Godavari

Godavari Biorefineries Ltd

GBL (D)/SMR/KSPCB/2019-2020/224 Date: 28.09.2019

To,
The Member Secretary
Karnataka State Pollution Control Board
#48 Parisar Bhavan
4th and 5th Floor, church Street
BENGALURU-560 001

Submitted through: Environmental officer, Regional Office, KSPCB, Bagalkot.

Sub: Submission of Environmental Statement for the year ending 31st March 2019 ---Reg.

R/Sir,

With reference to the above, please find here with the Environmental Statement for the year ending 31st March 2019 in duplicate.

Kindly find the same in order and acknowledge the same.

Yours faithfully
For Godavari Bio-Refineries Ltd.

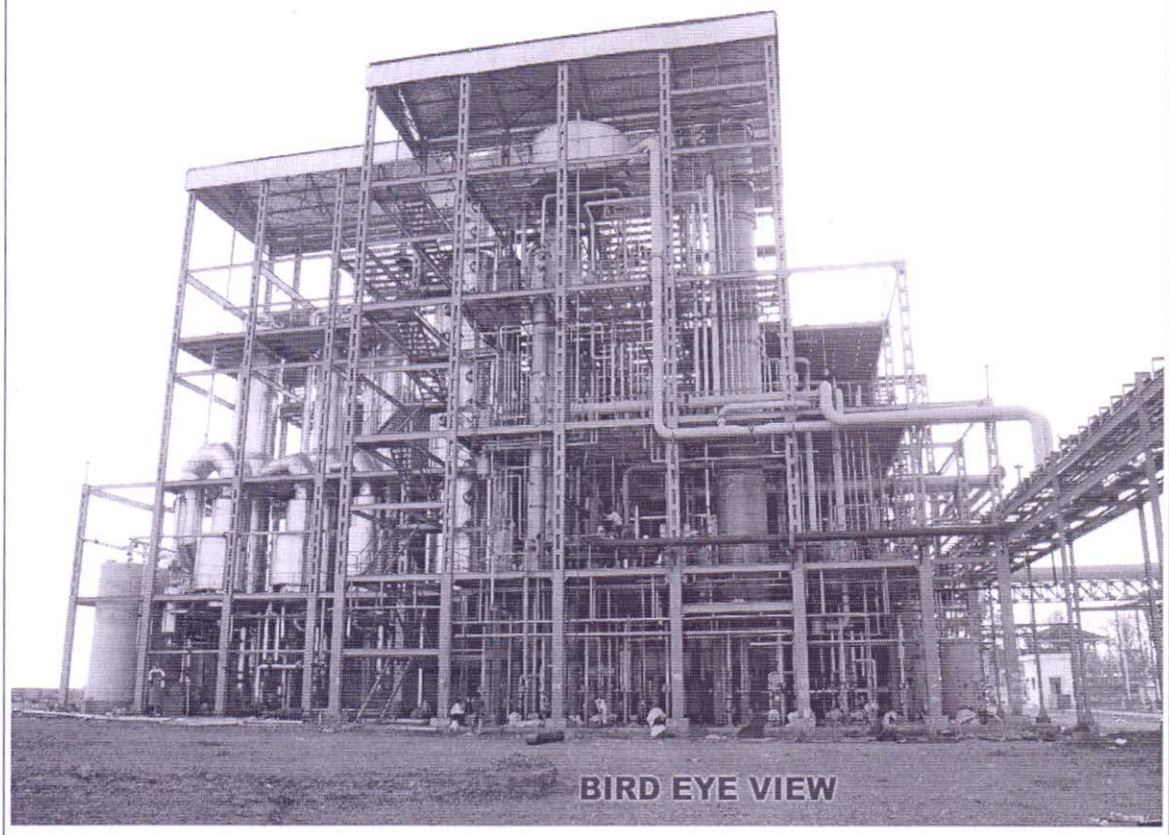
S.U.Godage
General Manager

Encl. Two copies of Environmental Statement.

Works : P.O Sameerwadi, Tal Mudhol, Dist Bagalkot, Karnataka State - 587 316 INDIA
Tel : (91-08350) 260040/ 47/ 48 / 81/ 260181 Fax : (91-08350) 260037 / 260021 Gram : SUGAR MILLS Sameerwadi

Regd. Office : Somaiya Bhavan, 45/47 Mahatma Gandhi Road, Fort, Mumbai - 400 001 INDIA
Tel : (91-22) 2204 8272 / 2265 8430 Fax : (91-22) 2265 8797

Somaiya GROUP



BIRD EYE VIEW

ENVIRONMENTAL STATEMENT FORM V FOR THE YEAR ENDING

31ST MARCH 2019

SUBMITTED BY

GODAVARI BIOREFINERIES LTD.
(DISTILLERY DIVISION)
SAMEERWADI-587316
TAL: MUDHOL, DIST: BAGALKOT

FORM-V

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2019.

DISTILLERY

PART- A

1.	Name and address of the owner / Occupier of the industry, operation / Process	Godavari Biorefineries Limited, (Distillery Division) Sameerwadi-587316 Tal: Mudhol ,Dist :Bagalkot State :Karnataka
2.	Industry Category Primary- (SIC Code) Secondary (SIC Code)	:2000
3.	Installed Capacity-Unit	:9998
4.	Year of Establishment	:1984
5.	Date of the last Environmental Statement Submitted	28th September, 2018

PART- B

WATER AND RAW MATERIAL CONSUMPTION

1. Water Consumption (Cum/day) :-

Sr. No.	Operation	During the previous Financial Year 2017– 2018	During the Current Financial Year 2018 – 2019
I	Process	780	780
II	Cooling	30	30
III	Domestic	25	25

2. Products :-

Sr. No.	Name of Product	Process Water Consumption per product output (KL/KL of Spirit Produced)	
		During the previous financial year 2017 – 2018	During the Current Financial Year 2018 – 2019
I	Rectified Spirit	4.60	4.62

2. Raw Material Consumption :

Sr. No.	Raw Material	Product	Consumption of Raw Material Per Unit of Output. (Kgs/KL of Spirit Produced)	
			2017 - 2018	2018 - 2019
1	Molasses	Rectified Spirit	3770	3450
2	Yeast Used		Recycled	Recycled
3	Urea		---	
4	D.A.P.		---	
5	Antifoam		---	
6	Bleaching Powder		----	
7	Steam		4245	4360
8	Power (KWH/ KL)		592	466
		By-Product	Litres/KL of Spirit Produced	
		Fusel Oil	Nil	Nil

Note: Power consumption is increased due to commissioning of Second stage Evaporation plant & Incineration boiler.

Sr. No.	Product	Total Quantity Produced in KL	
		2017 - 2018	2018 - 2019
A	Rectified Spirit	11608.0430	14183.9408
B	Extra Neutral Alcohol	18871.070	8497.0365
C	Impure Alcohol	2641.2525	1453.2867
D	Ethanol	3229.6350	24365.736
	Total production	36350.00	48500.00
E	Fusel Oil	Nil	Nil

Industry may use codes if disclosing the details of raw material would violate any contractual obligations, otherwise all the industries have to name the raw materials used.

PART- C
Pollution Discharged to Environment per unit of output
(Parameter as specified in the Consent Issued)

Sr. No.	Pollutants	Quantity KL/day	Concentration	Concentration Discharged (Mass/Day)	Percentage of Variation prescribed standard with reasons
I	Waste water (BOD)	523	Nil	N.A.	25% of the Spentwash generated i.e 325 KL/day is utilized for bio Composting and remaining 75 % of the spentwash generated after 2 stage evaporation is utilized in Incineration boiler (375 KL/day)
II	Air Stack-1	Not in use			
	Stack-2	Not in use			
	Stack -3		119		

PART- D

HAZARDOUS WASTES

As per specified under Hazardous Waste (Management and Handling) Rules, 1989

Sr. No.	Hazardous Waste	Total Quantity (Tonnes)	
		During the previous financial year 2017 – 2018	During the current financial year 2018 – 2019
I	From Pollution Control Facilities	Nil	Nil

PART- E

SOLID WASTES

Sr. No.	Solid Waste	Total Quantity in Tonnes	
		During the previous financial year 2017 – 2018	During the current financial year 2018 – 2019
I	From Process (by products) a) Yeast Sludge	4543	6062
II	From Pollution Control Facilities a) Biogas plant Sludge b) Ash	523 20100	539 27560
III	Quantity recycled or reutilised within the unit	5066 MT of Sludge utilized for Biocompost process 8500 MT of ash sold to brick manufactures Balance -11600 MT	6601 MT of sludge & 14000 MT of ash utilised in the Biocompost.10100 MT of ash sold to Brick manufacture Balance-15060 MT

PART-F

Please specify the characteristics (In terms of concentrations and quantity) of hazardous wastes as well as solid wastes and indicate disposal practice adopted for both the categories of wastes.

Hazardous wastes: Not applicable.

PART-G

Impact of the pollution abatement measures on conservation of natural resources and consequently on the cost of production

325 KL/day spentwash is utilized for biogas plant followed by biocomposting. 375 KL/day of concentrated spentwash after two stage evaporation is utilized in the Incineration boiler.

PART – H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution

Industry has commissioned the Incineration boiler of 40 TPH for utilization of spentwash after multiple effect evaporation in the boiler as fuel. Seventy-five percent of the spentwash generated from the process is utilized for the Incineration boiler and remaining twenty-five percent spentwash for the composting activities so as to produce the organic manure. Electrostatic precipitator (ESP) is installed for emission control for the suspended particulate matter through flue gas.

PART- I

Any other particulars for improving the quality of environment.

Condensate polishing unit I (Activated Sludge process) and unit II(RO Process) are provided for the treatment of process condensate from MEE and spentless generated from process recycled back to cooling tower for cooling purpose.

This year additional plantation of 1800 trees was carried out for the minimization of fugitative emissions

Additional two fields inclusion to ESP so as to increase the efficiency .

Boiler Stack monitoring results:-

Month & Year	Stack No-1 40 TPH Incineration boiler Stack ID- 1.7 mtr, Height – 81 mtr Fuel : Concentrated Spentwash & Coal Fuel Ratio : 80 : 20				
	Flue gas velocity (m/Sec)	Flue gas Outlet temp deg C	Particulate matter(SPM) mg/Nm3	SO2 mg/nm3	NOX mg/Nm3
June.2018	15.3	146	112	79	40
July.2018	15.7	142	115	82	41
Oct.18	13.3	168	144	68	48
Dec.18	15.5	161	119	83	40
Jan. 19	15.1	167	113	78	42
Feb.19	14.7	171	115	80	44
March.19	14.5	173	119	82	45

ESP – Electrical meter reading:-

Month & Year	Working days	ESP Electrical meter reading			
		Initial	Final	Total (MW)	In KWH units
April.2018	28.13	279.79	300.57	20.78	20780
May.2018	24.16	300.57	324.11	23.54	23540
June.2018	13.08	324.11	336.45	12.34	12340
July.2018	27.00	336.45	367.73	31.28	31280
August.2018	12.41	367.73	385.56	17.83	17830
Sept.2018	16.40	385.56	400.92	15.36	15360
Oct.18	26.30	400.92	423.94	23.02	23020
Nov.18	21.40	423.94	440.09	16.15	16150
Dec.18	30.50	440.09	465.67	25.58	25580
Jan. 19	30.80	465.57	487.38	21.81	21810
Feb.19	26.60	487.38	505.82	18.44	18440
March.19	30.60	505.82	527.40	21.58	21580
	287.38				247710
Average unit consumption =247710 /287.38 =861.59 KWH units per day					

Ambient Air quality monitoring details:

Month & Year	Location	Wind direction	Parameters			
	Sampling station		$PM_{2.5}$ $\mu g/m^3$	PM_{10} $\mu g/m^3$	NO_x $\mu g/m^3$	SO_2 $\mu g/m^3$
June.18	Near distillery main gate	Easterly	24	65	14	10
July.2018	Near BTP Plant	Easterly	21	59	10	07
	Near distillery main gate	Easterly	23	64	12	8
	Near BTP Plant	Easterly	20	55	8	6
Oct 2018	Near distillery main gate	Easterly	21	58	12.00	08.00
	Near BTP Plant	Easterly	18	50	08.00	05.00
Dec 2018	Near distillery main gate	Easterly	25	71	14.00	10.00
	Near BTP Plant	Easterly	23	75	12.00	08.00
Jan 2019	Near distillery main gate	Easterly	27	73	14.00	12.00
	Near BTP Plant	Easterly	22	68	12.00	08.00
	Near Distillery Office	Easterly	20	62	10.00	08.00
Feb 2019	Near distillery main gate	Easterly	31	78	15.00	12.00
	Near BTP Plant	Easterly	24	70	10.00	08.00
March 2019	Near distillery main gate	Easterly	34	79	15.00	13.00
	Near BTP Plant	Easterly	26	72	10.00	08.00

Effluent Sample Analysis report: Biomethanated Sample
:

Sl No	Parameter	Unit	Results					Test method
			1	2	3	4	5	
			26.06.2018	25.07.2018	10.10.2018	01.012.2018	25.02.2019	
1	pH		7.91	8.06	8.25	8.46	8.21	IS: 3025(P-11)1983
2	Alkalinity	mg/lit	10780	10910	11850	11274	11230	IS: 3025(P-23)1986
3	Volatile solids	mg/lit	3850	3790	2400	3610	3840	APHA 22nd edition2012,5056C
4	COD	mg/lit	42086	48230	42872	46956	45690	IS: 3025(P-58) 2006
5	BOD	mg/lit	4650	5130	5350	5390	5072	IS: 3025(P-44)1993
6	Total solids	mg/lit	71640	82223	79760	78192	79670	APHA 22nd edition2012,2540 B
7	Total Volatile solids	mg/lit	30890	34540	37240	35130	35910	APHA 22nd edition2012, 240- E,G
8.	Total Inorganic solids	mg/lit	40750	47683	42520	43062	43760	APHA 22nd edition2012, 2540 C
9.	Chlorides	mg/lit	7851	7127	9572	7815	6935	IS: 3025(P-32)1988
10.	Sulphates	mg/lit	3628	4524	2524	4731	4381	IS: 3025(P-24)1986
11.	Potash	mg/lit	10760	14560	14910	15170	14320	IS: 3025(P-45)1993

Trade sample Analysis report: Raw Spentwash sample

Sl No	Parameter	Unit	Results			Test method
			1	2	3	
			25.07.2018	04.02.2019	11.03.2019	
1	pH		4.74	3.77	3.36	IS: 3025(P-11)1983
2	COD	mg/lit	147277	1,18,852	1,23,420	IS: 3025(P-58) 2006
3	BOD	mg/lit	56990	52,370	53,910	IS: 3025(P-44)1993
4	Total solids	mg/lit	228920	1,76,240	1,81,690	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	90340	81,380	82,750	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	138580	94,860	98,940	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	19448	10,940	11,178	IS: 3025(P-32)1988
8.	Sulphates	mg/lit	13893	12,165	12,445	IS: 3025(P-24)1986
9.	Potash	mg/lit	18020	15,950	16,180	IS: 3025(P-45)1993

Trade sample Analysis report: Spentwash sample after Ist Stage Evaporation

Sl No	Parameter	Unit	Results			Test method
			1	2	3	
			26.06.2018	04.02.2019	11.03.2019	
1	pH		4.32	3.69	3.36	IS: 3025(P-11)1983
2	COD	mg/lit	298112	2,61,620	2,74,080	IS: 3025(P-58) 2006
3	BOD	mg/lit	76500	1,14,270	1,20,670	IS: 3025(P-44)1993
4	Total solids	mg/lit	341200	3,85,410	3,89,210	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	82600	1,88,640	1,85,760	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	258600	1,96,770	2,03,450	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	23540	29,655	30,826	IS: 3025(P-32)1988
8.	Sulphates	mg/lit	19310	23,102	23,753	IS: 3025(P-24)1986
9.	Potash	mg/lit	21600	32,760	32,800	IS: 3025(P-45)1993

Trade sample Analysis report: Spentwash 58 Bx sample after IInd Stage Evaporation

Sl No	Parameter	Unit	Results			Test method
			1	2	3	
			26.06.2018	04.02.2019	11.03.2019	
1	pH		4.39	4.80	3.89	IS: 3025(P-11)1983
2	COD	mg/lit	596224	652704	4,79,430	IS: 3025(P-58) 2006
3	BOD	mg/lit	181000	190270	1,84,210	IS: 3025(P-44)1993
4	Total solids	mg/lit	643180	720460	5,54,830	APHA 22nd edition2012,2540 B
5	Total Volatile solids	mg/lit	285700	282460	2,21,741	APHA 22nd edition2012, 240- E,G
6.	Total Inorganic solids	mg/lit	357480	438000	3,33,089	APHA 22nd edition2012, 2540 C
7.	Chlorides	mg/lit	42370	40128	34,504	IS: 3025(P-32)1988
8.	Sulphates	mg/lit	39710	31392	27,990	IS: 3025(P-24)1986
9.	Potash	mg/lit	46400	38350	31,420	IS: 3025(P-45)1993

Borewell Analysis report:

Date of Sampling: 26.06.2018

Sl No	Test parameter	Unit	Bharmappa Sanadi Kappalguddi	CBSE School Saidapur	Siddappa Kuribagi Handigund	Test Method
			1	2	3	
1	Color	Hazen	68	Colorless	80	IS: 3025(P-04)1983
2	Odor		Odorless	Odorless	Odorless	IS: 3025(P-05) 1983
3	pH		7.36	7.57	7.19	IS: 3025(P-11)1983
4	Turbidity	NTU	1.6	0.1	0.9	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	617	181	448	IS: 3025(P-23) 1986
6	COD	mg/lit	195	57	230	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	38	8	41	IS: 3025(P-44)1993
8	TDS	mg/lit	1940	479	1368	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	1018	118	575	IS: 3025(P-32)1988
10	Hadness	mg/lit	2050	345	1390	IS: 3025(P-21)1983
11	Calcium	mg/lit	724	110	641	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	59	17	52	IS: 3025(P-46)1994
13	Sodium	mg/lit	125.2	79.2	101.2	IS: 3025(P-45) 1993
14	Potassium	mg/lit	6.4	2.8	4.2	IS: 3025(P-44)1993
15	%sodium	%	11.68	33.1	10.79	By calculation
16	SAR		1.2	1.85	1.03	By calculation
17	RSC	Meq/l	-28.78	-3.29	-27.42	By calculation
18	EC	µmhos/cm	2800	739	2180	IS: 3025(P-14)1984

Sl No	Test parameter	Unit	Ulleppa Chanal Handigund	Sujata Bhadrasheety Handigund	Girish R Kulkarni Handigund	Test Method
			4	5	6	
1	Color	Hazen	70	Colorless	80	IS: 3025(P-04)1983
2	Odor		Odorless	Odorless	Odorless	IS: 3025(P-05) 1983
3	pH		7.46	7.21	7.29	IS: 3025(P-11)1983
4	Turbidity	NTU	1.8	0.6	1.4	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	529	374	560	IS: 3025(P-23) 1986
6	COD	mg/lit	272	137	338	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	49	25	63	IS: 3025(P-44)1993
8	TDS	mg/lit	1258	2086	1684	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	467	455	835	IS: 3025(P-32)1988
10	Hadness	mg/lit	1150	1460	1970	IS: 3025(P-21)1983
11	Calcium	mg/lit	380	517	661	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	49	41	77	IS: 3025(P-46)1994
13	Sodium	mg/lit	83.4	92.4	89.6	IS: 3025(P-45) 1993
14	Potassium	mg/lit	3.4	3.7	3.9	IS: 3025(P-44)1993
15	%sodium	%	13.58	12.07	8.99	By calculation
16	SAR		1.06	1.05	0.87	By calculation
17	RSC	Meq/l	-12.5	-21.78	-28.27	By calculation
18	EC	µmhos/cm	2190	3200	3200	IS: 3025(P-14)1984

Sl No	Test parameter	Unit	Mahadev S Chingundi Handigund	Test Method
			7	
1	Color	Hazen	65	IS: 3025(P-04)1983
2	Odor		Odorless	IS: 3025(P-05) 1983
3	pH		7.33	IS: 3025(P-11)1983
4	Turbidity	NTU	1.2	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	469	IS: 3025(P-23) 1986
6	COD	mg/lit	276	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	48	IS: 3025(P-44)1993
8	TDS	mg/lit	1572	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	723	IS: 3025(P-32)1988
10	Hardness	mg/lit	1900	IS: 3025(P-21)1983
11	Calcium	mg/lit	641	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	73	IS: 3025(P-46)1994
13	Sodium	mg/lit	81.3	IS: 3025(P-45) 1993
14	Potassium	mg/lit	4.0	IS: 3025(P-44)1993
15	%sodium	%	8.49	By calculation
16	SAR		0.81	By calculation
17	RSC	Meq/l	-28.75	By calculation
18	EC	µmhos/cm	2440	IS: 3025(P-14)1984

Soil Sample:-

Sample collected on: 26.06.2018

Sl No	Test parameter	Unit	Bharmappa Sanadi Kappalguddi	Devaraj Kuribagi Handigund	Ulleppa Chanal Handigund
			1	2	3
1	pH		7.96	7.81	7.79
2	Conductivity	µmhos/cm	0.291	0.269	0.403
3	Available Nitrogen	Kg/ha	314	231	289
4	Available Phosphorus	Kg/ha	29	22	45
5	Available Potassium	Kg/ha	970	1070	570
6	Organic Carbon	%	2.12	2.85	1.79
7	Sodium	%	0.011	0.015	0.095
8	Calcium	%	1.82	2.09	1.82
9	Magnesium	%	0.065	0.055	0.051
10	Cation Exchange capacity	Meq/100gm	34	39	40

Sl No	Test parameter	Unit	Mahadev S Chingundi Handigund	Girish R Kulkarni Handigund
			4	5
1	pH		8.37	8.15
2	Conductivity	µmhos/cm	0.146	0.452
3	Available Nitrogen	Kg/ha	308	239
4	Available Phosphorus	Kg/ha	45	46
5	Available Potassium	Kg/ha	930	870
6	Organic Carbon	%	1.68	2.33
7	Sodium	%	0.08	0.052
8	Calcium	%	2.85	1.92
9	Magnesium	%	0.062	0.073
10	Cation Exchange capacity	Meq/100gm	31	47

Borewell Analysis report:

Date of Sampling: 04.02.2019

Sl No	Test parameter	Unit	Shivnaik Parappa Naik	KIAAR	Sidhappa Birdi	Test Method
			1	2	3	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		8.52	8.54	8.60	IS: 3025(P-11)1983
4	Turbidity	NTU	0.2	0.1	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	230	162	156	IS: 3025(P-23) 1986
6	COD	mg/lit	22	10	8	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	1184	270	235	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	190	34	31	IS: 3025(P-32)1988
10	Hadness	mg/lit	620	358	351	IS: 3025(P-21)1983
11	Calcium	mg/lit	213	91	98	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	21	32	26	IS: 3025(P-46)1994
13	Sodium	mg/lit	125.7	75.2	47.5	IS: 3025(P-45) 1993
14	Potassium	mg/lit	9.7	1.4	1.1	IS: 3025(P-44)1993
15	%sodium	%	30.21	31.2	22.64	By calculation
16	SAR		2.19	1.72	1.1	By calculation
17	RSC	Meq/l	-7.8	-3.97	-3.94	By calculation
18	EC	µmhos/cm	1803	446	416	IS: 3025(P-14)1984

Sl No	Test parameter	Unit	Bhimappa Gurupadappa Shirol	Shivling Basappa Banaj	Adivappa Rachayya Wali	Test Method
			4	5	6	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		8.17	8.29	8.23	IS: 3025(P-11)1983
4	Turbidity	NTU	0.1	0.2	0.1	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	208	178	170	IS: 3025(P-23) 1986
6	COD	mg/lit	26	24	21	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	800	530	509	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	121	105	102	IS: 3025(P-32)1988
10	Hadness	mg/lit	540	487	493	IS: 3025(P-21)1983
11	Calcium	mg/lit	138	130	151	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	48	40	28	IS: 3025(P-46)1994
13	Sodium	mg/lit	74.3	83.0	84.5	IS: 3025(P-45) 1993
14	Potassium	mg/lit	2.5	2.3	3.2	IS: 3025(P-44)1993
15	%sodium	%	22.86	26.84	27.02	By calculation
16	SAR		1.38	1.63	1.65	By calculation
17	RSC	Meq/l	-6.74	-6.27	-6.48	By calculation
18	EC	µmhos/cm	1458	893	877	IS: 3025(P-14)1984

Date of Sampling: 11.03.2019

Sl No	Test parameter	Unit	Baramappa Hanumant Sanadi	Bhimappa Ramappa Uddappagol	Mahadev Lakkappa Ajappagol	Test Method
			1	2	3	
1	Color	Hazen	<5	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.41	7.73	8.19	IS: 3025(P-11)1983
4	Turbidity	NTU	1.2	1.1	2.7	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	390	450	490	IS: 3025(P-23) 1986
6	COD	mg/lit	28	44	45	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	8	8	IS: 3025(P-44)1993
8	TDS	mg/lit	1325	1450	1548	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	387	371	370	IS: 3025(P-32)1988
10	Hadness	mg/lit	1462	1538	1850	IS: 3025(P-21)1983
11	Calcium	mg/lit	513	490	612	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	44	76	78	IS: 3025(P-46)1994
13	Sodium	mg/lit	143.1	117.8	177.5	IS: 3025(P-45) 1993
14	Potassium	mg/lit	6.7	1.9	6.2	IS: 3025(P-44)1993
15	%sodium	%	17.47	14.27	17.21	By calculation
16	SAR		1.62	1.31	1.79	By calculation
17	RSC	Meq/l	-21.51	-21.83	-27.3	By calculation
18	EC	µmhos/cm	2210	2260	2560	IS: 3025(P-14)1984

Sl No	Test parameter	Unit	Bhimappa Gurupadappa Shirol	Paramhans G.Bangi	Test Method
			4	5	
1	Color	Hazen	<5	<5	IS: 3025(P-04)1983
2	Odor		Agreeable	Agreeable	IS: 3025(P-05) 1983
3	pH		7.92	7.83	IS: 3025(P-11)1983
4	Turbidity	NTU	0.2	0.2	IS: 3025(P-10)1984
5	Total Alkalinity	mg/lit	228	254	IS: 3025(P-23) 1986
6	COD	mg/lit	29	18	IS: 3025(P-58) 2006
7	BOD(3days @270 C	mg/lit	<4	<4	IS: 3025(P-44)1993
8	TDS	mg/lit	651	480	IS: 3025(P-16) 1984
9	Chlorides	mg/lit	198	119	IS: 3025(P-32)1988
10	Hadness	mg/lit	569	392	IS: 3025(P-21)1983
11	Calcium	mg/lit	184	137	IS: 3025(P-40) 1991
12	Magnesium	mg/lit	27	12	IS: 3025(P-46)1994
13	Sodium	mg/lit	88.1	62.6	IS: 3025(P-45) 1993
14	Potassium	mg/lit	2.4	1.5	IS: 3025(P-44)1993
15	%sodium	%	25.04	25.71	By calculation
16	SAR		1.6	1.37	By calculation
17	RSC	Meq/l	-6.89	-2.77	By calculation
18	EC	µmhos/cm	1073	815	IS: 3025(P-14)1984

Soil Sample:-Sample collected on: 04.Feb.2019

Sl No	Test parameter	Unit	Shivnaik Parappa Naik	KIAAR	Shidhappa Birdi
			1	2	3
1	pH		8.37	8.42	8.34
2	Conductivity	µmhos/cm	0.347	0.390	0.268
3	Available Nitrogen	Kg/ha	190	172	249
4	Available Phosphorus	Kg/ha	86	91	97
5	Available Potassium	Kg/ha	790	640	590
6	Organic Carbon	%	0.91	0.97	0.98
7	Sodium	%	0.08	0.05	0.05
8	Calcium	%	3.07	2.84	2.59
9	Magnesium	%	0.059	0.062	0.039
10	Cation Exchange capacity	Meq/100gm	47	51	54

Sl No	Test parameter	Unit	Bhimappa Gurupadappa Shirol	Shivling Basappa Banaj
			4	5
1	pH		8.39	8.24
2	Conductivity	µmhos/cm	0.220	0.282
3	Available Nitrogen	Kg/ha	164	196
4	Available Phosphorus	Kg/ha	78	85
5	Available Potassium	Kg/ha	710	940
6	Organic Carbon	%	0.94	0.81
7	Sodium	%	0.17	0.1
8	Calcium	%	2.69	2.36
9	Magnesium	%	0.047	0.04
10	Cation Exchange capacity	Meq/100gm	49	52

Soil Sample:-
Sample collected on:11.March.2019

Sl No	Test parameter	Unit	Bharamappa Hanmant sandi	Bhimappa Ramappa Uddappagol	Mahadev Lakkappa Ajappagol
			1	2	3
1	pH		8.11	8.04	7.79
2	Conductivity	µmhos/cm	0.247	0.790	0.338
3	Available Nitrogen	Kg/ha	135	171	220
4	Available Phosphorus	Kg/ha	82	73	85
5	Available Potassium	Kg/ha	590	960	620
6	Organic Carbon	%	0.92	0.95	1.15
7	Sodium	%	0.81	0.58	0.13
8	Calcium	%	2.84	2.19	2.13
9	Magnesium	%	0.065	0.056	0.062
10	Cation Exchange capacity	Meq/100gm	37	41	53

Sl No	Test parameter	Unit	Bhimappa Gurupadappa Shirol	Paramhans G.Bangi
			4	5
1	pH		8.43	8.29
2	Conductivity	µmhos/cm	0.489	0.259
3	Available Nitrogen	Kg/ha	171	214
4	Available Phosphorus	Kg/ha	89	97
5	Available Potassium	Kg/ha	730	380
6	Organic Carbon	%	0.97	0.82
7	Sodium	%	0.15	0.69
8	Calcium	%	2.76	2.73
9	Magnesium	%	0.045	0.054
10	Cation Exchange capacity	Meq/100gm	53	54

Bio- organic Manure (Bhumilabh) Analysis Report:-

Sl No	Parameter	Unit	Results				
			1	2	3	4	5
			26.06.2018	25.07.2018	26.12.2018	23.02.2019	26.03.2019
1	Moisture	%	20.31	24.67	29.83	27.48	27.41
2	pH(Saturated)		7.63	7.81	7.71	7.62	7.63
3	Total Volatile Solids	%	62.71	65.29	63.27	63.01	63.14
4	Residual ash	%	37.29	34.71	36.73	36.99	36.86
5	Nitrogen	%	1.8	1.59	1.76	1.78	1.77
6	Phosphorus	%	1.74	2.31	1.83	1.89	1.91
7	Potassium	%	5.83	8.91	4.98	4.72	4.65
8	Organic carbon	%	27.53	28.07	28.34	25.41	25.32
9	C/N ratio		15.29	17.65	16.1	14.27	14.3
	Leachate Water(Filtrate)						
10	pH		7.88	8.34	7.93	8.08	8.10
11	COD	mg/lit	241	245	237	230	231
12	BOD	mg/lit	26	27	25	22	22
13	Chlorides	mg/lit	73	74	102	115	119
14	EC	µmhos/cm	1385	1395	1410	1452	1458

ENVIRONMENTAL STATEMENT IN BRIEF

Name of Factory: GODAVARI BIOREFINERIES LTD.,
(Distillery Division)
SAMEERWADI. 587 316,
DIST.: BAGALKOT,
KARNATAKA (STATE).

Units of effluent treatment plant:

Distillery: Bio-digesters, Multiple Effect Evaporators, Biocomposting & Incineration boiler

1) Whether untreated, treated effluents are analyzed regularly?

R: Yes, Untreated, treated effluents are analyzed usually once in a month.

2) Whether treated effluent is used for irrigation purpose and how much land is used for irrigation?

R: No. 'Bio-Composting' & Multiple Effect Evaporation followed by Incineration Boiler technique is adopted.

3) Whether soil and ground water are tested regularly?

R: Yes, soil and ground water are tested once in a month. Results are enclosed.

4) Whether stack monitoring arrangement have been made? And if so whether the monitoring is done regularly as per the consent condition?

R: Yes, Results enclosed.

5) What is the capital cost of pollution control measures since the inception of the plant and also mention the details of operation and maintenance cost.

Capital Cost :

Distillery:	Primary	: 12.0 Crores (Bio-methanisation)
	Secondary	: 9.5 Crores (Bio-Composting)
	Air pollution control equipment: 3.0 Crores (ESP)	

Operation and maintenance cost per annum:

Distillery: Primary: 1,17,78,896 . 00

Secondary: 3,58,53,535. 00

Air pollution control equipment: Rs. 6,19,000.00

6) How many trees are planted in the factory premises?

R: About 1800 trees are planted in the factory premises. About 4.0 acres of land is covered under greenbelt.

ENVIRONMENTAL OFFICER **GENERAL MANAGER**