. The ultimate slope of the dump shall not exceed 28°. A minimum 100m distance shall be maintained between the OB dump and Kewari Nala and between the dump and Jitpur village. Monitoring and management of existing reclaimed dump sites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on yearly basis.	Compliance assured. Mining will be carried out as per the approved Mining Plan & suggested action will be taken during operation of mine.
(v)	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	Noted, Compliance assured, once the project take off.

(vi)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Noted, Based on historical Rain fall data action shall be taken. Mining will be carried out as per the approved Mining Plan.
(vii)	Crushers at the CHP shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	Noted & Compliance assured. Crusher will be installed with dust extraction/suppression system within mining leas area.
(viii)	Drills shall be wet operated.	Compliance assured.
(ix)	Controlled blasting shall be practiced only during daytime with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Noted, Compliance assured, once the project take off.
(x)	Mineral transportation to linked TPP shall be by conveyors only.	Noted, Change in transportation system, if any, will be intimated to MoEFCC for amendment.
(xi)	Area brought under afforestation shall not be less than 326.58 ha which includes reclaimed external OB dump (100 ha), backfilled area (153.47 ha), along ML boundary, along roads, green belt, in undisturbed areas and in colony by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	Noted, Compliance assured, once the project take off.
(xii)	A Progressive Mine Closure Plan shall be implemented for reclamation of quarry area of which 153.47 ha shall be backfilled and afforested by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. The balance 141.34 ha of decoaled area being converted into a water reservoir shall gently sloped along the upper benches and stabilized and reclaimed with plantation.	Noted, Compliance assured. Mine closure plan has been approved.
(xiii)	A Conservation Plan for endangered species found in and around the project area shall be formulated and for the medicinal plants (in-situ and ex-situ) shall be prepared and implemented in consultation with the State Forest and Wildlife Departments. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MOEF Regional Office, Bhubaneshwar.	Wildlife Conservation plan prepared by Dr. D. S Srivastava Principal Investigator and Team of Nature Conservation Society. The Conservation plan submitting to PCCF for valuable suggestions & implementation. Copy of Wildlife Conservation plan had submitted with six monthly compliance report during the period of Oct'15 to March'2016. The Wildlife Conservation Plan has been approved by PCCF, Ranchi. Jharkhand.

(xiv)	No groundwater shall be used for mining operations. Additional water required, if any, shall be met by recycling/reuse of the water from the existing activities and from rainwater harvesting measures.	Noted & agreed
(xv)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers, The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May, Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	Being Complied. Monitoring of ground water quality is being carried out by third party on monthly basis from existing wells and water level shall be carried out during operation phase. Monitoring report enclosed as Annexure -I . Peizometric wells shall be established, once the project takes off.
(xvi)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicated decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	Noted, Compliance assured, once the project take off.
(xvii)	ETP shall also be provided for workshop, and CHP. Effluents shall be treated to conform to prescribed standards, particularly for pH and TSS in case of discharge into any water course outside the lease.	Noted, Compliance assured, once the project take off.
(xviii)	An STP shall be provided for the township/colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.	Noted, Compliance assured.
(xix)	R&R shall be based on norms laid down/approval by the State Government and shall not be inferior to that in the National R&R Policy and shall be completed within a specified time-frame. R&R shall provide for a minimum outlay of Rs. 10 crores and Rs 2 crores as revenue expenditure and shall include specific income generation schemes.	Noted, Compliance assured. R&R will be carried out under the Land Acquisition, Resettlement & Rehabilitation Act' 2013. The final R&R package will be decided and awarded by the Government of Jharkhand.
(xx)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 50000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF and its Regional office at Bhubaneshwar.	Noted, Compliance assured, once the project take off.
(xxi)	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval.	Noted, Compliance assured.

B. General Conditions		
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Noted, Compliance assured.
(ii)	No change in the calendar plan including excavation, quantum of mineral coal and waste shall be made.	Noted, Compliance assured.
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring SPM, RPM, SO ₂ , NO _x and heavy metals such as Hg, Pb, Cr, As, etc. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Being Complied Regular monitoring of PM10, PM2.5, SO ₂ & NO _x are being carried out as per frequency & monitoring results are well within the norm. Monitoring results are being submitted to MoEFCC, CPCB & JSPCB along with compliance report. Ambient Air Quality monitoring stations established in consultation with Regional Officer, JSPCB. Environmental monitoring report enclosed as Annexure-I .
(iv)	Fugitive dust emissions (SPM and RSPM and heavy metals such as Hg, Pb, Cr., As, etc) from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points shall be provided and properly maintained.	Noted, Compliance assured, once the project take off.
(v)	Data on ambient air quality (SPM, RSPM, SO ₂ , NO _x and heavy metals such as Hg, Pb, Cr, As, etc)) shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	Being complied. Six monthly compliance report accordance to the Environmental clearance granted by MoEF is being submitted on regular basis to MoEFCC, CPCB & JSPCB. Last compliance reports for the period of April'2019 to September'2019 had been submitted vide our letter no. APL/Mine/EMD/EC/MoEF/177/11/19 dated- 26/11/2019
(vi)	Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Noted, Compliance assured. Noise level monitoring is being carried out regularly and reports submitted to the Board. Please refer Annexure -I .
(vii)	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	Noted, Compliance assured, once the project take off.
(viii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be	Noted, Compliance assured, once the project take off.

	covered with tarpaulins and optimally loaded.	
(ix)	Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	Noted, Compliance assured, once the projects take off.
(x)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.	Noted, Compliance assured, during operation phase.
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	We have established Environment Management Cell with Senior Management at Corporate level. Site Environment Cell will be created once project is operational.
(xii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneshwar.	Noted, Compliance assured.
(xiii)	The Regional Office of this Ministry located at Bhubaneshwar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.	Noted We always extend full cooperation to the Scientists/Officers from Regional Office of the Ministry, MoEFC, CPCB & SPCB etc.
(xiv)	A copy of this will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/ representation has been received while processing the proposal.	Complied
(xv)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.	Complied
(xvi)	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in The compliance status shall also be uploaded by the project authorities in their website and	Complied Advertised in two local newspapers. The EC is transferred from JSPL to APL Application has been made online to transfer project from Adani Power Limited to its subsidiary company Adani Power (Mundra) Limited vide proposal no. IA/JH/CMIN/129973/2019 dated 19.02.2020

	regularly updated at least once in six months so as to bring the same in the public domain. The data shall also be displayed at the entrance of the project premises and mines office and in corporate office.	Compliance status updated on Company's website.
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Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122052, Haryana
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035, Rajasthan
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Test Report

Project Name : M/s Adani Power Ltd.
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/01
Report No. : VEL/A/ 1910-1912/01-23
Reporting Date : 03/01/2020
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
01-10-2019	30.8	63.8	5.9	11.8	0.56
02-10-2019	36.7	62.7	<5.0	10.4	0.58
08-10-2019	31.8	54.8	<5.0	12.7	0.53
09-10-2019	35.9	61.8	5.3	8.9	0.55
15-10-2019	31.5	60.2	<5.0	12.1	0.63
16-10-2019	24.2	48.9	5.1	12.7	0.60
17-10-2019	31.2	65.1	6.8	10.7	0.64
18-10-2019	29.8	46.2	5.5	11.9	0.55
05-11-2019	33.6	62.4	6.0	14.9	0.59
06-11-2019	38.1	60.2	6.9	11.2	0.66
12-11-2019	32.8	59.1	5.5	14.6	0.67
13-11-2019	33.0	47.1	6.8	11.3	0.58
18-11-2019	35.4	49.0	5.2	12.7	0.59
20-11-2019	33.7	62.1	5.7	10.9	0.57
21-11-2019	36.9	59.7	5.9	9.7	0.63
04-12-2019	36.7	51.0	6.2	8.7	0.58
05-12-2019	42.7	64.2	<5.0	12.9	0.59
11-12-2019	26.9	42.7	5.3	9.9	0.66
12-12-2019	29.4	48.7	<5.0	12.6	0.59
18-12-2019	29.7	49.6	6.0	11.9	0.60
19-12-2019	26.7	44.9	5.4	12.1	0.58
20-12-2019	29.2	43.8	5.9	10.0	0.56
27-12-2019	27.4	44.2	6.6	9.5	0.62
Max.	42.7	65.1	6.9	14.9	0.67
Min.	24.2	42.7	5.1	8.7	0.53
Avg.	32.44	54.40	5.90	11.51	0.60

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NOTE: a) The results listed refer only to the tested samples & applicable parameters
b) Total liabilities of our lab will be restricted to the invoice amount only
c) The sample will be destroyed after retention time unless otherwise specified
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Test Report

Project Name : M/s Adani Power Ltd.
 Jitpur Open Cast Coal Mine (2.5 MTPA)
 Tehsil-Sunderpahari, District-Godda Jharkhand.
 Sample No. : VEL/APL/M/02
 Report No. : VEL/A/ 1910-1912/24-46
 Reporting Date : 03/01/2020
 Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
 Name of Monitoring Location : VILLAGE - JITPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
01-10-2019	31.7	52.8	7.5	11.5	0.57
02-10-2019	33.8	63.9	6.6	9.9	0.66
08-10-2019	34.9	62.0	5.8	8.7	0.50
09-10-2019	30.7	59.1	7.5	7.6	0.56
15-10-2019	36.2	62.5	8.1	12.8	0.61
16-10-2019	36.2	58.3	6.7	12.3	0.68
17-10-2019	35.7	63.8	<5.0	10.9	0.62
18-10-2019	29.0	61.0	8.9	9.6	0.51
05-11-2019	33.7	59.4	6.7	11.4	0.53
06-11-2019	48.7	64.3	7.2	13.0	0.58
12-11-2019	39.1	59.5	6.0	8.8	0.62
13-11-2019	29.8	52.7	8.2	7.9	0.56
18-11-2019	28.6	61.4	7.9	12.8	0.53
20-11-2019	37.7	55.8	<5.0	10.7	0.55
21-11-2019	36.6	56.7	6.7	13.0	0.66
04-12-2019	32.6	58.2	6.9	12.5	0.54
05-12-2019	31.7	63.7	6.1	11.6	0.62
11-12-2019	36.9	54.6	<5.0	12.5	0.61
12-12-2019	35.4	62.7	5.0	12.8	0.54
18-12-2019	35.9	63.9	6.7	8.6	0.56
19-12-2019	37.3	54.2	5.2	6.4	0.59
20-12-2019	32.1	63.8	<5.0	9.1	0.62
27-12-2019	31.4	60.6	6.8	7.5	0.53
Max.	48.7	64.3	8.9	13	0.68
Min.	28.6	52.7	5	6.4	0.5
Avg.	34.92	59.68	6.88	10.45	0.58

Mee... Kaushik
 (Checked By)

AD... RAWAT
 (Checked By)

(Approved By)

NOTE: a) The results listed refer only to the tested samples & applicable parameters
 b) Total liabilities of our lab will be restricted to the invoice amount only
 c) The sample will be destroyed after retention time unless otherwise specified
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Test Report

Project Name : M/s Adani Power Ltd.
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/03
Report No. : VEL/A/ 1910-1912/47-69
Reporting Date : 03/01/2020
Testing Protocol/Method : As per CPCB/SPCB/MoEF&CC/IS-5182
Name of Monitoring Location : VILLAGE - PAHARPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
03-10-2019	27.4	39.5	6.9	12.7	0.50
04-10-2019	31.6	48.8	6.5	10.8	0.55
10-10-2019	38.1	52.1	5.7	13.2	0.62
11-10-2019	39.2	51.4	6.6	11.7	0.57
19-10-2019	32.4	58.3	6.9	9.8	0.56
21-10-2019	23.7	46.1	<0.5	8.9	0.53
25-10-2019	28.4	48.9	6.8	12.4	0.58
30-10-2019	29.8	43.2	6.8	11.8	0.59
07-11-2019	35.6	49.7	5.9	10.7	0.61
08-11-2019	38.2	52.2	6.9	7.9	0.53
14-11-2019	36.7	63.8	<0.5	8.5	0.53
15-11-2019	28.1	36.4	5.7	9.2	<0.5
22-11-2019	37.6	43.7	5.8	13.0	0.51
23-11-2019	32.1	44.3	6.2	9.9	0.59
26-11-2019	22.6	40.1	5.9	12.4	0.60
28-11-2019	20.6	39.5	6.9	10.7	0.58
06-12-2019	24.9	36.7	7.8	9.7	<0.5
07-12-2019	20.7	39.4	5.7	13.0	0.55
14-12-2019	34.2	34.7	<0.5	7.9	0.57
17-12-2019	23.4	43.7	5.7	8.6	<0.5
23-12-2019	22.7	46.8	6.2	8.9	0.57
26-12-2019	34.6	63.4	6.9	13.0	0.67
30-12-2019	26.8	59.2	5.1	9.6	0.64
Max.	39.2	63.8	7.8	13.2	0.67
Min.	20.6	34.7	5.1	7.9	0.5
Avg.	29.97	47.22	6.35	10.62	0.57

Meeta Kaushik
(Tested By)

APRIL RAJWAT
(Checked By)

(Approved By)

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Test Report

Project Name : M/s Adani Power Ltd.
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/04
Report No. : VEL/A/ 1910-1912/70-92
Reporting Date : 03/01/2020
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - PAKERI

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
03-10-2019	33.5	55.9	7.5	13.7	0.57
04-10-2019	27.9	53.7	5.9	11.9	0.56
10-10-2019	31.4	59.8	7.2	8.2	0.62
11-10-2019	33.3	57.3	7.9	9.5	0.65
19-10-2019	28.2	48.3	7.7	8.3	0.66
21-10-2019	27.4	50.1	<0.5	9.6	0.57
25-10-2019	36.3	60.8	6.6	10.6	0.62
30-10-2019	32.7	58.9	6.7	11.9	0.63
07-11-2019	36.8	52.7	8.1	12.8	0.67
08-11-2019	32.7	64.7	6.8	13.2	0.69
14-11-2019	33.9	52.9	7.6	10.7	0.58
15-11-2019	30.4	60.1	6.2	11.2	0.62
22-11-2019	32.4	62.6	5.7	12.5	0.59
23-11-2019	29.5	56.4	5.2	9.9	0.62
26-11-2019	37.9	59.2	6.1	10.7	0.66
28-11-2019	28.7	48.1	<0.5	12.4	0.59
06-12-2019	29.2	46.1	6.7	13.1	0.51
07-12-2019	38.6	60.1	8.0	11.3	0.63
14-12-2019	39.3	58.2	7.6	10.1	0.66
17-12-2019	39.2	59.6	<0.5	9.3	0.55
23-12-2019	36.6	63.3	6.7	10.2	0.68
26-12-2019	38.1	62.7	<0.5	8.8	0.57
30-12-2019	39.5	61.1	6.6	12.8	0.53
Max.	39.5	64.7	8.1	13.7	0.69
Min.	27.4	46.1	5.2	8.3	0.51
Avg.	33.62	56.94	6.86	11.10	0.61

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Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035, Rajasthan
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample No.: VEL/APL/AN/01 Report No.: VEL/N/1910/001
Project Name: M/s Adani Power Ltd. Reporting Date: 31/10/2019
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunder pahari, District-Godda
Jharkhand.
Testing Protocol/ Method: As per CPCB/SPCB/MoEF & CC/IS-9989

NOISE LEVEL MONITORING RESULTS

Location	Date of Monitoring	Noise Level in dB(A)	
		Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)
		Minimum-Maximum	Minimum-Maximum
CORE ZONE AREA (BATHI TOLA)	05/10/2019	43.5- 58.1	32.9- 49.2
Village-DAHUBERA	12/10/2019	47.9- 56.2	34.7- 42.7
Village-GAMARO	18/10/2019	44.9 - 59.5	33.2 - 45.7
Village-JITPUR	21/10/2019	45.4 - 62.6	37.3- 49.1
Village-PAHARPUR	25/10/2019	46.8 - 53.4	31.6- 48.4
Village-JIYAJORI	30/10/2019	44.6 - 57.9	34.5 - 44.2

Note: Mine development is not started (Mine is not operational).

Megha Kaushik
(Checked By)

RAJAWAT
(Checked By)
Rajawat

(Approved By)
Authorized Signatory

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Test Report

Sample Number: VEL/APL/01
Project: M/s Adani Power Ltd.
Jitpur Open cast coal (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda
Jharkhand

Report No.: VEL/S/1910/25/001
Format No.: 7.8 F-01
Party Reference No.: NIL
Reporting Date: 31/10/2019
Period of Analysis: 25/10/2019 to 30/10/2019
Receipt Date: 25/10/2019
Sampling Date: 23/10/2019
Type of Sampling: Composite
Sampling Quantity: 2.0 Kg
Depth of Sampling: 30 cm
Packing Status: Temp Sealed

Sample Description: SOIL
Sampling Location: Project Site (Bathi Tola) Core Zone Area
Sample Collected by: Vardan EnviroLab Team
Sampling & Analysis Protocol: IS 2720 & USDA

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.87	--
2.	Conductivity	IS:14767 by Conductivity meter	0.354	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	39.85	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.62	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	75.00	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	58.41	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	66.50	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	94.28	kg./hec.
11.	Iron as Fe	USEPA 3050B	0.94	mg/100gm
12.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.71	%
13.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	42.36	mg/100gm
14.	Available Nitrogen as N	IS:14684 Distillation Method	185.00	kg./hec.
15.	Available Phosphorus (P)	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	53.00	kg./hec.
16.	Zinc as Zn	USEPA 3050B	0.54	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.87	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.46	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.40	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.97	mg/100gm
21.	Copper as Cu	USEPA 3050B	0.82	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.65	mg/100gm

Note- SOP- Standard operating procedure

Mahesh Nayak
(Tested By)

113 RAWAI
(Checked By)

(Approved By)

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Vardan EnviroLab

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Test Report

Sample Number: VEL/APL/02 Report No.: VEL/S/1910/25/002
Project: M/s Adani Power Ltd. Format No.: 7.8 F-01
Jitpur Open cast coal (2.5 MTPA) Party Reference No.: NIL
Tehsil-Sunderpahari, District-Godda Reporting Date: 31/10/2019
Jharkhand Period of Analysis: 25/10/2019 to 30/10/2019
Sample Description: SOIL Receipt Date: 25/10/2019
Sampling Location: Project Site (Jetka Tola) Sampling Date: 23/10/2019
Sample Collected by: Vardan Enviro Lab Team Type of Sampling: Composite
Sampling & Analysis Protocol: IS 2720 & USDA Sampling Quantity: 2.0 Kg
Depth of Sampling: 30 cm
Packing Status: Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.92	--
2.	Conductivity	IS:14767 by Conductivity meter	0.338	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP . SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP . SP-81,Issue No.-01& Issue Date-14/02/2013	28.52	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.46	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	53.92	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	49.00	mg/100gm
9.	Sodium as Na	SOP . SP-84,Issue No.-01& Issue Date-14/02/2013	56.47	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	91.06	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.63	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	34.58	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	225.00	kg./hec.
14.	Available Phosphorus	SOP . SP-86,Issue No.-01& Issue Date-14/02/2013	13.68	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.53	mg/100gm
16.	Zinc as Zn	USEPA 3050B	7.92	mg/100gm
17.	Manganese as Mn	USEPA 3050B	6.34	mg/100gm
18.	Chromium as Cr	USEPA 3050B	1.39	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.55	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.68	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.35	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.87	mg/100gm

Note- SOP- Standard operating procedure

Mamata Nayak
Checked By

Checked By
20/10/2019

Approved By
Authorized Signatory

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Test Report

Sample Number:	VEL/APL/03	Report No.:	VEL/S/1910/25/003
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Rampur	Reporting Date:	31/10/2019
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	25/10/2019 to 30/10/2019
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	25/10/2019
		Sampling Date:	23/10/2019
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.81	--
2.	Conductivity	IS:14767 by Conductivity meter	0.346	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01 & Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01 & Issue Date-14/02/2013	32.64	%
6.	Bulk density	SOP , SP-80,Issue No.-01 & Issue Date-14/02/2013	1.57	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01 & Issue Date-14/02/2013	57.49	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01 & Issue Date-14/02/2013	46.23	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01 & Issue Date-14/02/2013	58.63	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01 & Issue Date-14/02/2013	116.98	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.78	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01 & Issue Date-14/02/2013	36.42	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	242.00	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01 & Issue Date-14/02/2013	23.13	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.66	mg/100gm
16.	Zinc as Zn	USEPA 3050B	18.01	mg/100gm
17.	Manganese as Mn	USEPA 3050B	18.24	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.45	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.76	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.83	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.86	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.36	mg/100gm

Note- SOP- Standard operating procedure

Mamata Nayak
(Checked By)

ANJAN RAWAT
(Checked By)

(Approved By)
Authorised Signatory

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Test Report

Sample Number:	VEL/APL/04	Report No.:	VEL/S/1910/25/004
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Kerojori Bara	Reporting Date:	31/10/2019
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	25/10/2019 to 30/10/2019
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	25/10/2019
		Sampling Date:	23/10/2019
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.79	--
2.	Conductivity	IS:14767 by Conductivity meter	0.327	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP . SP-81,Issue No.-01& Issue Date-14/02/2013	37.60	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.38	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	43.65	mg/100gm
8.	Calcium as Ca	SOP . SP-82,Issue No.-01& Issue Date-14/02/2013	27.50	mg/100gm
9.	Sodium as Na	SOP . SP-84,Issue No.-01& Issue Date-14/02/2013	22.46	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	138.69	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.78	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	9.93	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	288.54	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	39.87	kg./hec.
15.	Zinc as Zn	USEPA 3050B	2.96	mg/100gm
16.	Manganese as Mn	USEPA 3050B	0.93	mg/100gm
17.	Chromium as Cr	USEPA 3050B	0.46	mg/100gm
18.	Lead as Pb	USEPA 3050B	0.37	mg/100gm
19.	Iron as Fe	USEPA 3050B	1.64	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.76	mg/100gm
21.	Copper as Cu	USEPA 3050B	1.63	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.64	mg/100gm

Note- SOP- Standard operating procedure

Mamata Nayak
 (Checked By)

ADITI RAJAWAL
 (Checked By)

(Approved By)
 Authorised Signatory

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Test Report

Sample Number:	VEL/APL/W/01	Report No.:	VEL/W/1910/001
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village-BATHI TOLA	Reporting Date:	31/10/2019
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	25/10/2019 to 30/10/2019
Parameter Required:	As per Work Order	Sampling Date:	23/10/2019
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.72	--	No Relaxation
2.	Colour	APHA .2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 5.0	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable.
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA . 2340 C, EDTA Titrimetric Method	263.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	79.83	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	229.44	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	52.37	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)		1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	15.51	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	374.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	13.01	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.48	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	15.50	mg/l	No Relaxation
17.	Iron as Fe	APHA . 3500-Fe B I,10 Phenanthroline Method	0.32	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.26	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

Mamata Nayak
 (Checked By)

APL IN RAWAT
 (Checked By)

(Approved By)


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Test Report

Sample No.: VEL/APL/W/01			Report No: VEL/W/1910/001		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	623.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.43	mg/l	15
25.	Copper as Cu	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.14	mg/l	1.5
26.	Manganese as Mn	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	⁷⁵ Selenium as Se	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	⁷⁵ Arsenic as As	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	²⁰¹ Mercury as Hg	APHA . 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

#These parameter are not covered in our NABL scope.

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

Mamata Nayak

(Checked By)

VINAYAT

(Checked By)



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Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035, Rajasthan
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Test Report

Sample Number: VEL/APL/W/02
Name & Address of the Party: M/s Adani Power Ltd.
Jitpur Open Cast Coal (2.5 MTPA)
Tehsil- Sunder pahari, Distriet-Godda,
Jharkhand
Sample Description: GROUND WATER
Sample Location: Village-JETKA TOLA
Sample Collected by: Vardan EnviroLab Representative
Parameter Required: As per Work Order
Sampling and Analysis Protocol: IS-10500-2012,APHA

Report No.: VEL/W/1910/002
Format No.: 7.8 F-01
Party Reference No.: NIL
Reporting Date: 31/10/2019
Period of Analysis: 25/10/2019 to 30/10/2019
Sampling Date: 23/10/2019
Sampling Quantity: 2.0 Ltr
Sampling Type: Grab
Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.68	--	No Relaxation
2.	Colour	APHA .2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA . 2340 C, EDTA Titrimetric Method	227.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	78.93	mg/l	200
8.	Alkalinity as CaCO ₃	APHA . 2320 B, Titrimetric Method	215.46	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	55.40	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA . 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	7.31	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	338.00	mg/l	2000
14.	Sulphate as SO ₄	APHA . 4500 E, Turbidimetric Method	8.12	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.46	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.43	mg/l	No Relaxation
17.	Iron as Fe	APHA . 3500-Fe B 1,10 Phenanthroline Method	0.28	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.31	mg/l	1
20.	Total Chromium as Cr	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/W/02		Report No: VEL/W/1910/002			
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	563.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.26	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.13	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	⁷⁵ Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	⁷⁵ Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	²⁰¹ Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

Mamata Nayak

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ANU INIRAWAT

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Anu Inirawat



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Test Report

Sample Number:	VEL/APL/W/03	Report No.:	VEL/W/1910/003
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- RAMPUR	Reporting Date:	31/10/2019
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	25/10/2019 to 30/10/2019
Parameter Required:	As per Work Order	Sampling Date:	23/10/2019
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.47	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	1.8	NTU	5
4.	Odour	APHA. 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	163.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	43.98	mg/l	200
8.	Alkalinity as CaCO ₃	APHA . 2320 B, Titrimetric Method	145.83	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B. Argentometric Method	36.72	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA . 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B. Calculation Method	12.94	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	241.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	10.54	mg/l	400
15.	Fluoride as F	APHA . 4500-F- D, SPADNS Method	0.67	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	6.79	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.27	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.41	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/W/03			Report No: VEL/W/1910/003		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	401.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.44	mg/l	15
25.	Copper as Cu	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA , 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

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(Signature)

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(Checked By) *(Signature)*

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Test Report

Sample Number:	VEL/APL/W/04	Report No.:	VEL/W/1910/004
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- KEROJORI BARA	Reporting Date:	31/10/2019
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	25/10/2019 to 30/10/2019
Parameter Required:	As per Work Order	Sampling Date:	23/10/2019
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.83	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	256.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	78.69	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	221.05	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	58.93	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	14.49	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	373.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	14.32	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.37	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) .Chromotropic Method	12.36	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.32	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.25	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/VV/04			Report No: VEL/VV/1910/004		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	621.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.38	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: *BDL-Below Detection Limit. **DL- Detection Limit
#These parameter are not covered in our NABL scope.

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Test Report

Sample Number: VEL/APL/W/05
Name & Address of the Party: M/s Adani Power Ltd.
Jitpur Open Cast Coal (2.5 MTPA)
Tehsil- Sunder pahari, District-Godda,
Jharkhand
Sample Description: GROUND WATER
Sample Location: Village- PAHARPUR
Sample Collected by: Vardan EnviroLab Representative
Parameter Required: As per Work Order
Sampling and Analysis Protocol: IS-10500-2012,APHA

Report No.: VEL/W/1910/005
Format No.: 7.8 F-01
Party Reference No.: NIL
Reporting Date: 31/10/2019
Period of Analysis: 25/10/2019 to 30/10/2019
Sampling Date: 23/10/2019
Sampling Quantity: 2.0 Ltr
Sampling Type: Grab
Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H* B Electrometric Method	7.86	--	No Relaxation
2.	Colour	APHA ,2120 B. Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B. Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA . 2340 C. EDTA Titrimetric Method	250.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	68.54	mg/l	200
8.	Alkalinity as CaCO ₃	APHA . 2320 B. Titrimetric Method	232.43	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	41.25	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	*Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	19.19	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	349.00	mg/l	2000
14.	Sulphate as SO ₄	APHA . 4500 E, Turbidimetric Method	12.88	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.77	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) , Chromotropic Method	9.06	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.24	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.29	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/W/05			Report No: VEL/W/1910/005		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	582.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.54	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.11	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
These parameter are not covered in our NABL scope.

Mamata Nayak
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Test Report

Sample Number:	VEL/APL/W/06	Report No.:	VEL/W/1910/006
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- DAHUBERA	Reporting Date:	31/10/2019
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	25/10/2019 to 30/10/2019
Parameter Required:	As per Work Order	Sampling Date:	23/10/2019
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA .4500-H ⁺ B Electrometric Method	7.86	--	No Relaxation
2.	Colour	APHA .2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA. 2150 B . Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA . 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA . 2340 C. EDTA Titrimetric Method	236.00	mg/l	600
7.	Calcium as Ca	APHA. 3500 Ca B, EDTA Titrimetric Method	75.86	mg/l	200
8.	Alkalinity as CaCO ₃	APHA . 2320 B, Titrimetric Method	224.73	mg/l	600
9.	Chloride as Cl	APHA. 4500-Cl ⁻ B, Argentometric Method	46.77	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA . 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	11.35	mg/l	100
13.	Total Dissolved Solids	APHA . 2540 C, Gravimetric Method	445.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	14.60	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.46	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	4.39	mg/l	No Relaxation
17.	Iron as Fe	APHA . 3500-Fe B I, 10 Phenanthroline Method	0.17	mg/l	No relaxation
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.33	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

Mamata Nayak

(Checked By)

ADARSH PAWAT

(Checked By)

(Approved By)

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Test Report

Sample No.: VEL/APL/W/06			Report No: VEL/W/1910/006		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	742	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA . 3111 B. Direct Air, Acetylene Flame Method	0.31	mg/l	15
25.	Copper as Cu	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA . 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	⁷⁵ Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	⁷⁵ Arsenic as As	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	²⁰¹ Mercury as Hg	APHA , 3112 B. Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit. **DL- Detection Limit
#These parameter are not covered in our NABL scope.

Mamata Nayak
(Checked By)

ASHWIN DAWAT
(Checked By)



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Test Report

Sample Number: VEL/APL/W/07 Report No.: VEL/W/1910/007
Name & Address of the Party: M/s Adani Power Ltd. Format No.: 7.8 F-01
Jitpur Open Cast Coal (2.5 MTPA) Party Reference No.: NIL
Tehsil- Sunder pahari, District-Godda, Reporting Date: 31/10/2019
Jharkhand
Sample Description: SURFACE WATER Period of Analysis: 25/10/2019 to 30/10/2019
Sample Location: Down Stream of Kewari Nala Sampling Date: 23/10/2019
Sample Collected by: Vardan EnviroLab Representative Sampling Quantity: 2.0 Ltr
Parameter Required: As per Work Order Sampling Type: Grab
Sampling and Analysis Protocol: IS-10500-2012,APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.84	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	8.4	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	163.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	49.51	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	153.26	mg/l
9.	Chloride as Cl	APHA. 4500-Cl ⁻ B, Argentometric Method	37.62	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	9.59	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	257.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.83	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	1.42	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	8.22	mg/l
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.39	mg/l
18.	#Aluminium as Al	APHA . 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

Mamata Nayak

(Checked By)

APRIL DAWAT

(Checked By)

(Approved By)

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Test Report

Sample No.: VEL/APL/W/07			Report No: VEL/W/1910/007	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	428	µS/cm
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.57	mg/l
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	⁷⁵ Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	⁷⁵ Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	27.50	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.4	mg/l

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

Mamata Nayak
Mamata Nayak
Analyst

ANIL KUMAR RAWAT
(Checked By)
Anil Kumar Rawat



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Test Report

Sample Number:	VEL/APL/W/08	Report No.:	VEL/W/1910/008
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	SURFACE WATER	Party Reference No.:	NIL
Sample Location:	Up- Stream of Kewari Nala	Reporting Date:	31/10/2019
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	25/10/2019 to 30/10/2019
Parameter Required:	As per Work Order	Sampling Date:	23/10/2019
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^o C)	APHA ,4500-H ⁺ B Electrometric Method	7.68	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL(DL 5 Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	5.6	NTU
4.	Odour	APHA, 2150 B . Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	132.00	mg/l
7.	Calcium as Ca	APHA. 3500 Ca B, EDTA Titrimetric Method	43.76	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	126.32	mg/l
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	30.54	mg/l
10.	Residual Free Chlorine	APHA. 3500 Cl B Iodometric Method	*BDL(DL 0.02 mg/l)	
11.	²⁻ Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	5.54	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	223.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	10.22	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.12	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	0.96	mg/l
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.43	mg/l
18.	#Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

Mamata Nayak
(Checked By)

ADYAN KAWAT
(Checked By)

(Approved By)
Authorised Signatory
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Test Report

Sample No.: VEL/APL/W/08			Report No: VEL/W/1910/008	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	371	µS/cm
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.56	mg/l
25.	Copper as Cu	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	*Selenium as Se	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	*Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	14.50	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.8	mg/l

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

Mamata Nayak

(Signature)

IM PAWAT

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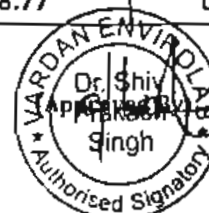
Test Report

Project Name : M/s Adani Power Ltd.
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/01
Report No. : VEL/A/2001-2003/01-23
Reporting Date : 03/04/2020
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
02-01-2020	27.5	61.4	5.8	7.5	0.62
03-01-2020	34.3	59.2	6.2	9.9	0.66
08-01-2020	30.7	57.6	<5.0	10.1	0.65
09-01-2020	31.6	61.7	5.9	9.1	0.73
15-01-2020	31.8	60.4	<5.0	7.6	0.68
16-01-2020	26.2	50.3	<5.0	8.2	0.79
17-01-2020	34.6	67.9	6.7	10.1	0.75
18-01-2020	27.1	48.4	6.4	9.3	0.73
05-02-2020	32.9	61.8	<5.0	7.4	0.64
06-02-2020	34.1	57.4	6.8	6.9	0.61
12-02-2020	34.5	55.7	5.3	6.7	0.66
13-02-2020	35.9	58.3	6.1	8.5	0.59
18-02-2020	35.7	60.7	5.5	9.9	0.62
20-02-2020	31.4	59.3	5.2	10.1	0.64
21-02-2020	39.5	55.4	<5.0	9.9	0.67
03-03-2020	35.2	57.6	6.8	8.9	0.60
04-03-2020	41.9	67.3	<5.0	8.4	0.55
11-03-2020	28.6	46.9	5.4	6.4	0.57
12-03-2020	33.7	53.7	6.7	7.6	0.53
18-03-2020	40.5	66.8	6.3	10.3	0.57
19-03-2020	26.5	42.3	5.7	9.7	0.52
20-03-2020	36.2	53.4	5.2	10.2	0.51
21-03-2020	30.4	44.8	<5.0	9.8	0.58
Max.	41.9	67.9	6.8	10.3	0.79
Min.	26.2	42.3	5.2	6.4	0.51
Avg.	33.16	56.74	6.0	8.77	0.63

NEENU KAUSHIK
ANALYST

ARJUN RAWAT
Checked By



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Test Report

Project Name : M/s Adani Power Ltd.
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/02
Report No. : VEL/A/ 2001-2003/24-46
Reporting Date : 03/04/2020
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - JITPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
02-01-2020	36.2	54.9	7.6	10.6	0.52
03-01-2020	34.6	60.2	6.9	9.8	0.61
08-01-2020	37.5	61.4	5.9	8.4	0.53
09-01-2020	32.1	57.3	7.8	7.3	0.55
15-01-2020	33.5	62.8	<5.0	8.7	0.63
16-01-2020	34.1	63.5	6.8	9.6	0.65
17-01-2020	38.4	62.5	<5.0	10.2	0.61
18-01-2020	28.6	61.7	9.1	9.1	0.54
05-02-2020	37.8	60.2	6.8	8.3	0.52
06-02-2020	45.6	56.4	7.4	10.5	0.55
12-02-2020	43.8	62.6	6.3	8.5	0.65
13-02-2020	36.1	54.7	8.4	7.7	0.51
18-02-2020	31.7	62.8	7.3	9.3	0.49
20-02-2020	42.8	53.1	<5.0	8.5	0.53
21-02-2020	39.5	55.8	<5.0	7.8	0.62
03-03-2020	37.9	57.6	7.1	8.1	0.53
04-03-2020	34.2	61.8	6.3	6.2	0.64
11-03-2020	38.3	53.7	<5.0	8.6	0.49
12-03-2020	37.1	64.6	<5.0	7.6	0.51
18-03-2020	39.6	61.5	6.3	8.1	0.53
19-03-2020	47.3	52.8	5.7	6.3	0.55
20-03-2020	38.4	61.9	<5.0	9.5	0.68
21-03-2020	39.2	60.8	6.2	7.9	0.54
Max.	47.3	64.6	9.1	10.6	0.68
Min.	28.6	52.8	5.7	6.2	0.49
Avg.	37.61	59.28	7.04	8.54	0.57

MEENU KAUSHIK

ANALYST

ARJUN RAWAT
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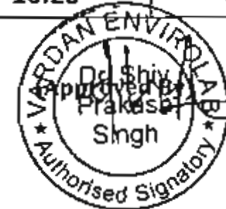
Test Report

Project Name : M/s Adani Power Ltd.
 Jitpur Open Cast Coal Mine (2.5 MTPA)
 Tehsil-Sunderpahari, District-Godda Jharkhand.
 Sample No. : VEL/APL/M/03
 Report No. : VEL/A/2001-2003/47-69
 Reporting Date : 03/04/2020
 Testing Protocol/Method : As per CPCB/SPCB/MoEF&CC/IS-5182
 Name of Monitoring Location : VILLAGE - PAHARPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
04-01-2020	26.2	37.5	6.7	11.5	0.54
06-01-2020	59.4	46.3	6.2	9.6	0.56
10-01-2020	35.8	51.8	5.6	12.4	0.67
11-01-2020	41.6	50.4	6.1	10.3	0.56
20-01-2019	38.5	50.3	6.8	9.9	0.58
21-01-2020	27.3	44.2	<5.0	9.3	0.56
25-01-2020	29.5	45.7	6.7	11.6	0.63
30-01-2020	31.7	42.6	<5.0	10.3	0.69
07-02-2020	37.8	45.8	5.6	10.9	0.65
08-02-2020	37.6	51.6	6.1	8.2	0.58
14-02-2019	35.1	56.7	<5.0	8.7	0.56
15-02-2020	29.4	33.2	5.9	9.6	<0.5
22-02-2020	36.8	41.8	<5.0	13.3	0.53
24-02-2020	32.5	45.7	6.7	9.2	0.61
26-02-2020	22.7	43.6	6.8	10.3	0.63
28-02-2020	21.3	36.7	6.4	10.1	0.66
05-03-2020	25.6	35.2	7.9	9.9	<0.5
06-03-2020	21.8	42.5	5.1	12.3	<0.5
09-03-2019	32.4	40.8	<5.0	7.8	0.58
10-03-2020	26.7	46.2	5.5	8.9	0.63
13-03-2020	23.2	48.5	6.3	9.3	0.58
14-03-2020	31.9	61.2	6.5	12.4	0.66
17-03-2020	28.7	60.4	5.4	9.7	0.68
Max.	59.4	61.2	7.9	13.3	0.69
Min.	21.3	33.2	5.1	7.8	0.53
Avg.	32.57	46.12	6.27	10.26	0.61

MEENKAUSHIK
 SHARMA
 ANALYST

ARJUN RAWAT
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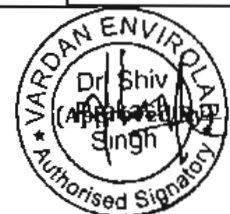
Test Report

Project Name : M/s Adani Power Ltd.
 Jitpur Open Cast Coal Mine (2.5 MTPA)
 Tehsil-Sunderpahari, District-Godda Jharkhand.
 Sample No. : VEL/APL/M/04
 Report No. : VEL/A/ 2001-2003/70-92
 Reporting Date : 03/04/2020
 Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
 Name of Monitoring Location : VILLAGE - PAKERI

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
04-01-2020	34.7	52.9	7.8	6.3	0.58
06-01-2020	29.3	54.5	6.3	7.5	0.53
10-01-2020	32.8	56.8	7.8	8.5	0.61
11-01-2020	35.6	59.4	7.2	9.9	0.62
20-01-2019	27.3	51.7	7.3	8.6	0.58
21-01-2020	26.8	53.6	<5.0	9.7	0.55
25-01-2020	37.3	62.1	6.3	10.5	0.54
30-01-2020	34.2	59.4	6.8	9.6	0.58
07-02-2020	32.8	53.9	8.5	10.3	0.63
08-02-2020	33.7	61.3	<5.0	12.8	0.67
14-02-2019	31.8	55.2	7.9	8.6	0.66
15-02-2020	29.7	59.7	6.5	9.5	0.67
22-02-2020	35.7	61.4	5.8	8.9	0.63
24-02-2020	32.5	55.3	5.5	9.8	0.59
26-02-2020	34.9	58.8	6.6	9.7	0.61
28-02-2020	31.2	55.4	<5.0	10.3	0.57
05-03-2020	35.6	48.3	<5.0	8.4	0.55
06-03-2020	39.4	57.5	8.5	10.8	0.62
09-03-2019	41.2	58.7	7.9	8.6	0.64
10-03-2020	42.5	61.4	<5.0	9.8	0.53
13-03-2020	38.3	60.8	6.9	8.3	0.64
14-03-2020	39.5	56.6	<5.0	8.9	0.59
17-03-2020	42.8	58.4	6.9	7.7	0.57
Max.	42.8	62.1	8.5	12.8	0.67
Min.	26.8	48.3	5.5	6.3	0.53
Avg.	34.77	56.94	7.08	9.28	0.60

MEENU KAUSHIK
 SR. ANALYST
 (Tested By)

ARJUN RAWAT
 (Checked By)



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Test Report

Sample No.: VEL/APL/AN/01-06 Report No.: VEL/N/2001/001-006
Project Name: M/s Adani Power Ltd. Reporting Date: 31/01/2020
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunder pahari, District-Godda
Jharkhand.
Testing Protocol/ Method: As per CPCB/SPCB/MoEF & CC/IS-9989

NOISE LEVEL MONITORING RESULTS

Location	Date of Monitoring	Noise Level in dB(A)	
		Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)
		Minimum-Maximum	Minimum-Maximum
CORE ZONE AREA (BATHI TOLA)	06/01/2020	45.7 - 59.1	30.5 - 41.2
Village-DAHUBERA	13/01/2020	47.2 - 57.5	34.9 - 46.7
Village-GAMARO	18/01/2020	50.4 - 61.2	34.8 - 45.2
Village-JITPUR	21/01/2020	46.7 - 58.6	36.7 - 48.5
Village-PAHARPUR	25/01/2020	46.9 - 57.1	38.7 - 49.1
Village-JIYAJORI	31/01/2020	43.8 - 52.6	37.7 - 47.2

Note: Mine development is not started (Mine is not operational).

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ANALYST

ADHIN RAJWAT
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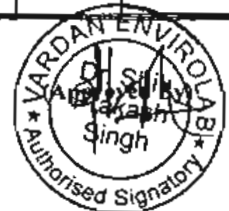
Test Report

Sample Number:	VEL/APL/W/01	Report No.:	VEL/W/2001/23/001
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village-BATHI TOLA	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012, APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H' B Electrometric Method	7.76	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5 Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 5.0	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	225.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	73.85	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	201.62	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl' B, Argentometric Method	50.64	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)		1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	9.90	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	361.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	10.31	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.42	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	12.62	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.30	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.23	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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ANALYST

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Test Report

Sample No.: VEL/APL/W/01			Report No: VEL/W/2001/23//001		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	602.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.39	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.12	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Test Report

Sample Number:	VEL/APL/W/02	Report No.:	VEL/W/2001/23/002
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village-JETKA TOLA	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H' B Electrometric Method	7.63	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	201.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	68.15	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	183.14	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl' B, Argentometric Method	49.54	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	7.52	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	331.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.93	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.41	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.23	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.24	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.29	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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(Checked By)
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Test Report

Sample No.: VEL/APL/W/02			Report No: VEL/W/2001/23/002		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	552.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.24	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.11	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

MEENU KAUSHIK

SE. ANALYST

(Checked By)

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Test Report

Sample Number:	VEL/APL/W/03	Report No.:	VEL/W/2001/23/003
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- RAMPUR	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.56	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	1.4	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	145.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	39.78	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	116.74	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	28.65	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	11.12	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	216.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.89	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.62	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	6.31	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.24	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.35	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

VEENU KAUSHIK
 Sr. Analyst

ARJUN RAWAT
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Test Report

Sample No.: VEL/APL/W/03			Report No: VEL/W/2001/23/003		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	360.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.38	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

MEENU KAUSHIK

SR ANALYST

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Test Report

Sample Number:	VEL/APL/W/04	Report No.:	VEL/W/2001/23/004
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- KEROJORI BARA	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.75	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5 Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	230.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	75.89	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	178.65	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	50.21	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	9.88	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	349.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	12.50	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.33	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	11.67	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.27	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.19	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/W/04			Report No: VEL/W/2001/23/004		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	582.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.36	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Test Report

Sample Number:	VEL/APL/W/05	Report No.:	VEL/W/2001/23/005
Name & Address of the Party:	M/s Adani Power Ltd. Jilpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- PAHARPUR	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-R' B Electrometric Method	7.82	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA, 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	218.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	71.69	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	183.24	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	44.12	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	9.51	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	341.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	11.50	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.74	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	8.96	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.22	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.26	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

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Test Report

Sample No.: VEL/APL/W/05			Report No: VEL/W/2001/23/005		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	568.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.52	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.10	mg/l	1.5
26.	Manganese as Mn	APIIA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APIIA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APIIA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

MEENU KAUSHIK
SR ANALYST

ARJUN RAWAT
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Test Report

Sample Number:	VEL/APL/W/06	Report No.:	VEL/W/2001/23/006
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- DAHUBERA	Reporting Date:	29/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Period of Analysis:	23/01/2020 to 28/01/2020
Parameter Required:	As per Work Order	Receipt Date:	23/01/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	21/01/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.80	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	198.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	73.87	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	179.25	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	42.06	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	BDL(DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	3.32	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	438.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	12.65	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.43	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	4.21	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.15	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.30	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MEENU KAUSHIK
Sr. Analyst

ARJI IN RAWAT

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Test Report

Sample No.: VEL/APL/W/06			Report No: VEL/W/2001/23/006		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	730.00	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.27	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Test Report

Sample Number:	VEL/APL/W/07	Report No.:	VEL/W/2001/23/007
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
		Party Reference No.:	NIL
		Reporting Date:	29/01/2020
Sample Description:	SURFACE WATER	Period of Analysis:	23/01/2020 to 28/01/2020
Sample Location:	Down Stream of Kewari Nala	Receipt Date:	23/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Sampling Date:	21/01/2020
Parameter Required:	As per Work Order	Sampling Quantity:	2.0 Ltr
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.78	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	7.8	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	151.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	46.13	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	120.65	mg/l
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	32.16	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl ⁻ B Iodometric Method	BDL(DL 0.02 mg/l)	
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	2.12	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	246.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.74	mg/l
15.	Fluoride as F	APHA , 4500-F - D, SPADNS Method	1.36	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) Chromotropic Method	8.01	mg/l
17.	Iron as Fe	APHA , 3500-Fe B I,10 Phenanthroline Method	0.34	mg/l
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL (**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l

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Test Report

Sample No.: VEL/APL/W/07			Report No: VEL/W/2001/23/007	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	410.00	µS/cm
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.52	mg/l
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	25.40	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.2	mg/l

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Test Report

Sample Number:	VEL/APL/W/08	Report No.:	VEL/W/2001/23/008
Name & Address of the Party:	M/s Adani Power Ltd. Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
		Party Reference No.:	NIL
		Reporting Date:	29/01/2020
		Period of Analysis:	23/01/2020 to 28/01/2020
Sample Description:	SURFACE WATER	Receipt Date:	23/01/2020
Sample Location:	Up- Stream of Kewari Nala	Sampling Date:	21/01/2020
Sample Collected by:	Vardan EnviroLab Representative	Sampling Quantity:	2.0 Ltr
Parameter Required:	As per Work Order	Sampling Type:	Grab
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H' B Electrometric Method	7.63	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL(DL 5 Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	5.2	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	124.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	39.98	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	102.31	mg/l
9.	Chloride as Cl	APHA, 4500-Cl' B, Argentometric Method	25.49	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(DL 0.02 mg/l)	
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	5.89	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	211.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.86	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.10	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	0.88	mg/l
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.41	mg/l
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

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Test Report

Sample No.: VEL/APL/W/08			Report No: VEL/W/2001/23/008	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	352	µS/cm
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.54	mg/l
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	18.60	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	5.8	mg/l

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Test Report

Sample Number:	VEL/APL/01	Report No.:	VEL/S/2001/23/001
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Project Site (Bathi Tola) Core Zone Area	Reporting Date:	29/01/2020
Sample Collected by	Vardan EnviroLab Team	Period of Analysis:	23/01/2020 to 28/01/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	23/01/2020
		Sampling Date:	21/01/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.81	--
2.	Conductivity	IS:14767 by Conductivity meter	0.348	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78, Issue No.-01 & Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81, Issue No.-01 & Issue Date-14/02/2013	36.25	%
6.	Bulk density	SOP , SP-80, Issue No.-01 & Issue Date-14/02/2013	1.65	gm/cc
7.	Chloride as Cl	SOP , SP-85, Issue No.-01 & Issue Date-14/02/2013	71.00	mg/100gm
8.	Calcium as Ca	SOP , SP-82, Issue No.-01 & Issue Date-14/02/2013	56.35	mg/100gm
9.	Sodium as Na	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	63.21	mg/100gm
10.	Potassium as K	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	91.54	kg./hec.
11.	Iron as Fe	USEPA 3050B	0.91	mg/100gm
12.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.68	%
13.	Magnesium as Mg	SOP , SP-83, Issue No.-01 & Issue Date-14/02/2013	40.84	mg/100gm
14.	Available Nitrogen as N	IS:14684 Distillation Method	182.00	kg./hec.
15.	Available Phosphorus (P)	SOP , SP-86, Issue No.-01 & Issue Date-14/02/2013	51.00	kg./hec.
16.	Zinc as Zn	USEPA 3050B	0.53	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.85	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.42	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.39	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.95	mg/100gm
21.	Copper as Cu	USEPA 3050B	0.80	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.61	mg/100gm

Note- SOP- Standard operating procedure

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Test Report

Sample Number:	VEL/APL/02	Report No.:	VEL/S/2001/23/002
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Project Site (Jetka Tola)	Reporting Date:	29/01/2020
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	23/01/2020 to 28/01/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	23/01/2020
		Sampling Date:	21/01/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.89	--
2.	Conductivity	IS:14767 by Conductivity meter	0.335	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78, Issue No.-01 & Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81, Issue No.-01 & Issue Date-14/02/2013	26.79	%
6.	Bulk density	SOP , SP-80, Issue No.-01 & Issue Date-14/02/2013	1.38	gm/cc
7.	Chloride as Cl	SOP , SP-85, Issue No.-01 & Issue Date-14/02/2013	51.05	mg/100gm
8.	Calcium as Ca	SOP , SP-82, Issue No.-01 & Issue Date-14/02/2013	46.00	mg/100gm
9.	Sodium as Na	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	54.13	mg/100gm
10.	Potassium as K	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	89.47	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.61	%
12.	Magnesium as Mg	SOP , SP-83, Issue No.-01 & Issue Date-14/02/2013	32.16	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	221.00	kg./hec.
14.	Available Phosphorus	SOP , SP-86, Issue No.-01 & Issue Date-14/02/2013	12.34	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.51	mg/100gm
16.	Zinc as Zn	USEPA 3050B	7.85	mg/100gm
17.	Manganese as Mn	USEPA 3050B	6.24	mg/100gm
18.	Chromium as Cr	USEPA 3050B	1.34	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.54	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.66	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.29	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.85	mg/100gm

Note- SOP- Standard operating procedure

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Test Report

Sample Number:	VEL/APL/03	Report No.:	VEL/S/2001/23/003
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Rampur	Reporting Date:	29/01/2020
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	23/01/2020 to 28/01/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	23/01/2020
		Sampling Date:	21/01/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.76	--
2.	Conductivity	IS:14767 by Conductivity meter	0.341	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78, Issue No.-01 & Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81, Issue No.-01 & Issue Date-14/02/2013	29.66	%
6.	Bulk density	SOP , SP-80, Issue No.-01 & Issue Date-14/02/2013	1.42	gm/cc
7.	Chloride as Cl	SOP , SP-85, Issue No.-01 & Issue Date-14/02/2013	53.65	mg/100gm
8.	Calcium as Ca	SOP , SP-82, Issue No.-01 & Issue Date-14/02/2013	43.44	mg/100gm
9.	Sodium as Na	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	56.74	mg/100gm
10.	Potassium as K	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	112.85	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.76	%
12.	Magnesium as Mg	SOP , SP-83, Issue No.-01 & Issue Date-14/02/2013	34.26	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	239.00	kg./hec.
14.	Available Phosphorus	SOP , SP-86, Issue No.-01 & Issue Date-14/02/2013	21.54	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.65	mg/100gm
16.	Zinc as Zn	USEPA 3050B	17.23	mg/100gm
17.	Manganese as Mn	USEPA 3050B	15.12	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.42	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.73	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.81	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.74	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.54	mg/100gm

Note- SOP- Standard operating procedure

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Test Report

Sample Number:	VEL/APL/04	Report No.:	VEL/S/2001/23/004
Project:	M/s Adani Power Ltd. Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Kerojori Bara	Reporting Date:	29/01/2020
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	23/01/2020 to 28/01/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	23/01/2020
		Sampling Date:	21/01/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.75	--
2.	Conductivity	IS:14767 by Conductivity meter	0.323	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	35.81	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.34	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	41.63	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	25.49	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	21.43	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	135.32	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.76	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	9.83	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	285.51	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	37.63	kg./hec.
15.	Zinc as Zn	USEPA 3050B	2.89	mg/100gm
16.	Manganese as Mn	USEPA 3050B	0.87	mg/100gm
17.	Chromium as Cr	USEPA 3050B	0.44	mg/100gm
18.	Lead as Pb	USEPA 3050B	0.35	mg/100gm
19.	Iron as Fe	USEPA 3050B	1.59	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.72	mg/100gm
21.	Copper as Cu	USEPA 3050B	1.56	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.68	mg/100gm

Note- SOP- Standard operating procedure

MEENKA KAUSHIK
Sr. Analyst

ARJUN RAJAT
Sr. Analyst



NOTE: a) The results listed refer only to the tested samples & applicable parameters
b) Total liabilities of our lab will be restricted to the invoice amount only
c) The sample will be destroyed after retention time unless otherwise specified
d) This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law

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