



# TAMILNADU NEWSPRINT AND PAPERS LTD

## Biomethanation Plant

DATE: 02.01.07

Hourly & Shiftwise Process Analysis Data

Time	Flow M <sup>3</sup> /hr		pH						Data Scanner (Modbus RTU)					
	Raw. Eff.	Flow M <sup>3</sup> /hr	Raw.Eff.	CLA.Out	BT	RA outlet	RB outlet	R1 Feed	R2 Feed	R1 Feed	R2 Feed	NT. Out	Biogas	
														Flow M <sup>3</sup> /hr
06.30		514	4.64	6.69	7.22	7.48	7.50	306	308	31.0	31.0	6.5	366	
8.30		500	4.70	6.73	7.10	7.49	7.50	313	312	32.5	32.5	6.8	442	
10.30		241	4.59	6.79	7.23	7.52	7.56	319	318	33.5	33.5	6.6	495	
12.30		254	4.73	6.84	7.31	7.56	7.57	312	314	34.5	34.5	6.5	250	
14.30		499	4.88	6.58	7.00	7.59	7.56	306	300	34.5	34.5	6.6	317	
16.30		368	4.85	6.68	7.02	7.57	7.55	310	301	34.5	34.5	6.7	408	
18.30		325	4.50	6.60	6.99	7.55	7.54	299	297	34.0	34.0	6.5	465	
20.30		495	4.47	6.68	6.95	7.54	7.53	300	289	33.5	33.5	6.5	368	
22.30		505	4.45	6.54	6.84	7.61	7.57	290	289	33.0	33.0	6.6	412	
00.30		497	4.49	6.60	6.80	7.58	7.56	306	294	32.5	32.5	6.8	547	
02.30		475	4.58	6.57	6.92	7.55	7.56	300	290	32.0	32.0	6.6	560	
04.30		509	4.37	6.51	6.88	7.55	7.54	317	304	31.0	31.0	6.5	504	

SHIFT	COD mg / l						VOLATILE FATTY ACIDS meq / lit						ALKALINITY meq / lit						TOTAL SUSPENDED SOLIDS mg / l							
	Raw Eff	Clar O/L	B.T O/L	R.A O/L	R.B O/L		Raw Eff	Clar O/L	B.T O/L	R.A O/L	R.B O/L		Raw Eff	Clar O/L	B.T O/L	R.A O/L	R.B O/L		Raw Eff	Clar O/L	Decant./L	Decant.O/L	Cake Cy%	Ash %	R.A O/L	R.B O/L
A	3920	2480	1760	380	308	4076	3088	2496	7.36	9.29	-ve	-ve	3.20	19.50	17.60	580	480	5300	240	17.44	-	1740	1680			
B	2000	1760	1680	292	276	2107	2679	2094	5.34	3.41	-ve	-ve	1.60	19.60	21.50	450	410	49760	190	17.63	-	960	1010			
C	3440	2720	2160	368	324	3697	2890	2094	5.46	3.43	-ve	-ve	1.80	18.60	19.70	510	460	19200	240	17.81	-	910	1060			
Average	3120	2320	1867	347	303	3293	2885	2228	6.05	5.38	-ve	-ve	2.20	19.23	19.60	513	450	50653	223	17.63	-	1203	1250			

Cumulative M<sup>3</sup> RAW - 23200 GAS - 17900

Kiln -

5500

Boiler -

5300

Flaired -

Lime - 5533

Tonnes -

## OBSERVATION "A" SHIFT

Raw Effluent : 3000 m<sup>3</sup>  
 Gas Production : 3100 m<sup>3</sup>  
 Gas to ~~Kiln~~ Boiler : 3100 m<sup>3</sup>

Bagasse CLA I/L Flow: 4800

GPF : 0.48  
 HLR : 75.00 %  
 OLR : 38.75 %

## RECYCLE :

MOL : ~~75.00~~ m<sup>3</sup>  
 CAO : Not gpl  
 Lime : Not T

\* Sludge loading to Buffer Tank

07.30 - 10.30 hrs (3.0 hrs)

\* In this shift fueling as sent to power- Boiler.

\* Raw-effluent flow not available from 12.30 hrs onwards.

P. P. J. [Signature]

CHEMIST

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## "B" SHIFT

Raw Effluent : 4000 m<sup>3</sup>  
 Gas Production : 2500 m<sup>3</sup>  
 Gas to ~~Kiln~~ Boiler : 2500 m<sup>3</sup>

Bagasse CLA I/L Flow: 6100

GPF : 0.47  
 HLR : 100.00 %  
 OLR : 36.66 %

## RECYCLE : B

MOL : 85.88 - 85.75 = 13 m<sup>3</sup>  
 CAO : 94.64 gpl  
 Lime : 1.230 T

\* Sludge loading to Buffer Tank.

14.30 - 17.30 (2.0 hours)

CHA - 84.1

CO2 - 16.1

[Signature]  
 CHEMIST

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## "C" SHIFT

Raw Effluent : 4000 m<sup>3</sup>  
 Gas Production : 4000 m<sup>3</sup>  
 Gas to Kiln : 1100 m<sup>3</sup>  
 Gas to Boiler: 2900

Bagasse CLA I/L Flow: 7900 / 18800 m<sup>3</sup>

GPF : 0.42  
 HLR : 100.00 %  
 OLR : 56.67 %

## RECYCLE : A

MOL : 8608 - 8588 = 20 / 3.3 m<sup>3</sup>  
 CAO : 87.73 / 91.18 gpl  
 Lime : 1.754 / 2.984 T

\* Gas to Kiln started at 00:45.

Raw Effluent : 11000  
 Gas Production : 9900  
 Gas to Kiln : 1100  
 Gas to Boiler : 8800

INLET COD : 2320 mg/lit  
 OUTLET COD : 325 mg/lit  
 COD REDUCTION : 85.99 %  
 OLR : 44.20 %  
 HLR : 91.67 %  
 GPF : 0.45 M<sup>3</sup>/Kg COD Reduced

\* Sludge loaded to B.T.:-  
 22:30 - 01:30 hrs (3.0 hrs)

G. Bligh  
 CHEMIST

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