

Greenfield Project Capacity 200 KLD , Grain based Ethanol Plant along with of 6.0 MW.Cogeneration Power plant by M/s Swadeshi Fuels LLP. Industrial Plot No. NS G-07, Industrial Area,Tehsil Nawanagar, District-Buxar, Bihar.	
Ambient Air Quality Data Nov-2022	Location: AQ1 (Project Site)

25 24 32.07N
84 12 03.1E

S.No	Date	PM10,µg/m3	PM 2.5, µg/m3	SO ₂ µg/m3 ,	NO ₂ ,µg/m3	CO, µg/m3
		IS:5182:Pt-23	IS:5182:Pt-23	IS:5182:Pt-2	IS:5182:Pt-6	IS:5182:Pt-10
1	01.11.2022	72.2	39.6	6.9	13.3	220
2	04.11.2022	70.0	38.8	6.2	11.0	190
3	08.11.2022	68.9	37.5	7.3	9.0	210
4	12.11.2022	60.3	31.1	6.3	12.1	260
5	15.11.2022	66.2	34.5	6.4	9.1	170
6	19.11.2022	71.1	35.6	6.5	9.7	250
7	22.11.2022	57.9	31.8	6.7	10.7	220
8	26.11.2022	68.7	36.6	6.1	11.7	170
	Min	57.9	31.1	6.1	9	170
	Max	72.2	39.6	7.3	13.3	260
	Average	66.9	35.7	6.6	10.8	211.3
	98 Percentile	72.0	39.5	7.2	13.1	258.6
NAAQS, For 24 hourly monitoring (except CO for One hour)		100	60	80	80	4000

0.55
0.55
0.54
0.52
0.52
0.50
0.55
0.53

Air Quality

Ground Water Quality

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Ground water Quality Nov-2022					
S.No	Parameter	Unit	Standard Limit (IS-10500:2012, RA 2018)		GW1
			Desirable Limit	Permissible Limit	Near Project site
1	Colour	Hazen	5	15	<5
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Turbidity	NTU	1	5	<1
4	pH Value	-	6.5-8.5	No Relaxation	7.82
5	Total Dissolved Solids (TDS)	mg/l	500	2000	420
6	Total Hardness (as CaCO ₃)	mg/l	200	600	223
7	Total Alkalinity (as CaCO ₃)	mg/l	200	600	186
8	Chlorides (as Cl)	mg/l	250	1000	63
9	Fluoride (as F)	mg/l	1	1.5	0.5
10	Calcium(as Ca ²⁺)	mg/l	75	200	54
11	Magnesium (as Mg ²⁺)	mg/l	30	100	22
12	Sulphate (as SO ₄)	mg/l	200	400	60
13	Nitrate(as NO ₃)	mg/l	45	No Relaxation	17
14	Iron (as Fe)	mg/l	1	No Relaxation	0.33
15	Aluminum (as Al)	mg/l	0.03	0.2	<0.01
16	Copper (as Cu)	mg/l	0.05	1.5	<0.01
17	Manganese (as Mn)	mg/l	0.1	0.3	<0.01
18	Boron (as B)	mg/l	0.5	1	<0.01
19	Zinc (as Zn)	mg/l	5	15	<0.01
20	Selenium (as Se)	mg/l	0.01	No Relaxation	<0.01
21	Arsenic (as	mg/l	0.01	0.05	<0.01

414 TDS

133.8 CaH

53.52 Ca+2

21.4 Mg+2

7.02 Anion

7.02 Cation

4.5 Ca+Mg

57.17 Na

621 Conductivity

	As)				
22	Cadmium (as Cd)	mg/l	0.003	No Relaxation	<0.01
23	Total Chromium (as Cr ³⁺)	mg/l	0.05	No Relaxation	<0.01
24	Cyanide (as CN)	mg/l	0.05	No Relaxation	<0.01
25	Lead (as Pb)	mg/l	0.01	No Relaxation	<0.01
26	Mercury (as Hg)	mg/l	0.001	No Relaxation	<0.001
27	Nickel (as Ni)	mg/l	0.02	No Relaxation	<0.01
28	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	0.001	0.002	<0.001
29	Anionic Detergent (as MBAS)	mg/l	0.2	1	<0.01
30	Silica (as SiO ₂)	mg/l	,---	,---	8.9
31	Phosphate (as PO ₄)	mg/l	,---	,---	1.6
32	Specific Conductivity	µS/cm	,---	,---	630
Bacteriological Parameter					
1	Total Coliform	MPN/100ml	Shall not be detectable in any 100ml Sample		Not Detected (<2)
2	<u>E.coli</u>	MPN /100ml	Shall not be detectable in any 100ml Sample		Absent (<2)

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Noise Quality data Nov-2022						
S.No.	PROJECT SITE	ZONE	LIMIT as per CPCB Guidelines Leq, dB(A)		Observed value Leq, dB(A)	
			DAY*	NIGHT**	DAY*	NIGHT**
1	Project Site	Industrial Area	75	70	47.6	34.8
*	Day time	(6.00AM TO 10.00PM)				
**	Night time	(10.00PM TO 6.00AM)				

Noise Quality

Soil Quality

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Soil Quality Data (Nov-2022)			
			SQ1
S.No	Parameter	Unit	Project Site
1	Texture	-	Sandy Clay loam
2	Particle Size Distribution		
	Sand	%	61.8
	Silt	%	13.5

	Clay	%	24.7
3	pH (1:2 Suspension)	-	7.31
4	Electrical Conductivity (1:2 Suspension)	$\mu\text{S}/\text{cm}$	280
5	Moisture Content	%	8.2
6	Cation Exchange Capacity	meq/100gm	14.0
7	Available Potassium (as K)	mg/kg	64
8	Exchangeable Sodium (as Na)	mg/kg	116
9	Exchangeable Calcium (as Ca)	mg/kg	2138
10	Exchangeable Magnesium (as Mg)	mg/kg	311
11	Sodium Absorption Ratio	-	0.62
12	Organic Carbon	%	0.88
13	Total Nitrogen (as N)	mg/kg	38
14	Nitrate (as NO_3)	mg/kg	2.1
15	Total Phosphorus (as PO_4)	mg/kg	6.3
16	Iron (as Fe)	mg/kg	1.7
17	Zinc (as Zn)	mg/kg	1.1
18	Copper (as Cu)	mg/kg	0.8
19	Boron (as B)	mg/kg	1.2
20	Manganese (as Mn)	mg/kg	2.8
21	Water Holding Capacity	%	31.7
22	Permeability	cm/hr	2.1
23	Porosity	%	28.6
24	Bulk Density	gm/cc	1.33

Surface water Quality

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SURFACE WATER QUALITY STUDY (Nov-2022)

S.No.	Parameter	Unit	S.W. 1
			Thora Baba River
1.	Color	Hazen	<5
2.	Turbidity	NTU	12
3.	Temperature	°C	21.9
4.	pH Value	-	7.31
5.	Dissolved Oxygen	mg/l	6.4
6.	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/l	2.3
7.	Chemical Oxygen Demand	mg/l	9.1
8.	Total Dissolved Solids	mg/l	310
9.	Total Hardness (as CaCO ₃)	mg/l	186
10.	Total Alkalinity (as CaCO ₃)	mg/l	123

464.41 **Conductivity**

309.76 **TDS**

44.64 **Ca+2**

111.60 **CaH**

11.	Chlorides (as Cl)	mg/l	56	17.86	Mg+2
12.	Fluoride (as F)	mg/l	0.4	3.72	Ca+2 + Mg+2
13.	Calcium (as Ca ²⁺)	mg/l	45	5.02	Anion
14.	Magnesium (as Mg ²⁺)	mg/l	18	29.97	Na
15.	Sodium (as Na ⁺)	mg/l	30	5.08	Cation
16.	Potassium (as K ⁺)	mg/l	2.3	0.69	SAR
17.	Sulphate (as SO ₄)	mg/l	46		
18.	Total Kjeldahl Nitrogen (as N)	mg/l	1.9		
19.	Free Ammonia (as NH ₃)	mg/l	0.2		
20.	Nitrate (as NO ₃)	mg/l	1.7		
21.	Silica (as SiO ₂)	mg/l	5.8		
22.	Phosphate (as PO ₄)	mg/l	2.1		
23.	Iron (as Fe)	mg/l	0.6		
24.	Aluminum (as Al)	mg/l	<0.01		
25.	Boron (as B)	mg/l	<0.01		
26.	Copper (as Cu)	mg/l	<0.01		
27.	Manganese (as Mn)	mg/l	<0.01		
28.	Zinc (as Zn)	mg/l	<0.01		
29.	Selenium (as Se)	mg/l	<0.01		
30.	Arsenic (as As)	mg/l	<0.01		
31.	Cadmium (as Cd)	mg/l	<0.01		
32.	Total Chromium (as Cr ³⁺)	mg/l	<0.01		
33.	Cyanide (as CN)	mg/l	<0.01		

34.	Lead (as Pb)	mg/l	<0.01
35.	Mercury (as Hg)	mg/l	<0.001
36.	Nickel (as Ni)	mg/l	<0.01
37.	Total Suspended Solids	mg/l	27
38.	Sodium Adsorption Ratio	-	0.70
39.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	<0.001
40.	Anionic Detergent (as MBAS)	mg/l	<0.01
41.	Specific Conductivity	μS/cm	470
42	Total Coliform	MPN/100ml	130
43	Faecal Coliform	MPN/100ml	23