HARINAGAR SUGAR MILLS LIMITED (DISTILLERY DIVISION), HARINAGAR

Six monthly Analysis Report of Raw Spent Wash, Treated Effluent, Piezometers, Ground Water, Stack Emission & Ambient Air Quality Monitoring Report (From April, 2017 to September, 2017)

SL. No.	Particulars	Unit/Limit	April, 17	May, 17	June, 17	July, 17	Aug, 17	Sept, 17
A	**Raw Spent Wash**		**All Parameter are analyzed by own laboratory**					
1	Total Feed	M^3	16480	2490	16720	-	-	4869
2	Feed Temp	^0C	40	39	39	-	-	39
3	Feed pH		4.46	4.49	4.48	-	-	4.46
4	Feed COD	PPM	172000	165000	168000	-	-	172300
5	Feed BOD	PPM	75300	74500	73850.00	-	-	72190
6	T.S.S.	PPM	8190	9150	9020.00	-	-	9180
7	T.D.S.	PPM	145290	146250	145350.00	-	-	141500
B	**Digester Sample**							
1	Digester pH		7.53	7.54	7.54	-	-	7.53
2	COD	PPM	52000	55400	55300.00	-	-	53900
3	BOD	PPM	9080	9170	9190.00	-	-	-
4	VFA	PPM	4950	5090	5010.00	-	-	5280
5	Alkanity	PPM	29200	28400	28300.00	-	-	-
C	**Treated Effucent**							-
1	COD	PPM	43200	45400	44800.00	-	-	-
2	BOD	PPM	8110	8250	8380.00	-	-	-
3	pH	PPM	7.50	7.51	7.51	-	-	-
4	TSS	PPM	5650	5680	5790.00	-	-	-
5	TDS	PPM	50300	51200	50300.00	-	-	
D	**Bio-Gas Production**	M^3	834000	58000	446500	-	-	
E	**Piezometer Monitoring Report (No.1 to 7)**							
1	Sample Found/ Not Found		N. F.	F.	N. F.	F.	F	N. F.
2	pH		N. F.	7.3	N. F.	7.25	7.23	N. F.
3	Colour	Hazen	N. F.	Colourless	N. F.	Colourless	Colourless	N. F.
4	D.O.	PPM	N. F.	6.8	N. F.	6.3	6.5	N. F.
	GROUND WATER, EFFLUENT, STACK EMISSION, AMBIENT AIR & AMBIENT NOISE LEVEL MONITORING REPORT BY SHIVA TEST HOUSE							
F	**Ground Water Analysis Report from Factory Borewell**		**All Parameters are analyzed by third party Shiva Test House, Patna**					
1	Location		BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO
2	Colour	Hazen	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
3	pH		7.17	7.13	7.23	7.19	7.22	7.29
4	Total Dissolved Solids	mg/l.	318.0	312.0	334.0	331.0	339.0	347.0
5	Turbidity on NTU	NTU	<1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
6	Total Hardness as CaCo3	mg/l.	260.0	245.0	264.0	268.0	252.0	248.0
7	Calcium as Ca	mg/l.	52.9	56.1	59.3	54.5	59.3	56.1
8	Magnesium as Mg	mg/l.	31.1	26.2	28.2	32.1	25.3	26.1
9	Iron As Fe	mg/l.	0.17	0.14	0.16	0.19	0.16	0.14
10	Total Alkalinity as CaCo3	mg/l.	272.0	264.0	289.0	276.0	288.0	272.0
11	Chloride as Cl	mg/l.	16.0	20.0	18.0	22.0	16.0	14.0
12	Sulphate as So4	mg/l.	18.2	15.6	17.4	17.2	18.1	15.9
13	Nitrate as No3	mg/l.	2.3	2.8	2.1	2.8	2.7	2.5
14	Phosphate as Po4	mg/l.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
G	**Ground Water Analysis Report from near Biocomposting**							
1	Location		HP/BC	HP/BC	HP/BC	HP/BC	HP/BC	HP/BC
2	Colour	Hazen	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
3	pH		7.21	7.24	7.18	7.22	7.21	7.23
4	Total Dissolved Solids	mg/l.	351	341	325	336	342	353
5	Turbidity on NTU	NTU	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
6	Total Hardness as CaCo3	mg/l.	284.0	268.0	284.0	276.0	272.0	288.0
7	Calcium as Ca	mg/l.	56.1	54.5	62.5	57.7	60.9	59.3
8	Magnesium as Mg	mg/l.	35.0	32.5	31.1	32.1	29.2	34.0
9	Iron As Fe	mg/l.	0.12	0.16	0.19	0.17	0.14	0.15
10	Total Alkalinity as CaCo3	mg/l.	308.0	312.0	300.0	292.0	312.0	312.0
11	Chloride as Cl	mg/l.	18.0	16.0	22.0	20.0	18.0	18.0
12	Sulphate as So4	mg/l.	16.7	19.6	18.3	17.9	19.7	21.6
13	Nitrate as No3	mg/l.	3.6	4.1	3.7	3.4	3.9	3.7
14	Phosphate as Po4	mg/l.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
H	**Effluent Sample Before Digester**							
1	pH		4.32	-	-	-	-	-
2	Total Suspended Solids	mg/l.	7970.0	-	-	-	-	-
3	B. O. D.	mg/l.	72000.0	-	-	-	-	-
4	C. O. D.	mg/l.	169600.0	-	-	-	-	-
I	**Effluent Sample After Digester**							
1	pH		7.43	-	-	-	-	-
2	Total Suspended Solids	mg/l.	5890.0	-	-	-	-	-
3	B. O. D.	mg/l.	7600.0	-	-	-	-	-
4	C. O. D.	mg/l.	46400.0	-	-	-	-	-
J	**Boiler Stack Emission**							
1	Particular Matter (P.M.)	Mg/NM^3	52.8	-	-	-	-	-
2	Sulphur Dioxide (So2)	Mg/NM^3	15.7	-	-	-	-	-
3	Nitrognedioxide as NO2	Mg/NM^3	24.3	-	-	-	-	-
K	**Ambient Air Report**							
1	Particular Matter (PM_{10})	$\mu g/ M^3$	57.3	60.8	58.1	60.2	63.6	59.4
2	Particular Matter ($PM_{2.5}$)	$\mu g/ M^3$	29.9	32.4	30.4	31.2	35.2	33.2
3	Sulphur Dioxide (SO_2)	$\mu g/ M^3$	20.2	20.3	22.4	21	25.7	23.8
4	Nitrogen Dioxide (NO_2)	$\mu g/ M^3$	33.1	26.3	36.6	32.8	38.8	35.9
L	**Ambient Noise Level**							
1	Near Main Gate	dB(A)	64.6	62.1	66.8	64.9	61.2	64.6
2	Near Boiler House	dB(A)	64.2	67.1	64.1	57.2	65.8	64.3
3	Near ADM Building	dB(A)	58.1	59.6	54.3	55.4	56.7	57.9
4	Near South Gate	dB(A)	59.7	61.3	59.7	57.8	58.8	58.2
5	Near Laboratory	dB(A)	53.9	54.2	53.6	52.4	51.7	53.6

HARINAGAR SUGAR MILLS LIMITED (DISTILLERY DIVISION), HARINAGAR

Six monthly Analysis Report of Raw Spent Wash, Treated Effluent, Piezometers, Ground Water, Stack

Emission & Ambient Air Quality Monitoring Report (From October, 2017 to March, 2018)

SL. No.	Particulars	Unit/Limit	Oct, 17	Nov, 17	Dec, 17	Jan, 18	Feb, 18	Mar, 18
A	**Raw Spent Wash**		**All Parameter are analyzed by own laboratory**					
1	Total Feed	M^3	12250	21837	23396	24300.00	19690.00	23020
2	Feed Temp	^0C	43	42	43	41.00	45.00	43
3	Feed pH		4.45	4.46	4.46	4.50	4.50	4.5
4	Feed COD	PPM	168000	165900	165400	168200.00	168000.00	168000
5	Feed BOD	PPM	72380	75400	73900.00	74310.00	72380.00	68940
6	T.S.S.	PPM	8340	9090	9210.00	9410.00	9310.00	10100
7	T.D.S.	PPM	145180	143310	144330.00	143340.00	144100.00	142300
B	**Digester Sample**							
1	Digester pH		7.50	7.55	7.52	7.52	7.53	7.52
2	COD	PPM	61000	56000	56300.00	56100.00	56400.00	58400
3	BOD	PPM	10500	9580	9410.00	9440.00	9310.00	9450
4	VFA	PPM	5600	5740	5780.00	5740.00	5640.00	5660
5	Alkanity	PPM	26300	26410	26350.00	26410.00	26400.00	26910
C	**Treated Effucent**							-
1	COD	PPM	55200	43940	48000.00	51100.00	52100.00	43310
2	BOD	PPM	8330	8410	8550.00	8310.00	8390.00	8010
3	pH	PPM	7.53	7.54	7.50	7.52	7.52	7.52
4	TSS	PPM	6050	5050	5540.00	5560.00	5510.00	5520
5	TDS	PPM	55200	43310	50500.00	44410.00	45310.00	42590
D	**Bio-Gas Production**	M^3	57400	7167700	881500	943000.00	822100.00	911200
E	**Piezometer Monitoring Report (No.1 to 7)**							
1	Sample Found/ Not Found		N. F.	F.	N. F.	F.	F	N. F.
2	pH		N. F.	7.34	N. F.	7.35	7.26	N. F.
3	Colour	Hazen	N. F.	Colourless	N. F.	Colourless	Colourless	N. F.
4	D.O.	PPM	N. F.	6.6	N. F.	6.5	6.2	N. F.
	GROUND WATER, EFFLUENT, STACK EMISSION, AMBIENT AIR & AMBIENT NOISE LEVEL MONITORING REPORT BY SHIVA TEST HOUSE							
F	**Ground Water Analysis Report from Factory Borewell**		**All Parameters are analyzed by third party Shiva Test House, Patna**					
1	Location		BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO	BW/FACTO
2	Colour	Hazen	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
3	pH		7.21	7.27	7.25	7.18	7.18	6.78
4	Total Dissolved Solids	mg/l.	334.0	342.0	360.0	344.0	344.0	352.0
5	Turbidity on NTU	NTU	<1.0	< 1.0	< 1.0	< 1.0	<1.0	< 1.0
6	Total Hardness as CaCo3	mg/l.	264.0	252.0	220.0	236.0	236.0	220.0
7	Calcium as Ca	mg/l.	52.9	54.5	64	58	58	48
8	Magnesium as Mg	mg/l.	32.1	28.2	14.6	22.1	22.1	24.3
9	Iron As Fe	mg/l.	0.16	0.13	0.15	0.13	0.13	0.16
10	Total Alkalinity as CaCo3	mg/l.	292.0	284.0	246.0	252.0	252.0	256.0
11	Chloride as Cl	mg/l.	16.0	18.0	22.0	14.0	14.0	10.8
12	Sulphate as So4	mg/l.	17.4	21.7	12.0	16.2	13.2	5.4
13	Nitrate as No3	mg/l.	203	2.8	4	2.1	2.1	2.5
14	Phosphate as Po4	mg/l.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
G	**Ground Water Analysis Report from near Biocomposting**							
1	Location		HP/BC	HP/BC	HP/BC	HP/BC	HP/BC	HP/BC
2	Colour	Hazen	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
3	pH		7.19	7.21	7.18	7.11	7.11	6.64
4	Total Dissolved Solids	mg/l.	359	368	384	370	370	362
5	Turbidity on NTU	NTU	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
6	Total Hardness as CaCo3	mg/l.	272.0	284.0	242.0	256.0	256.0	244.0
7	Calcium as Ca	mg/l.	60.9	57.3	48	44	44	60
8	Magnesium as Mg	mg/l.	29.2	34.0	29.6	35.5	35.5	22.4
9	Iron As Fe	mg/l.	0.15	0.17	0.19	0.18	0.18	0.18
10	Total Alkalinity as CaCo3	mg/l.	318.0	312.0	280.0	277.0	294.0	272.0
11	Chloride as Cl	mg/l.	20.0	20.0	16.0	20.0	20.0	20.0
12	Sulphate as So4	mg/l.	23.7	22.9	10.0	13.4	13.4	11.9
13	Nitrate as No3	mg/l.	3.3	3.6	5.7	4.3	4.3	6.1
14	Phosphate as Po4	mg/l.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
H	**Effluent Sample Before Digester**							
1	pH		-	4.29	4.5	4.6	4.36	4.37
2	Total Suspended Solids	mg/l.	-	7880.0	6430.0	6480	6117	7240
3	B. O. D.	mg/l.	-	79000.0	78000.0	77000	76000	78000
4	C. O. D.	mg/l.	-	152500.0	154400.0	153100	151700	160400
I	**Effluent Sample After Digester**							
1	pH		-	7.41	7.53	7.52	7.81	7.75
2	Total Suspended Solids	mg/l.	-	5590.0	5870.0	5890	5640	5570
3	B. O. D.	mg/l.	-	8300.0	7600.0	7690	7200	7400
4	C. O. D.	mg/l.	-	46800.0	44700.0	44500	47200	51400
J	**Boiler Stack Emission**							
1	Particular Matter (P.M.)	Mg/NM^3	-	56.7	51.4	51.4	53.1	56.3
2	Sulphur Dioxide (So2)	Mg/NM^3	-	15.7	13.8	14.5	11.6	12.1
3	Nitrognedioxide as NO2	Mg/NM^3	-	25.2	21.6	25.3	34.3	32.8
K	**Ambient Air Report**							
1	Particular Matter (PM_{10})	$\mu g/ M^3$	57.9	59.6	57.9	62.3	62.3	60.1
2	Particular Matter ($PM_{2.5}$)	$\mu g/ M^3$	31.9	33.2	34.7	34.4	34.9	34.3
3	Sulphur Dioxide (SO_2)	$\mu g/ M^3$	25.2	15.9	8.8	7.3	7.8	8.5
4	Nitrogen Dioxide (NO_2)	$\mu g/ M^3$	35.4	28.9	18.4	16.7	16.7	17.5
L	**Ambient Noise Level**							
1	Near Main Gate	dB(A)	62.7	68.1	71.6	73.2	73.2	71.2
2	Near Boiler House	dB(A)	65.1	66.4	69.7	68.1	68.3	67.2
3	Near ADM Building	dB(A)	56.2	58.3	66.8	67.3	67.3	64.8
4	Near South Gate	dB(A)	53.7	63.9	70.2	68.9	68.9	65.3
5	Near Laboratory	dB(A)	52.7	64.2	65.4	62.3	62.7	70.6