



**Sembcorp Energy India Limited**  
(Formerly Thermal Powertech Corporation India Ltd)  
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SEIL P2/ APPCB/Nellore/2020/016  
13<sup>th</sup> May'2020

To  
**The Environmental Engineer**  
**AP Pollution Control Board**  
**Regional Office, Nellore.**

Dear Sir

**Sub:** Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited – SGPL) Submission of Environment Statement (Form V) for the year 2019-2020.

**Ref:** CFO order issued to SGPL vide Ref: APPCB/HO/UH-IV/CFO: VJA/Auto Renewal-1/2017 – dated 29.01.2017 valid till 28.02.2022.

Sir,

Please find enclosed herewith the “Environment Statement (Form V)” for the year 2019-2020 from Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited – SGPL) ,Nellore, Andhra Pradesh.

Thanking you

Yours Truly  
For **M/s. Sembcorp Energy India Limited**

**(Pavan Kumar Rao V)**  
**Head HSE - SEIL**

CC: The Member Secretary - APPCB, Vijayawada.

# **ENVIRONMENTAL STATEMENT FOR THE YEAR 2019 - 2020**

*of*

**2x660 MW  
Super Critical Coal Based Thermal Power Plant**

*At*

***Painampuram, Varakavipudi & Sivarampuram  
villages  
Muthukur Mandal  
SPSR Nellore District  
Andhra Pradesh***

***Submitted By***

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***Sembcorp Energy India Limited – Project 2  
[formerly known as Sembcorp Gayatri Power Limited]  
SPSR NELLORE, ANDHRA PRADESH***

***May 2020***

# **Environmental Statement Report 2019 - 2020 for Sembcorp Energy India Limited Project 2 – SEIL P2 (formerly known as Sembcorp Gayatri Power Limited. - SGPL)**

FORM - V  
(See Rule 14)

**Environmental Statement Report for the financial year ending the  
31<sup>st</sup> March 2020.**

## **PART-A**

- |   |   |  |
|---|---|--|
| (i) Name and adders of the Owner/Occupier of the Industry, Operation or process | : | Mr. Ramesh Raman<br>Plant Manager<br>Sembcorp Gayatri Power Limited<br>Pyanampuram, Varakvipudi and<br>Sivarampuram Villages, Muthukur<br>Mandal, SPSR Nellore, PIN- 524 344<br>0861-3051510<br>+917675040570. |
| (ii) Industry Category  | : | Red Category – Hazardous<br>Coal based power plant   |
| (iii) Production capacity   | : | 1320 MW (2X660 MW)   |
| (iv) Year of Establishment  | : | Unit#1 (Nov, 16) & Unit#2 (Feb, 17)  |
| (v) Date of the last environmental Audit report submitted.                      | : | Environment Statement [2018-19]<br>submitted on 19.06.2019.<br>Unit#1 Started operation in Nov, 16<br>Unit#2 Started operation in Feb, 17.   |

**PART – B**  
**WATER AND RAW MATERIAL CONSUMPTION**

(i) Water consumption, m<sup>3</sup>/day : Please refer Annexure 4

RO-DM Plant : **4300691 cum** for Total year of operations (2019 - 2020)  
Cooling Tower : **54513000 cum** for Total year of operations (2019 - 2020)  
Domestic : **NIL** for Total year of operations (2019 - 2020)

Name of Product	Process water consumption per unit of product output	
	During the Previous Financial year (2018-2019)	During the current Financial year (2019-2020)
Electricity (8403.625 Million Units generated during 2019-2020)	<b>0.366 cum/MWH</b> (excl. Cooling tower makeup) <b>5.84 cum/MWH</b> (incl. Cooling tower makeup)	<b>0.5117 cum/MWH</b> (excl. Cooling tower makeup) <b>6.998 cum/MWH</b> (incl. Cooling tower makeup)

**RAW MATERIAL CONSUMPTION:**

Name of raw material	Name of Products	Consumption of raw material per unit of output (Tons/KWH, Lit. /KWH of Electricity)	
		During the Previous Financial year (2018-2019)	During the current Financial year (2019-2020)
Coal	Electricity	<b>0.0005026 Ton /kWh</b>	<b>0.0005135 Ton /kWh</b>

**PART – C**

**POLLUTION GENERATED**  
**(Parameters as specified in the consent issued)**

Pollution discharged to Environment/ Unit of output

(i) Pollutant	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
a) Water	Please refer Annexure 4A (Effluent Water Quality third party reports)		
b) Air	Please refer Annexure 4B (Stack Emissions Quality third party reports)		

**PART – D**  
**HAZARDOUS WASTES**

(As specified under Hazardous wastes / management and handling rules, 1989)

Hazardous Wastes	Total Quantity	
	During the Previous Financial year (2018-2019)	During the current Financial year (2019-2020)
(a) From process	<b>19 KL</b>	<b>31.8 KL</b>

(b) From pollution control facility	--	--
(c) Quantity recycled or Re-utilized	<b>19 KL</b>	<b>31.8 KL</b>

Waste oil generated in the process will be given to APPCB authorized waste recycler. [Hazardous Waste Returns submitted to APPCB / CPCB attached as Annexure – 5].

**PART-E**

**SOLID WASTES**

Solid Wastes	Total Quantity	
	During the current Financial year (2018-2019)	During the current Financial year (2019-2020)
(a) From process	<b>Ash – 579705 MT</b>	<b>Ash – 556267 MT</b>
(b) From pollution control facility	--	--
(c) Quantity recycled or Re-utilized	<b>400258.57 MT</b> of ash is sent to outside vendors for utilization	<b>280752 MT</b> of ash is sent to outside vendors for utilization

SEIL P2 [formerly SGPL] Statutory Compliance Report to CPCB on Annual Fly Ash Utilization data (01.04.2019 to 31.03.2020) is attached as Annexure – 6.

**PART – F**

**Please specify the characteristics in terms of composition and quantum of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.**

Hazardous waste generated during 2019-20 is **31.8 KL** of waste/used oil.  
Total ash generated during 2018-19 is **556265 MT**.

The generated waste oil is handed-over to APPCB authorized waste recyclers (SEIL P2 tied-up third party) after having adequate quantity of it. The waste oil is recycled through APPCB approved Hazardous Waste Handler to **M/s. Indo Petro Products, Plot No. 101-B, S. No. 1043-2, Industrial Development Area, Beside APSRTC Zonal Workshop, Kadapa, Andhra Pradesh** for re-processing/reuse.

**PART – G**

Impact of the pollution control measures on conservation of natural resources and on the cost of production.

Regular monitoring of ambient air quality, stack emissions and effluent quality have been taken up to evaluate the efficiency of the pollution control systems and control measures on the overall emissions from stack and ambient air.

A total of about **Rs. 10, 35,680/-** is spent on monitoring of pollution control equipment, environmental monitoring and Waste Disposal for the financial year 2019 – 2020.

## **PART - H**

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


1. 300 nos. of Water sprinklers at coal storage yards & dust suppression (DS), Dry Fog Dust Suppression (DFDS) systems arrangement are in service in the coal handling area to control the fugitive dust emission in the plant.
2. Internal roads are completed to reduce the fugitive dust emission inside the plant premises.
3. 315 acres of massive tree plantation is completed inside as well as outside of the Plant premises. Also lawns/ gardens are developed inside of the plant premises wherever the open space is available to improve the plant beautification.
4. 09 nos. of Rainwater harvesting ponds are in service.
5. Housekeeping is taking on top priority and engaged about **200 no. of manpower** for maintaining neat and clean environment in the plant premises.


## **PART - I**

### **Miscellaneous**

Any other particulars for improving environment protection and abatement of pollution. More than **315 acres** of Greenbelt development completed inside & all along the periphery of the plant boundary.

World Environment Day and Vanamahotsavam celebrated at SEIL P2 and planted almost 7,000 plants within the plant premises.

  
Mr. Ramesh Raman  
Plant Manager  
Sembcorp Energy India Limited Project 2  
[formerly Sembcorp Gayatri Power Limited]  
Pyanampuram / Sivarampuram Villages  
Muthukur Mandal, SPSR Nellore  
PIN- 524 344  
0861-3051510  
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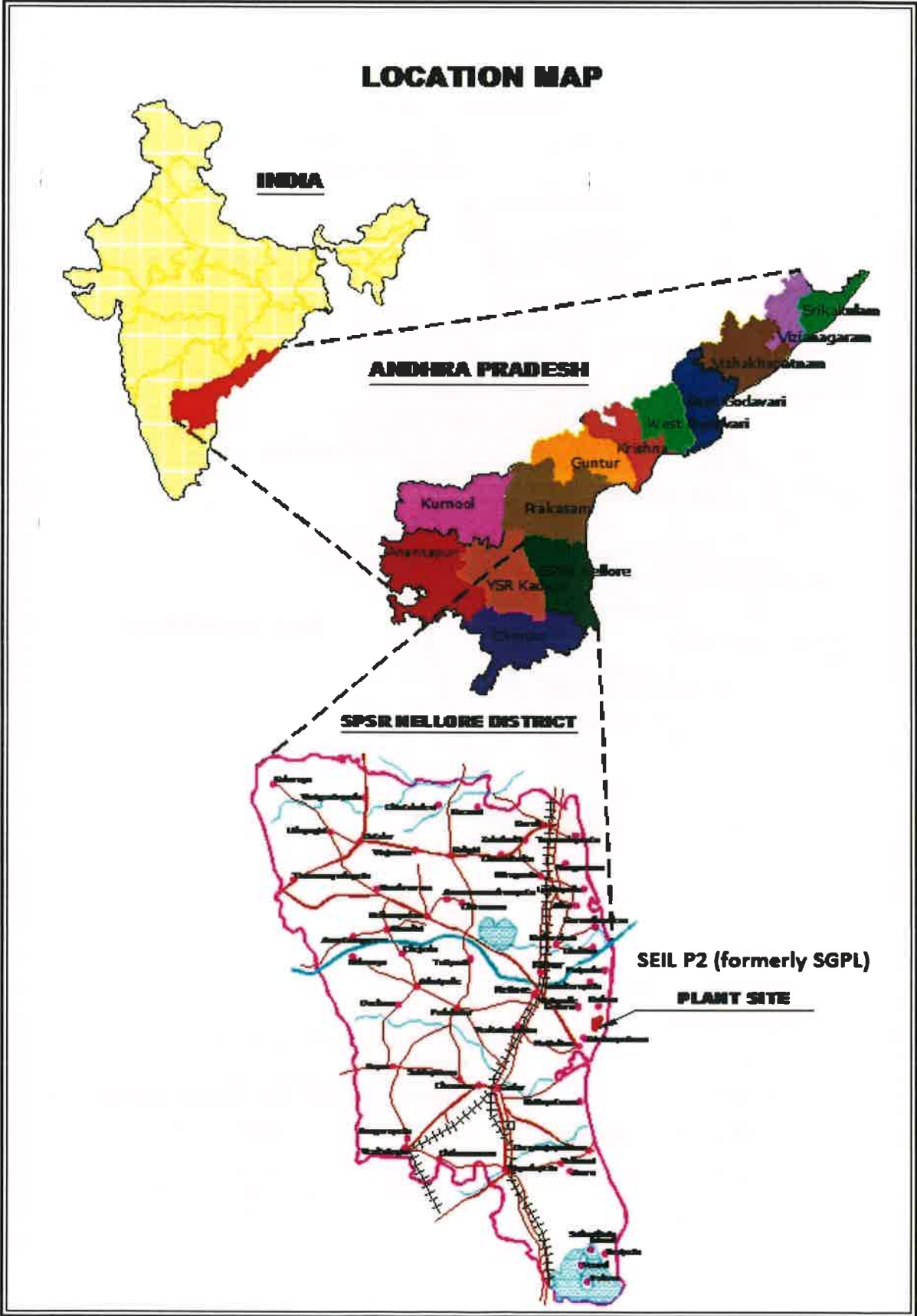
# **ANNEXURES**

**ANNEXURE-1**

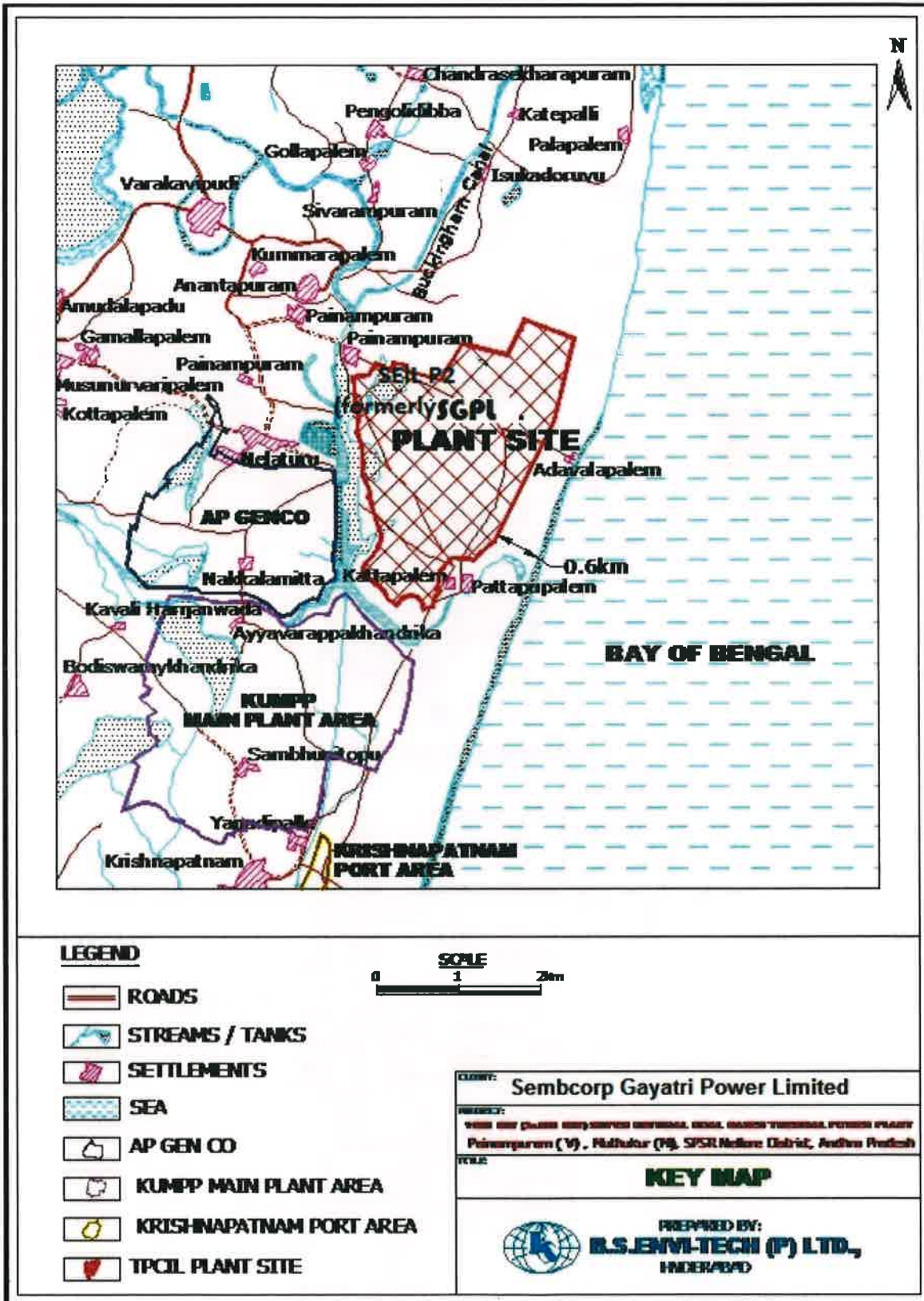
**LIST OF SURVEY NOS**

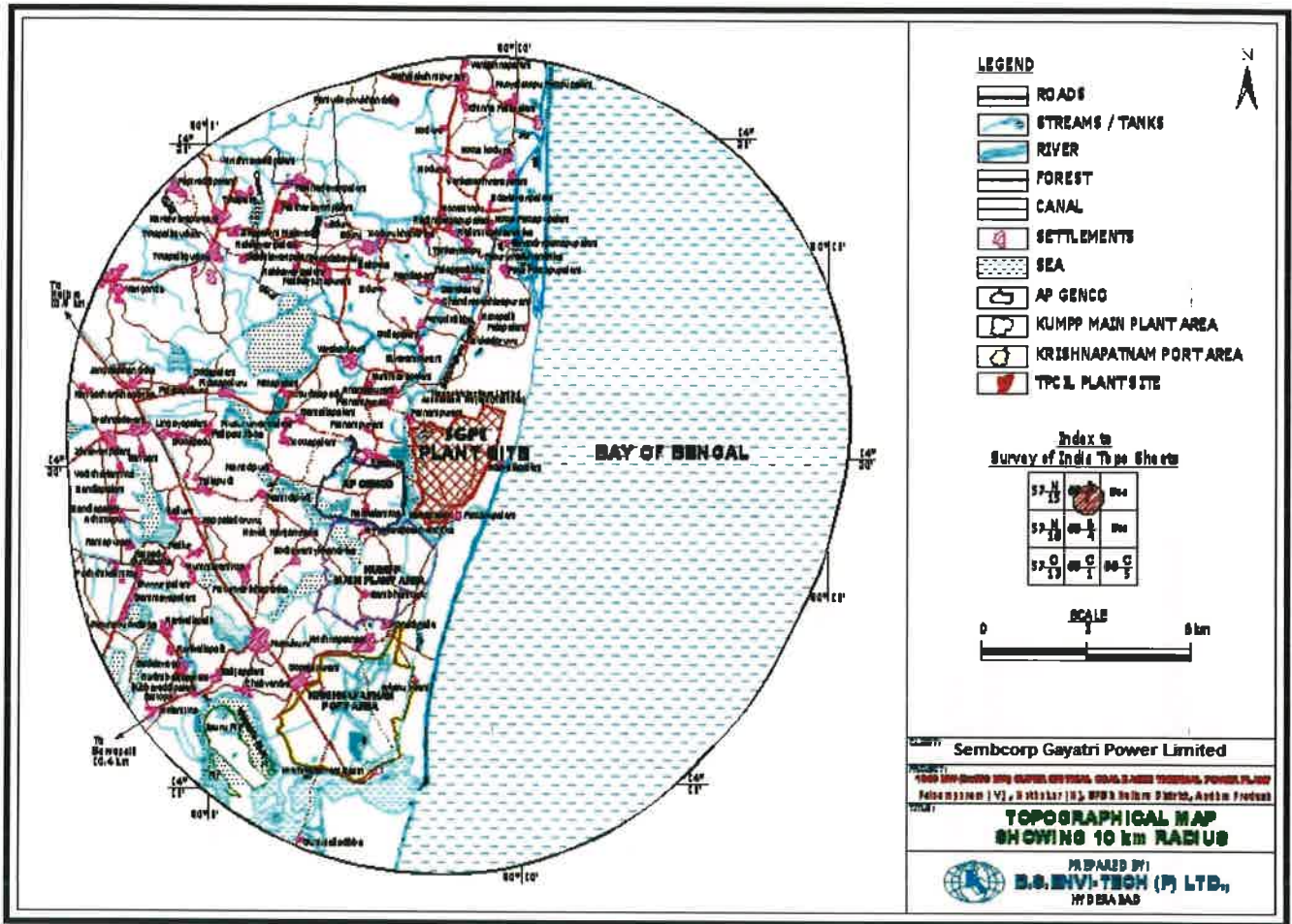
<b>S.No</b>	<b>VILLAGE</b>	<b>SURVEY NO(s)</b>
1	Ananthavaram	1/1,1/2,1/3,2,3,5,6,7,8,9,10/1,10/2,10/3, 1 to 10, 12/2A1,12/2A,13/1,14/1,15/1,25,12/1 & 16/1
2	Painampuram	321,322/1,307/1,308/1,310/2-1, 311/1, 312/1, 313/1, 314/1, 315 to 320, 321/1, 323/1.
3	Varakavipudi	16/2, 17/A, 17/B, 18/A, 19/A, 19/B, 22/A, 22/B, 23, 24, 26/A, 26/B, 27/A, 29, 30/A, 30/B, 30/C, 30/D, 31/A, 31/B, 32/A, 32/B, 34/A, 34/B, 34/C, 34/D, 36/C, 37/3, 39/1, 39/3, 40, 1494/A, 1513 A & B.
4	Sivaramapuram	82, 83, 84, 85, 86-2 & 86-3.
5	Eduru Bit - 2	1493-1, 1506-1, 1508-2, 1509-2, 1511, 1513 A & B, 1494/1, 1494/2, 1494/A & 1502.



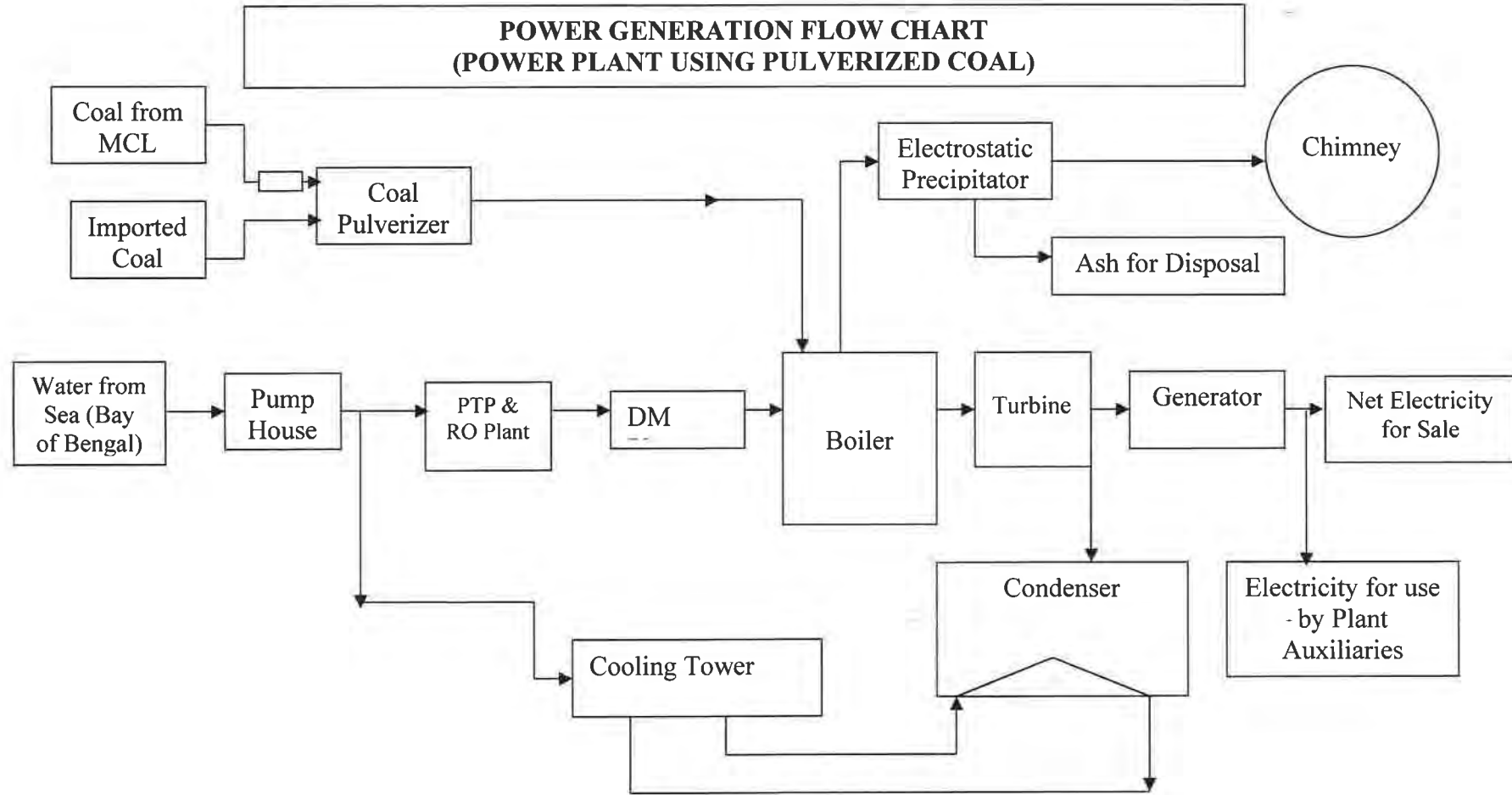


**ANNEXURE - 2A**





**THE FLOW CHART SHOWING THE POWER PLANT OPERATIONS**



**ANNEXURE - 4****WATER CONSUMPTION AND WASTEWATER DETAILS**

Sr. No.	Purpose	Total Quantity in (cum/day)	As per CFO Permitted Water Consumption Quantity (m3/day)
1	For cooling tower make up (saline water)	148942	273728
2	<b>Non Cooling water (RO First pass)</b>	11750	39712
	Clarifier		
	Filtration		
	Desal Reject		
	Miscellaneous services		
	Domestic - Plant		
	RO Second Pass		
	DM Plant		
	Boiler Feed		
	<b>Total Water drawl</b>	<b>1,60,693</b>	<b>3,13,440</b>

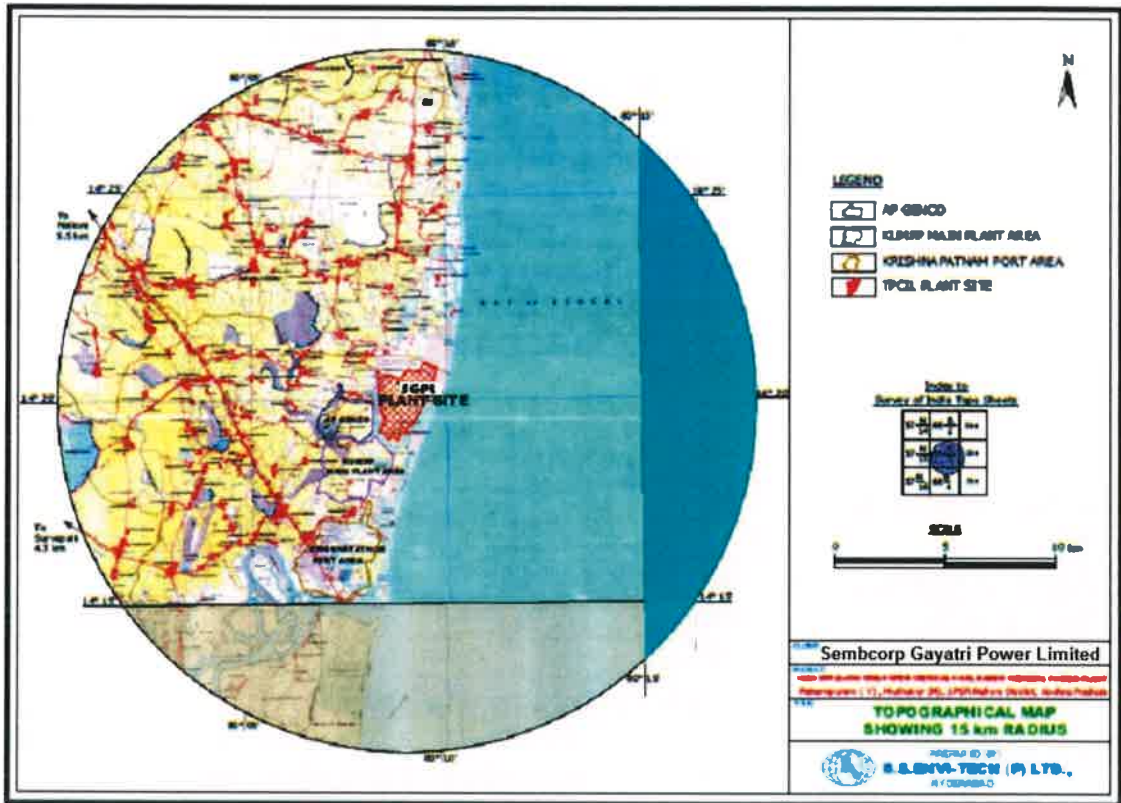
**WASTEWATER GENERATION AND DISPOSAL DETAILS**

Outlet. No.	Outlet description	Total Discharge Quantity (m3/day)	Max. Daily Discharge as per CFO (m3/day)	Point of Disposal
1	Cooling Tower blowdown	1,17,275	2,42,720	To sea through marine outfall after treatment and compliance of marine discharge standards. (Attached APPCB approved third party effluent monitoring reports)
2	Clarifier blow down			
3	Filter Back wash			
4	First Pass RO Reject			
5	DM Plant regeneration	0	149	1,12,117 m3 ETP treated water is reused for Green belt development / CHP dust suppression after treatment and compliance of on land for irrigation standards. (Attached APPCB approved third party effluent monitoring reports)
6	Boiler Blow down			
7	Domestic (Plant)			
	<b>Total Wastewater</b>	<b>1,17,275</b>	<b>2,42,869</b>	

**ANNEXURE - 7****DETAILS OF STACK EMISSIONS - (2X 660 MW)**

	<b>BLEND COAL</b>	
No. Of units	2	
Sulphur content in coal (%)	0.5	
No. Of stacks	1 (two flue cans)	
Height of stack, m	275	
Diameter of each flue(m)	7	
	Unit#1	Unit#2
Temperature of flue gas (°C) (at 103 m Elevation of stack)	129	130
Velocity of flue gas (m/s)	19	18
Particulate matter at outlet of ESP	31 mg / Nm <sup>3</sup>	31 mg / Nm <sup>3</sup>

# 15 KM MAP



ANNEXURE - 6

**ANNEXURE-7 (Contd...)**

**SALIENT FEATURES OF THE SITE**

<b>Feature</b>	<b>Details</b>
Altitude	Average 2.7 m above MSL
Longitude	Between 80° 08' 7.372" - 80° 09' 29.422" longitude (East)
Latitude	Between 14° 19' 5.211" - 14° 21' 0.874" latitude (North)
Village, District, State	Painampuram, Sivarampuram Villages, Muthukuru Mandal, SPSR Nellore District, Andhra Pradesh
Mean Maximum Temperature °C	33.4
Mean Minimum Temperature °C	24.4
Relative Humidity, %	59.5 – 96.3
Annual rainfall, mm	800.9 mm
Topography	Plain
Soil Type	Sandy
Nearest Canal	Buckingham canal – 0.10 km (W)
Nearest Creek	A creek is located at a distance of 0.15 km from the southern boundary of the plant site.
Nearest Highway	NH-5 Connecting Vijayawada-Chennai – 20 km
Nearest Railway station/ Port	Nellore - 26 Km, Krishnapatnam Port - 8 km
Nearest Industries	<ul style="list-style-type: none"> <li>➤ 2x800 MW Thermal Power Project of APGENCO</li> <li>➤ 2X660 MW Thermal Power Project of TPCIL (under commissioning)</li> <li>➤ Thapar Water Base Ltd.</li> <li>➤ Meenakshi Energy Power Project</li> <li>➤ Simhapuri Energy Limited</li> </ul>
Nearest Village(s)	<ul style="list-style-type: none"> <li>• Painampuram – 0.1km (SW)</li> <li>• Varakavipudi –4.4 km (WNW)</li> <li>• Anantavaram – 1.0km (SW)</li> <li>• Sivarampuram – 0.5 km (NW)</li> </ul>
Nearest City	Nellore – 26 Km
Nearest Air port	Renigunta (Tirupati)- 120 km
Nearest Forest	Ipuru RF – 7.8 km (SSW)
Historical places	None within 10 km radius

*\* Distances mentioned are aerial distances.*



# Annexure – 4A

*(Effluent Water Quality Third Party Analysis Reports)*



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# 104 & 105, Libra Enclave, RTC 'X' Roads, Musheerabad, Hyderabad-500 020.  
Ph: 040-27633361, e-mail: uea123@gmail.com, website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R3/0619

Date: 24-06-2019

### WASTE WATER ANALYSIS

Name of the Industry & Address: **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : E.T.P Outlet  
Date of collection : 11-06-2019 (Sampling time: 10:30 a.m)  
Date of Analysis : 13-06-2019

S. No	Parameter	Units	Method	Result	Standards
1	pH @ 25.0°C	---	APHA 22 <sup>nd</sup> Edition,2012, 4500 H+ B	7.91	5.5-9.0
2	Total Dissolved Solids	mg/L	APHA 22 <sup>nd</sup> Edition,2012, 2540 C	1,412	2,100
3	Total Suspended Solids	mg/L	APHA 22 <sup>nd</sup> Edition,2012, 2540 D	62.5	200
4	Chemical Oxygen Demand	mg/L	APHA 22 <sup>nd</sup> Edition,2012: 5220 B	142	250
5	Bio Chemical Oxygen Demand	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	45.3	100
6	Oil & Grease	mg/L	APHA 22 <sup>nd</sup> Edition,2012: 5520 B	1.9	10

  
Analyst

  
Authorized Signatory



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Ph: 040-27633361, e-mail: uea123@gmail.com, website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R5/0619

Date: 24-06-2019

### WATER ANALYSIS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Marine Outlet  
Date of collection : 11-06-2019 (Sampling time: 10:20 a.m)  
Date of Analysis : 13-06-2019

S. No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
1	pH	---	4500 H <sup>+</sup> B	7.59	6.5-8.0
2	Temperature (°C) Intake	°C	2500 B	35.6	Shall not exceed 5 °C above the receiving temp.
	Temperature (°C) Outfall	°C	2500 B	39.1	
3	Electrical Conductivity	ms/cm	2510 B	40,239	---
4	Total Dissolved Solids	mg/L	2540 C	24,259	---
5	Total Hardness as CaCO <sub>3</sub>	mg/L	2340 C	6,412	---
6	Chloride as Cl	mg/L	4500 Cl <sup>-</sup> B	13,052	---
7	Magnesium as Mg	mg/L	3500 Mg B	812	---
8	Nitrate as NO <sub>3</sub>	mg/L	4500 NO <sub>3</sub> <sup>-</sup> B	0.41	---
9	Fluoride as F	mg/L	4500 F D	0.98	---
10	Silica as SiO <sub>2</sub>	mg/L	4500 SiO <sub>2</sub> C	0.52	---
11	Calcium as Ca	mg/L	3500 Ca B	1,135	---
12	Turbidity	NTU	2130 B	7.9	---
13	Iron as Fe	mg/L	3500 Fe B	2.5	---
14	Copper as Cu	mg/L	3111 B	0.81	---
15	Manganese as Mn	mg/L	IS: 3025 (Part-59) 2012	0.37	---
16	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	IS: 3025 (Part-43) 2012	Nil	---
17	Mercury as Hg	mg/L	IS: 3025 (Part-48) 2012	Nil	0.01
18	Cadmium as Cd	mg/L	3111 B	Nil	2.0
19	Selenium as Se	mg/L	3111 B	Nil	---

Cont...



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## TEST REPORT

S. No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
20	Arsenic as As	mg/L	3500-As	Nil	0.2
21	Cyanide as CN	mg/L	4500 CN <sup>-</sup> C, E	Nil	---
22	Lead as Pb	mg/L	3111 B	0.08	2.0
23	Zinc as Zn	mg/L	3111 B	0.61	---
24	Sulphate as SO <sub>4</sub>	mg/L	4500 SO <sub>4</sub> <sup>-2</sup> E	996	---
25	Hexavalent Chromium as Cr <sup>+6</sup>	mg/L	3500 Cr B	Nil	1.0
26	Boron as B	mg/L	IS: 3025 (Part-57) 2012	0.02	---
27	Total alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	889	---
28	Potassium as K	mg/L	3500 K B	8.7	---
29	Sodium as Na	mg/L	3500 Na B	45.3	---
30	P-Alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	Nil	---
31	Total Suspended Solids	mg/L	IS: 3025(Part-15)1984	86.7	100
32	Carbonates as CO <sub>3</sub>	mg/L	IS: 3025 1964	90.4	---
33	Bio Carbonates as HCO <sub>3</sub>	mg/L	IS: 3025 1964	412	---
34	Chemical Oxygen Demand	mg/L	5220 B	110	250
35	Bio Chemical Oxygen Demand (27 °C @ 3 Days)	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	43.3	100
36	Oil & Grease	mg/L	5520 B	1.7	20

  
Analyst

  
Authorized Signatory



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Ph: 040-27633361, e-mail: uea123@gmail.com, website: www.universalenvironline.in

## TEST REPORT

REF.NO: UEA/SGPL/R9/0619

Date: 24-06-2019

### WATER ANALYSIS - BIO - ASSAY TEST RESULTS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
**Painampuram (V),**  
**Muthukur (M),**  
**SPSR Nellore Dt., Andhra Pradesh**

Sample particulars : Marine Out fall  
Test reports : 96 hours Static Fish Bioassay Test;  
Protocol: IS 6582-1971 (re approved 1992);  
Date of Collection : 11-06-2019  
Date of Experiment : Started on : 13-06-2019  
Completed on : 17-06-2019

#### FISH PARTICULARS:

Test Species : Puntius sophore; Size: 2.5 to 3.0 cm  
Type of test : 96 hours Static Fish Bioassay  
Quality of Effluent : pH: 7.59 DO: 5.3 mg/l.

#### OBSERAVATIONS:

%Conc. (V/V)	No. of Fish (No's)	Mortality Record				Symptoms of Toxicity
		Time in Hours				
		24	48	72	96	
Control	20	0	0	0	0	No symptoms of Toxicity were observed
Test (100%)	20	0	0	0	0	No symptoms of Toxicity were observed

Remarks: Survival of fish at 100% concentration of treated effluent after 96 hours of exposure is 100%.

  
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Ph: 040-27633361, e-mail: uea123@gmail.com / uealab123@gmail.com  
website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R1/0919

Date: 25-09-2019

### WASTEWATER ANALYSIS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
**Painampuram (V),**  
**Muthukur (M),**  
**SPSR Nellore Dt., Andhra Pradesh**

Sample Particulars : E.T.P Outlet  
Date of collection : 13-09-2019 (Sampling time: 10:30 am)  
Date of Analysis : 14-09-2019

S No	Parameter	Units	Method	Result	Standards
1	pH @ 25.0°C	---	APHA 23 <sup>rd</sup> Edition,2017, 4500 H+ B	7.73	5.5-9.0
2	Total Dissolved Solids	mg/L	APHA 23 <sup>rd</sup> Edition,2017, 2540 C	1,530	2,100
3	Total Suspended Solids	mg/L	APHA 23 <sup>rd</sup> Edition,2017, 2540 D	58.6	200
4	Chemical Oxygen Demand	mg/L	APHA 23 <sup>rd</sup> Edition,2017: 5220 B	134	250
5	Bio Chemical Oxygen Demand (27°C @ 3 Days)	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	42.9	100
6	Oil & Grease	mg/L	APHA 23 <sup>rd</sup> Edition,2017: 5520 B	1.7	10

*T. Vishwas*  
Analyst

*[Signature]*  
Authorized Signatory



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website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R3/0919

Date: 25-09-2019

### WATER ANALYSIS

Name of the Industry & Address: **M/s. SembCorp Energy India Limited, Project 2**  
**Painampuram (V),**  
**Muthukur (M),**  
**SPSR Nellore Dt., Andhra Pradesh**

Sample Particulars : Marine Outlet  
Date of collection : 13-09-2019 (Sampling time: 10:15 am)  
Date of Analysis : 14-09-2019

S No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
1	pH	---	4500 H <sup>+</sup> B	7.79	6.5-8.0
2	Temperature (°C) Intake	°C	2500 B	33.2	Shall not exceed 5 °C above the receiving temp.
	Temperature (°C) Outfall	°C	2500 B	35.1	
3	Electrical Conductivity	ms/cm	2510 B	38,954	---
4	Total Dissolved Solids	mg/L	2540 C	21,895	---
5	Total Hardness as CaCO <sub>3</sub>	mg/L	2340 C	5,778	---
6	Chloride as Cl	mg/L	4500 Cl <sup>-</sup> B	10,685	---
7	Magnesium as Mg	mg/L	3500 Mg B	923	---
8	Nitrate as NO <sub>3</sub>	mg/L	4500 NO <sub>3</sub> <sup>-</sup> B	0.36	---
9	Fluoride as F	mg/L	4500 F <sup>-</sup> D	0.88	---
10	Silica as SiO <sub>2</sub>	mg/L	4500 SiO <sub>2</sub> C	0.63	---
11	Calcium as Ca	mg/L	3500 Ca B	1,245	---
12	Turbidity	NTU	2130 B	8.1	---
13	Iron as Fe	mg/L	3500 Fe B	3.1	---
14	Copper as Cu	mg/L	3111 B	0.76	---
15	Manganese as Mn	mg/L	IS: 3025 (Part-59) 2012	0.42	---
16	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	IS: 3025 (Part-43) 2012	BDL	---
17	Mercury as Hg	mg/L	IS: 3025 (Part-48) 2012	BDL	0.01
18	Cadmium as Cd	mg/L	3111 B	BDL	2.0
19	Selenium as Se	mg/L	3111 B	BDL	---

Cont...



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website: www.universalenviro.in

### TEST REPORT

S No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
20	Arsenic as As	mg/L	3500-As	BDL	0.2
21	Cyanide as CN	mg/L	4500 CN <sup>-</sup> C, E	BDL	---
22	Lead as Pb	mg/L	3111 B	0.09	2.0
23	Zinc as Zn	mg/L	3111 B	0.61	---
24	Sulphate as SO <sub>4</sub>	mg/L	4500 SO <sub>4</sub> <sup>-2</sup> E	925	---
25	Hexavalent Chromium as Cr <sup>+6</sup>	mg/L	3500 Cr B	BDL	1.0
26	Boron as B	mg/L	IS: 3025 (Part-57) 2012	0.02	---
27	Total alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	907	---
28	Potassium as K	mg/L	3500 K B	9.1	---
29	Sodium as Na	mg/L	3500 Na B	52.3	---
30	P-Alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	BDL	---
31	Total Suspended Solids	mg/L	IS: 3025(Part-15)1984	104	100
32	Carbonates as CO <sub>3</sub>	mg/L	IS: 3025 1964	93.9	---
33	Bio Carbonates as HCO <sub>3</sub>	mg/L	IS: 3025 1964	395	---
34	Chemical Oxygen Demand	mg/L	5220 B	87	250
35	Bio Chemical Oxygen Demand (27 °C @ 3 Days)	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	33.7	100
36	Oil & Grease	mg/L	5520 B	1.2	20

T. Bughra  
Analyst

Authorized Signatory





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website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SGPL/R4/0919

Date: 25-09-2019

### BIO – ASSAY TEST RESULTS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample particulars : Marine Out fall  
Test reports : 96 hours Static Fish Bioassay Test;  
Protocol: IS 6582-1971 (re approved 1992);  
Date of Collection : 13-09-2019  
Date of Experiment : Started on : 14-09-2019  
Completed on : 18-09-2019

#### FISH PARTICULARS:

Test Species : Puntius sophore; Size: 2.5 to 3.0 cm  
Type of test : 96 hours Static Fish Bioassay  
Quality of Effluent : pH: 7.73 DO: 4.9 mg/l.

#### OBSERAVATIONS:

%Conc. (V/V)	No. of Fish (No's)	Mortality Record				Symptoms of Toxicity
		Time in Hours				
		24	48	72	96	
Control	20	0	0	0	0	No symptoms of Toxicity were observed
Test (100%)	20	0	0	0	0	No symptoms of Toxicity were observed

Remarks: Survival of fish at 100% concentration of treated effluent after 96 hours of exposure is 100%.

*T. Prabhakar*  
Analyst

*[Signature]*  
Authorized Signatory



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## TEST REPORT

REF.NO: UEA/SEIL/R3/1219

Date: 23-12-2019

### WASTEWATER ANALYSIS

Name of the Industry &: **M/s. SembCorp Energy India Ltd.,**  
(Formerly known as Thermal Power Corporation India Ltd.)  
Address: Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : E.T.P Outlet  
Date of collection : 16-12-2019  
Date of Analysis : 17-12-2019

S No	Parameter	Units	Method	Result	Standards
1	pH @ 25.0°C	---	APHA 23 <sup>rd</sup> Edition,2017, 4500 H+ B	7.69	5.5-9.0
2	Total Dissolved Solids	mg/L	APHA 23 <sup>rd</sup> Edition,2017, 2540 C	1,712	2,100
3	Total Suspended Solids	mg/L	APHA 23 <sup>rd</sup> Edition,2017, 2540 D	41.2	200
4	Chemical Oxygen Demand	mg/L	APHA 23 <sup>rd</sup> Edition,2017: 5220 B	163	250
5	Bio Chemical Oxygen Demand (27°C @ 3 Days)	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	45.6	100
6	Oil & Grease	mg/L	APHA 23 <sup>rd</sup> Edition,2017: 5520 B	1.7	10

  
Analyst

  
Authorized Signatory

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OHSAS 18001 : 2007

## TEST REPORT

REF.NO: UEA/SEIL/R3/1219

Date: 23-12-2019

### WATER ANALYSIS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Marine Outlet  
Date of collection : 16-12-2019 (Sampling time: 10:15 am)  
Date of Analysis : 17-12-2019

S No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
1	pH	---	4500 H <sup>+</sup> B	7.81	6.5-8.0
2	Temperature (°C) Intake	°C	2500 B	33.5	Shall not exceed 5°C above the receiving temp.
	Temperature (°C) Outfall	°C	2500 B	36.3	
3	Electrical Conductivity	µs/cm	2510 B	39,129	---
4	Total Dissolved Solids	mg/L	2540 C	22,125	---
5	Total Hardness as CaCO <sub>3</sub>	mg/L	2340 C	5,816	---
6	Chloride as Cl	mg/L	4500 Cl <sup>-</sup> B	11,258	---
7	Magnesium as Mg	mg/L	3500 Mg B	946	---
8	Nitrate as NO <sub>3</sub>	mg/L	4500 NO <sub>3</sub> <sup>-</sup> B	0.37	---
9	Fluoride as F	mg/L	4500 F <sup>-</sup> D	0.91	---
10	Silica as SiO <sub>2</sub>	mg/L	4500 SiO <sub>2</sub> C	0.65	---
11	Calcium as Ca	mg/L	3500 Ca B	1,321	---
12	Turbidity	NTU	2130 B	8.7	---
13	Iron as Fe	mg/L	3500 Fe B	3.9	---
14	Copper as Cu	mg/L	3111 B	0.78	---
15	Manganese as Mn	mg/L	IS: 3025 (Part-59) 2012	0.45	---
16	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	IS: 3025 (Part-43) 2012	<0.001	---
17	Mercury as Hg	mg/L	IS: 3025 (Part-48) 2012	<0.001	0.01
18	Cadmium as Cd	mg/L	3111 B	<0.001	2.0
19	Selenium as Se	mg/L	3111 B	<0.001	---

Cont...

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OHSAS 18001 : 2007

## TEST REPORT

S No	Parameter	Units	Method APHA 23 <sup>rd</sup> Edition 2017	Result	Standards
20	Arsenic as As	mg/L	3500-As	<0.001	0.2
21	Cyanide as CN	mg/L	4500 CN- C, E	<0.001	---
22	Lead as Pb	mg/L	3111 B	0.08	2.0
23	Zinc as Zn	mg/L	3111 B	0.58	---
24	Sulphate as SO <sub>4</sub>	mg/L	4500 SO <sub>4</sub> <sup>2-</sup> E	941	---
25	Hexavalent Chromium as Cr <sup>+6</sup>	mg/L	3500 Cr B	<0.001	1.0
26	Boron as B	mg/L	IS: 3025 (Part-57) 2012	0.03	---
27	Total alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	859	---
28	Potassium as K	mg/L	3500 K B	9.3	---
29	Sodium as Na	mg/L	3500 Na B	50.2	---
30	P-Alkalinity as CaCO <sub>3</sub>	mg/L	2320 B	<0.001	---
31	Total Suspended Solids	mg/L	IS: 3025(Part-15)1984	98.3	100
32	Carbonates as CO <sub>3</sub>	mg/L	IS: 3025 1964	92.1	---
33	Bio Carbonates as HCO <sub>3</sub>	mg/L	IS: 3025 1964	412	---
34	Chemical Oxygen Demand	mg/L	5220 B	86.5	250
35	Bio Chemical Oxygen Demand (27°C @ 3 Days)	mg/L	IS: 3025 (Part-44)-1993, reaffirmed 2009	32.5	100
36	Oil & Grease	mg/L	5520 B	1.3	20

  
Analyst

  
Authorized Signatory

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Note: This report is valid only for the tests and conditions mentioned in the report.



## TEST REPORT

REF.NO: UEA/SGPL/R4/1219

Date: 23-12-2019

### BIO – ASSAY TEST RESULTS

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample particulars : Marine Out fall  
Test reports : 96 hours Static Fish Bioassay Test;  
Protocol: IS 6582-1971 (re approved 1992);  
Date of Collection : 16-12-2019  
Date of Experiment : Started on : 17-12-2019  
Completed on : 23-12-2019

#### FISH PARTICULARS:

Test Species : Puntius sophore; Size: 2.5 to 3.0 cm  
Type of test : 96 hours Static Fish Bioassay  
Quality of Effluent : pH: 7.81 DO: 4.8 mg/l.

#### OBSERAVATIONS:

%Conc. (V/V)	No. of Fish (No's)	Mortality Record				Symptoms of Toxicity
		Time in Hours				
		24	48	72	96	
Control	20	0	0	0	0	No symptoms of Toxicity were observed
Test (100%)	20	0	0	0	0	No symptoms of Toxicity were observed

**Remarks:** Survival of fish at 100% concentration of treated effluent after 96 hours of exposure is 100%.

  
Analyst

  
Authorized Signatory



# SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

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Ref. No: SVELC/SCEIL/20-03/02

Dated: 04-05-2020

**ISSUED TO :** M/s. SEMB CORP ENERGY INDIA LIMITED P-2,  
Painampuram (V), Muthukur (M),  
SPSR NELLORE DISTRICT,  
ANDHRA PRADESH.

**DESCRIPTION OF SAMPLE :** TREATED EFFLUENT

**DATE OF COLLECTION :** March'20 – (11/03/2020)

**DATE OF RECEIPT :** March'20 – (13/03/2020)

**SOURCE OF COLLECTION :** ETP OUTLET

**SAMPLE COLLECTED BY :** SV ENVIRO LABS & CONSULTANTS,  
Visakhapatnam

## TEST REPORT

S. No.	Parameters	Units	Results	Method	Standard
1.	pH at 25°C	-	7.62	APHA 23 <sup>rd</sup> Ed,2017, 4500 H+B	5.5-9.0
2.	Total Dissolved Solids – TDS	mg/l	1410	APHA 23 <sup>rd</sup> Ed,2017, 2540 C	2100
3.	Total Suspended Solids – TSS	mg/l	46.2	APHA 23 <sup>rd</sup> Ed,2017, 2540 D	200
4.	Chemical Oxygen Demand – COD	mg/l	125	APHA 23 <sup>rd</sup> Ed,2017, 5220 B	250
5.	Bio chemical Oxygen Demand – BOD 3days at 27°C	mg/l	38.6	IS: 3025 (Part- 44)-1993, reaffirmed 2009	100
6.	Oil & Grease	mg/l	1.4	APHA 23 <sup>rd</sup> Ed,2017, 5520 B	10

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Ref. No: SVELC/SCEIL/20-03/03

Dated: 04-05-2020

ISSUED TO : M/s. SEMB CORP ENERGY INDIA LIMITED P-2,  
Painampuram (V), Muthukur (M),  
SPSR NELLORE DISTRICT,  
ANDHRA PRADESH.

DESCRIPTION OF SAMPLE : MARINE WATER

DATE OF COLLECTION : March'20 – (11/03/2020)

DATE OF RECEIPT : March'20 – (13/03/2020)

SOURCE OF COLLECTION : MARINE OUTLET

SAMPLE COLLECTED BY : SV ENVIRO LABS & CONSULTANTS,  
Visakhapatnam

## TEST REPORT

S.No	Parameter	Unit	Result	Standards
1.	pH	-	7.64	6.5-8.0
2.	Temperature Intake	<sup>o</sup> C	33.0	Shall not exceed 5 <sup>o</sup> C above the receiving temperature
3.	Temperature Outfall	<sup>o</sup> C	34.9	
4.	Electrical Conductivity	ms/cm	40256	-
5.	Turbidity	NTU	7.8	-
6.	Total Dissolved Solids	mg/l	22648	-
7.	Total Suspended Solids	mg/l	98.0	100
8.	Total Alkalinity as CaCO <sub>3</sub>	mg/l	1026	-
9.	P-Alkalinity as CaCO <sub>3</sub>	mg/l	Nil	-
10.	Total Hardness as CaCO <sub>3</sub>	mg/l	7314	-
11.	Calcium as Ca	mg/l	1362	-
12.	Magnesium as Mg	mg/l	950	-
13.	Chlorides as Cl	mg/l	10852	-
14.	Fluorides as F	mg/l	0.89	-
15.	Nitrates as NO <sub>3</sub>	mg/l	0.48	-
16.	Sulphates as SO <sub>4</sub>	mg/l	950	-
17.	Silica as SiO <sub>2</sub>	mg/l	0.68	-
18.	Phenolic Compounds	mg/l	<0.005	-





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19.	Sodium as Na	mg/l	5856	-
20.	Potassium as K	mg/l	254	-
21.	Carbonates as CaCO <sub>3</sub>	mg/l	Nil	-
22.	Bicarbonates as CaCO <sub>3</sub>	mg/l	1026	-
23.	Iron as Fe	mg/l	3.3	-
24.	Copper as Cu	mg/l	0.79	-
25.	Manganese as Mn	mg/l	0.44	-
26.	Zinc as Zn	mg/l	0.75	-
27.	Boron as B	mg/l	0.03	-
28.	Selenium as Se	mg/l	< 0.005	-
29.	Cadmium as Cd	mg/l	<0.001	2.0
30.	Cyanide as CN	mg/l	<0.01	-
31.	Lead as Pb	mg/l	<0.01	2.0
32.	Mercury as Hg	mg/l	<0.001	0.01
33.	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	<0.001	1.0
34.	Total Arsenic as As	mg/l	<0.01	0.2
35.	Chemical Oxygen Demand-COD	mg/l	80.2	250
36.	Bio-Chemical Oxygen Demand (27°C @ 3days)-BOD	mg/l	31.6	100
37.	Oil & Grease	mg/l	1.0	20

Note: As per the above report, all the parameters are analyzed as per APHA, 23<sup>rd</sup> Ed,2017.

  
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For SV ENVIRO LABS & CONSULTANTS





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Ref. No: SVELC/SCEIL/20-03/04

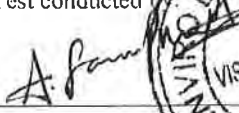
Dated: 04-05-2020

ISSUED TO : M/s. SEMB CORP ENERGY INDIA LIMITED P-2,  
Painampuram (V), Muthukur (M),  
SPSR NELLORE DISTRICT,  
ANDHRA PRADESH.

SAMPLE PARTICULARS : MARINE WATER

SOURCE OF COLLECTION : MARINE OUTFALL

DATE OF COLLECTION : 11-03-2020

STATIC ACUTE TOXICITY DATA SHEET			
SAMPLE PARTICULARS : GUARD POND EFFLUENT SAMPLE			
TEST SPECIES	SOURCE OF ORGANISM	LENGTH & WEIGHT (For fish)	
Mulloidichthys flavolineatus (Goat fish)	Through vendors.	1.Length <u>4.6 (cm)</u> 2.Weight <u>3.8(gm)</u>	1.Fish were not fed <u>yes</u> 2.Temperature range in aquaria <u>25°c</u>
REFERENCE TEST DATA			
Start Date :14-03-2020 End Date : 18-03-2020			
COMMENTS:			
The test species was undergone toxicity test for about 96hrs.			
RESULT: 100% survival of fish was noticed			
INSTRUMENTS USED:			
1. pH meter. 2. D.O meter. 3. Thermometer. 4. Glass aquarium. 5. Low flow pump. 6.Aerator 7. Balance.			
Test conducted by 			
			

# Annexure – 4B

*(Stack Monitoring Third Party Reports)*



Right Choice

# UNIVERSAL ENVIRO ASSOCIATES

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Ph: 040-27633361, e-mail: uea123@gmail.com, website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R1/0619

Date: 24-06-2019

### STACK EMISSION DATA

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-1 (Unit # I)  
Date of sampling : 11-06-2019 (Sampling time: 10:30 a.m to 11:30 a.m)

S.No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	---	m	6.9	---
2	Load of the Unit	---	MW	630	---
3	Stack Cross Sectional Area	---	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	125	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	18.3	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	17,12,613	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	32.7	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	792	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	329	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	15.1	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

  
Analyst

  
Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 02/07/19.



We Offer : ♦ Pollution Testing and Analysis ♦ STP & ETP (Turnkey, O & M) ♦ EMP/ENV. Audit etc., ♦ Other Environmental Services



Right Choice

# UNIVERSAL ENVIRO ASSOCIATES

ISO 9001 : 2015 and OHSAS 18001 : 2007 Certified Company  
Lab Recognised by MoE&F, GOI, New Delhi.

# 104 & 105, Libra Enclave, RTC 'X' Roads, Musheerabad, Hyderabad-500 020.  
Ph: 840-27633361, e-mail: uea123@gmail.com, website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R2/0619

Date: 24-06-2019

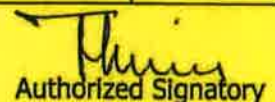
### STACK EMISSION DATA

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
**Painampuram (V),**  
**Muthukur (M),**  
**SPSR Nellore Dt., Andhra Pradesh**

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-2 (Unit # II)  
Date of sampling : 11-06-2019 (Sampling time: 11:30 a.m to 12:30 p.m)

S.No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	--	m	6.9	---
2	Load of the Unit	---	MW	650	---
3	Stack Cross Sectional Area	--	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	129	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	17.7	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	17,23,829	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	34.6	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	811	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	341	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	10.2	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

  
Analyst

  
Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 02/07/19.

DONATE EYES  
LIVE TWICE



PLANT A TREE  
SAVE THE PLANET

DONATE BLOOD  
SAVE LIFE



SAVE WATER



SAVE ENERGY

GOOD THOUGHTS  
GIVE LIFE  
HIGH ENVIRONMENTAL  
CARE WORLD



Go Green  
EACH ONE FOR A BETTER EARTH

We Offer : ♦ Pollution Testing and Analysis ♦ STP & ETP (Turnkey, O & M) ♦ EMP/ENV. Audit etc., ♦ Other Environmental Services



Right Choice

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Lab Recognised by NABL and MoEF & CC.GOI, New Delhi.

Sy. No. 178, Ramakrishna Nagar, Chengicherla, Hyderabad - 500 039, Telangana.  
Ph: 040-27633361, e-mail: uea123@gmail.com / uealab123@gmail.com  
website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R1/0919

Date: 25-09-2019

### STACK EMISSION DATA

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-1 (Unit # I)  
Date of sampling : 13-09-2019 (Sampling time: 11:25 am to 12:30 pm)

S No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	---	m	6.9	---
2	Load of the Unit	---	MW	630	---
3	Stack Cross Sectional Area	---	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	133	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	18.84	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	18,60,359	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	29.8	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	815	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	364	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	16.3	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

T. Vishwas  
Analyst

Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 01/07/20.



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ISO 9001 : 2015 and OHSAS 18001 : 2007 Certified Company  
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Sy. No. 178, Ramakrishna Nagar, Chengicherla, Hyderabad - 500 039, Telangana.  
Ph: 040-27633361, e-mail: uea123@gmail.com / uealab123@gmail.com  
website: www.universalenviro.in

## TEST REPORT

REF.NO: UEA/SEIL/R2/0919

Date: 25-09-2019

### STACK EMISSION DATA

Name of the Industry & Address: **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-2 (Unit # II)  
Date of sampling : 11-06-2019 (Sampling time: 12:45 pm to 13:40 pm)

S.No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	--	m	6.9	---
2	Load of the Unit	---	MW	650	---
3	Stack Cross Sectional Area	--	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	131	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	18.26	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	18,12,013	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	30.9	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2003	mg/Nm <sup>3</sup>	776	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	306	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	12.7	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

*T. D. Srinivas*  
Analyst

*H. Srinivas*  
Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 02/07/19.



Right Choice

# UNIVERSAL ENVIRO ASSOCIATES

SINCE 1994

Recognised by NABL and  
MoEF & CC, GOI, New Delhi.

Certified by ISO 9001 : 2015 and  
OHSAS 18001 : 2007

## TEST REPORT

REF.NO: UEA/SEIL/R1/1219

Date: 23-12-2019

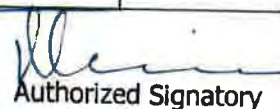
### STACK EMISSION DATA

Name of the Industry & Address : **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-1 (Unit # I)  
Date of sampling : 16-12-2019 (Sampling time: 02:25 pm to 03:00 pm)

S No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	---	m	6.9	---
2	Load of the Unit	---	MW	630	---
3	Stack Cross Sectional Area	---	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	129	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	19.3	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	19,25,412	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2012	mg/Nm <sup>3</sup>	31.6	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2012	mg/Nm <sup>3</sup>	926	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	371	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	18.6	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

  
Analyst

  
Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 01/07/20.

# 178, Ramakrishna Nagar, Opp. IOCL, Chengicherla, Hyderabad - 500 039.

Ph: 040 - 2763 3361, e-mail: uea123@gmail.com, www.universalenviro.in

WTP, STP, ETP & ZLD (Supply, O&M) | POLLUTION TESTING & ANALYSIS | ENV. AUDIT | OTHER ENV. SERVICES

Note: This report is subject to the terms and conditions mentioned overleaf.



**TEST REPORT**

REF.NO: UEA/SEIL/R2/1219

Date: 23-12-2019

**STACK EMISSION DATA**

Name of the Industry & Address: **M/s. SembCorp Energy India Limited, Project 2**  
Painampuram (V),  
Muthukur (M),  
SPSR Nellore Dt., Andhra Pradesh

Sample Particulars : Stack attached to 660 MW Power Plant Boiler-2 (Unit # II)  
Date of sampling : 16-12-2019 (Sampling time: 03:10 pm to 03:50 pm)

S.No	Parameter	Method	Unit	Result	Standard
1	Stack Diameter	--	m	6.9	---
2	Load of the Unit	---	MW	650	---
3	Stack Cross Sectional Area	--	m <sup>2</sup>	37.37	---
4	Flue Gas Temperature	IS:11255 (Part - III),2008	°C	128	---
5	Flue Exit Velocity	IS:11255 (Part - III),2008	m/sec	18.7	---
6	Flow Rate	IS:11255 (Part - III),2008	Nm <sup>3</sup> /hr	18,90,258	---
7	Particulate Matter	IS:11255 (Part - I),1985: Reaffirmed 2012	mg/Nm <sup>3</sup>	31.6	50
8	Sulphur Dioxide	IS:11255 (Part - II),1985: Reaffirmed 2012	mg/Nm <sup>3</sup>	812	---
9	Oxides of Nitrogen	IS:11255 (Part - VII),2005: Reaffirmed 2012	mg/Nm <sup>3</sup>	326	---
10	Carbon Monoxide	NSPS test method, Method - 10	ppm	15.3	---
11	Mercury as Hg	State of California Air Resources Board, Method 10A	mg/Nm <sup>3</sup>	0.01	0.03

  
Analyst

  
Authorized Signatory

STACK KIT MODLE/SR/NO: SEA-90/001009, NEXT CALIBRATION ON: 02/07/19.

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Ph: 040 - 2763 3361, e-mail: uea123@gmail.com, www.universalenviro.in

WTP, STP, EIP & ZID (Supply, O&M) | POLLUTION TESTING & ANALYSIS | ENV. AUDIT | OTHER ENV. SERVICES





# SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

**Corporate Office :** Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012  
**& Laboratory** www.svenviolabs.com, Ph:0891-2755528, Cell: +91 9440338628  
info@svenviolabs.com, svenviro\_labs@yahoo.co.in

**Branch Office :** 2-53, Mahipala Street, Yanam - 533464.

**Recognized by Govt.of India-MoEF & CC, New Delhi ,Accredited by: QCI-NABET for EIA**



Ref. No: SVELC/SCEIL/20-03/01

Dated: 04-05-2020

**ISSUED TO :** M/s. SEMB CORP ENERGY INDIA LIMITED P-2,  
Painampuram (V)  
Muthukur (M),  
SPSR NELLORE DISTRICT,  
ANDHRA PRADESH.

**DESCRIPTION OF WORK :** STACK MONITORING

**MONTH OF MONITORING :** March'20 – (11/03/2020)

**PARAMETERS REQUIRED :** PM, SO<sub>2</sub>, NO<sub>x</sub> and Hg

**SAMPLE COLLECTED BY :** SV ENVIRO LABS & CONSULTANTS, Visakhapatnam

Instrument Used	Stack Monitoring Kit	Flue Gas Analyser
Instrument Sl. Number	109-DTI-2018	054518373
Date of Calibration	12.07.2019	21.11.2019
Next Calibration Due	11.07.2020	20.11.2020

## TEST REPORT

S. No.	Parameters	Standards	Results		Methods
<b>Details of the Source</b>					
1.	Stack attached to	-	<b>UNIT-I</b> (660 MW)	<b>UNIT-II</b> (660 MW)	-
2.	Stack Diameter (m)	-	6.9	6.9	-
3.	Stack Crossectional Area (sq.m)	-	37.37	37.37	-
4.	Load of the Unit (MW)	-	630	650	-
<b>Flue Gas Characteristics</b>					
5.	Time of Monitoring	-	13.10	15.25	-
6.	Temperature (Kelvin)	-	402	406	IS:11255(P-1)1985
7.	Velocity (m/s)	-	18.6	18.3	IS:11255(P-1)1985
8.	Volumetric Flow Rate (Nm <sup>3</sup> /Hr)	-	1854935	1807036	IS:11255(P-1)1985
9.	CO in ppm	-	16.0	12.9	Flue Gas Analyzer
<b>Emission Rates</b>					
10.	Particulate Matter in mg/Nm <sup>3</sup>	50	28.9	31.2	IS:11255(P-1)1985
11.	Sulphur dioxide in mg/Nm <sup>3</sup>	-	824	782	IS:11255(P-II)1985
12.	Oxides of Nitrogen in mg/Nm <sup>3</sup>	-	372	301	IS:11255(P-7)2005
13.	Mercury as Hg in mg/Nm <sup>3</sup>	0.03	<0.01	<0.01	CPCB Guidelines

Note: The above results are corrected to 6% O<sub>2</sub>.

CHECKED BY 



For SV ENVIRO LABS & CONSULTANTS 

# **Annexure – 5**

**(Hazardous Waste Annual Returns submitted to  
APPCB for the year 2019-2020)**



**Sembcorp Energy India Limited**

(Formerly Thermal Powertech Corporation India Ltd)

CIN: U40103TG2008PLC057031

Corp. Office: 5th Floor, Tower C, Building No 8

DLF Cybercity, Gurgaon - 122002, Haryana, India

Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

[www.sembcorpenergyindia.com](http://www.sembcorpenergyindia.com)

SEIL P2/ APPCB/Nellore/2020/012

2<sup>nd</sup> April'2020

To

**The Member Secretary  
Andhra Pradesh Pollution Control Board  
D. No. 33-26-14 D/2, Near Sunrise Hospital,  
Pushpa Hotel Centre, Chelamavari Street,  
Kasturibaipet, Vijayawada – 520010.**

Dear Sir

**Sub:** Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited – SGPL) Submission of Hazardous Waste Annual Returns (Form 4) April'2019 to March'2020.

**Ref:** CFO order issued to SGPL vide Ref: APPCB/HO/UH-IV/CFO: VJA/Auto Renewal-1/2017 – dated 29.01.2017.

We would like to submit the "Hazardous Waste Annual Returns in Form 4" from Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited – SGPL), Nellore for the period of April'2019 to March'2020. Due to High Moisture content, it was required to replace the oil which was not anticipated and waste oil was disposed to APPCB authorized Hazardous Waste Recyclers. Manifests (Form X) of the Hazardous Waste Disposal are attached as Annexure – 1.

This is for your information and acceptance of compliance.

Thanking you

Yours Truly

**For M/s. Sembcorp Energy India Limited**

**(Pavan Kumar Rao V)**

**Head HSE - SEIL**

CC: APPCB, RO Office, Nellore.

**FORM 4**

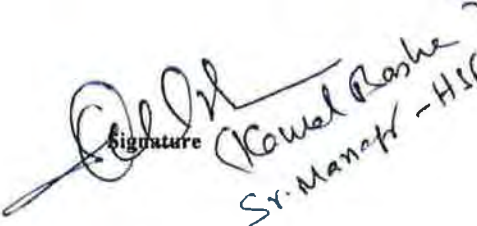
[See rules 5(6) and 22(2)]

**FORM FOR FILING ANNUAL RETURNS FROM APRIL-2018 TO MARCH-2019**

**BY THE OCCUPIER OPERATOR OF FACILITY**

<b>1. Name and Address of the generation /operator of facility</b>	: Sembcorp Energy India Limited Project 2 [ SEIL P2] (formerly known as Sembcorp Gayatri Power Limited - SGPL) Painampuram/Ananthapuram Villages, Muthukur Mandal, SPSR Nellore - 524344			
<b>2. Name of the authorized person and full address with telephone and fax number</b>	: Indo Petro Products Plot No: 101-B, S. No. 1043-2, Industrial Development Area Beside APSRTC Zonal Workshop, Kadapa - 513002			
<b>3. Description of hazardous waste</b>	<b>Physical form with description</b>		<b>Chemical form</b>	
	Waste Oil		Waste Oil / Used Oil	
<b>4. Quantity of hazardous wastes(in MTA)</b>	<b>Type of hazardous waste</b>		<b>Quantity (in Tonnes/KL)</b>	
	(a)Waste Oil		-	
	(b)		-	
	(c)		-	
<b>5. Description of Storage</b>	: Drums		-	
<b>6. Description of Treatment</b>	: Recycling		Recycling	
<b>7. Description of transportation</b>	<b>Name &amp; address of consignee</b>	<b>Mode of packing</b>	<b>Mode of transportation</b>	<b>Date of transportation</b>
	: Giving to authorize & recyclers Indo Petro Products Plot No: 101-B, S. No. 1043-2, Industrial Development Area Beside APSRTC Zonal Workshop, Kadapa - 513002			
<b>8. Details of disposal of hazardous waste</b>	<b>Name &amp; address of consignee</b>	<b>Mode of packing</b>	<b>Mode of Transportation</b>	<b>Date of transportation</b>
	: After Collecting drums , disposing once in a year Disposing the Waste Oil to APPCB approved Hazardous Waste Recycler as per Hazardous Waste (Management & Handling) Rules.			
<b>9. Quantity of useful materials sent back to the manufactures and others</b>	: Name and type of material sent back to Manufacturers and Others		<b>Quantity in Tonnes/KL</b>	
			31.8 KL (Due to High Moisture Content the Oil Was replaced.)	

Date: 2/4/2020  
Place: Nellore


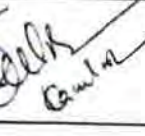
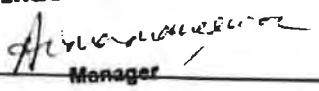
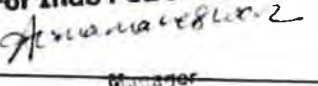
  
 Signature (Kowal Rashe)  
 Sr. Manoj - HIE

For

Sembcorp Energy India Limited Project 2 [ SEIL P2]  
(formerly known as Sembcorp Gayatri Power Limited - SGPL)

**FORM 10**  
[See rule 19 (1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1	Sender's name and mailing address (including Phone No. and e-mail)	ZEMCO SIB Gayatri Polu di Ltd Amanthalam (V), Vani Kava Pudi, Palacuram NELLORE DISTRICT, A.P.		
2	Sender's authorisation No.	APRB/HO/VII-N/CFD:VJA/Amr Regn 1/2017.		
3	Manifest Document No.	001/19-20		
4	Transporter's name and address (including Phone No. and e-mail)	Indo Petro Products Kadapa		
5	Type of vehicle	(Truck/Tanker/Special Vehicle)		
6	Transporter's registration No.	NA		
7	Vehicle registration No.	AP ATX 554 <b>INDO PETRO PRODUCTS</b>		
8	Receiver's name and mailing address (including Phone No. and e-mail)	Plot No: 101-B, S. No.1043-2, Industrial Development Area, Beside APERTS Zonal Workshop,		
9	Receiver's authorisation No.	KADAPU - 513 352 CDP-62/APRCS/20-KNL/CFD/Amr/2019		
10	Waste description	Waste oil with ms barrels		
11	Total quantity No. of Containers	6.62 m3 of MT 35 Barrels Nos.		
12	Physical form	(Solid/Semi-Solid/Sludge/Oily/Tarry/ Slurry/Liquid)		
13	Special handling instructions and additional information	NA		
14	Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.		
	Name and stamp: 	Signature: 	Month	Day
			05	14
			20	19
15	Transporter acknowledgement of receipt of Wastes			
	Name and stamp: <b>For Indo Petro Products</b>	Signature: 	Month	Day
			05	14
			20	19
16	Receiver's certification for receipt of hazardous and other waste			
	Name and stamp: <b>For Indo Petro Products</b>	Signature: 	Month	Day
			05	14
			20	19




Copy 1 (White) - To be forwarded by the Generator to the SPCB  
Copy 2 (Yellow) - To be retained by Generator after taking sign from Transporter  
Copy 3 (Pink) - To be retained by TSDF after signature  
Copy 4 (Orange) - To be retained to the Transporter by the TSDF after accepting waste

Copy 5 (Green) - To be retained by the TSDF to SPCB after treatment and Disposal of wastes  
Copy 6 (Blue) - To be retained by TSDF to the Generator after treatment and Disposal of Hazardous wastes  
Copy 7 (Grey) - To be submitted to CRCB for transboundary movement

**FORM - 10**

[See Rule 19 (1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1.	Sender's Name & Mailing Address (including Phone No. and E-mail)	SEMB CORP GAYATRI POWER Ltd, Nellore (A.P)						
2.	Sender's Authorisation No.	APPCB/HO/VII-IV/cfu/VJA/14/10/2017 1/2017						
3.	Manifest Document No.	002/19-20						
4.	Transporter's Name & Address (Including Phone No. & E-mail)	Party's						
5.	Type of Vehicle	<input checked="" type="checkbox"/> Truck / Tanker / Special Vehicle						
6.	Transporter's Registration No.	MP07HB 5153						
7.	Vehicle Registration No.	MP07HB 5153						
8.	Receiver's Name and Mailing Address (Including Phone No. and E-mail)	OM UDYOG E-403, Ph-6, focal point Indians, (P.B)						
9.	Receiver's Authorisation No.	Regu/PPCB/2018-23/F151/dt 14/11/18						
10.	Waste Description	Waste oil with drum						
11.	Total Quantity No. of Containers	.....m <sup>3</sup> or MT 58 Nos.						
12.	Physical Form	(Solid/Semi-Solid/Sludge/Oily/Tarry/Slurry/Liquid)						
13.	Special Handling Instructions and Additional Information	Incase of fire please contact to nearest fire station						
14.	SENDER'S CERTIFICATE : I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked and labeled and are in all respects in proper conditions for transport by road according to applicable national government regulations.							
	Name & Stamp : 	Signature : <table border="1" style="display: inline-table; text-align: center;"> <tr><td>Month</td><td>Day</td><td>Year</td></tr> <tr><td>09</td><td>04</td><td>2019</td></tr> </table>	Month	Day	Year	09	04	2019
Month	Day	Year						
09	04	2019						
15.	Transporter Acknowledgment of Receipt of Wastes :							
	Name & Stamp : 	Signature : <table border="1" style="display: inline-table; text-align: center;"> <tr><td>Month</td><td>Day</td><td>Year</td></tr> <tr><td>09</td><td>04</td><td>2019</td></tr> </table>	Month	Day	Year	09	04	2019
Month	Day	Year						
09	04	2019						
16.	Receiver's Certification for Receipt of Hazardous and Other Waste :							
	Name & Stamp : 	Signature : <table border="1" style="display: inline-table; text-align: center;"> <tr><td>Month</td><td>Day</td><td>Year</td></tr> <tr><td>09</td><td>04</td><td>2019</td></tr> </table>	Month	Day	Year	09	04	2019
Month	Day	Year						
09	04	2019						

White Copy - (1) : To be Forwarded by the sender to the State Pollution Control Board after signing all the seven copies.

**FORM - 10**  
[See Rule 19(1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1. Sender's Name & Mailing Address (Including Phone No. & E-mail)	Sembcorp Bayahi power Ltd., Anantha Varam Village, Vayakavipudi Panchayat, Vellore - 521 344			
2. Sender's Authorisation No.	APR B/HO VII-IV/CFD/VJA/Auto Regd. 1/2017			
3. Manifest Documents No.	003/19-20			
4. Transporter's Name & Address : (Including Phone No. & E-mail)	Sun Lube Industries Gummidipoondi - 601201 Tamil Nadu			
5. Type of Vehicle :	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Tanker <input type="checkbox"/> Special Vehicle			
6. Transporter's Registration No. :	—			
7. Vehicle Registration No :	TN 04 M 7196			
8. Receiver's Name & Mailing Address (Including Phone No. & E-mail)	<b>SUN LUBE INDUSTRIES</b> Factory : R-22, Sipcot, Industrial Complex, Gummidipoondi - 601 201. Phone : 044-26532377			
9. Receiver's Authorisation No. :	19 HFC 24211381			
10. Waste Description :	Waste oil			
11. Total Quantity : No. Of Containers	5.16 M <sup>3</sup> or MT 28 barrel Nos.			
12. Physical Form	<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Tarry <input type="checkbox"/> Liquid <input type="checkbox"/> Semi Solid <input checked="" type="checkbox"/> Oily <input type="checkbox"/> Slurry			
13. Special Handling Instruction & additional information :	Handle with care			
14. Sender's Certificate : I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked and labeled and are in all the respects in proper conditions for transport by road according to applicable national government regulations.				
Name & Stamp	Signature	Month	Day	Year
(S. Nagarajan)	(S. Nagarajan)	12	13	2019
15. Transporter's Acknowledgment of receipt of wastes :				
Name & Stamp	Signature	Month	Day	Year
(Karthikeyan)	(Karthikeyan)	12	13	2019
16. Receiver's Acknowledgment for receipt of hazardous and other wastes				
Name & Stamp	Signature	Month	Day	Year
(Karthikeyan)	(Karthikeyan)	12	13	2019
NOTE : Please attach Comprehensive Analysis Report Photocopy				
First Copy	To be forwarded to the TNPCB by the Sender			

**FORM - 10**  
[See Rule 19(1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1. Sender's Name & Mailing Address (Including Phone No. & E-mail)	Sembcorp Energy, power Ltd, Oradur, Achra madak			
2. Sender's Authorisation No. :	APPCB/HO/VII-IV/CPO/VJA/AUTO. REGO. 1/2020			
3. Manifest Documents No. :	004/19-20			
4. Transporter's Name & Address (Including Phone No. & E-mail)	Sunlube Industries R-22, Sipcot Complex Gummidipoondi, 601201 - Tamilnadu			
5. Type of Vehicle :	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Tanker <input type="checkbox"/> Special Vehicle			
6. Transporter's Registration No. :	-			
7. Vehicle Registration No. :	TN 04 M 7196			
8. Receiver's Name & Mailing Address : (Including Phone No. & E-mail)	<b>SUN LUBE INDUSTRIES</b> Factory : R-22, Sipcot, Industrial Complex, Gummidipoondi - 601 201. Phone : 044-26532377			
9. Receiver's Authorisation No. :	19HFC 24211381			
10. Waste Description :	used oil 5.1			
11. Total Quantity : No. Of Containers	7.24 M <sup>3</sup> or MT 38 barrels Nos.			
12. Physical Form	<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Tarry <input type="checkbox"/> Liquid <input type="checkbox"/> Semi Solid <input checked="" type="checkbox"/> Oily <input type="checkbox"/> Slurry			
13. Special Handling Instruction & additional information :	Handle with care			
14. Sender's Certificate : I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked and labeled and are in all the respects in proper conditions for transport by road according to applicable national government regulations.				
Name & Stamp	Signature	Month	Day	Year
		01	07	2020
15. Transporter's acknowledgment of receipt of wastes :				
Name & Stamp	Signature	Month	Day	Year
		01	07	2020
16. Receiver's certificate for receipt of hazardous and other wastes				
Name & Stamp	Signature	Month	Day	Year
		01	07	2020

NOTE : Please attach Comprehensive Analysis Report Photocopy

First Copy

To be forwarded to the TNPCCB by the Sender



# Annexure – 6

***(Annual Fly Ash Utilization Report for the year  
2019 – 2020 submitted to APPCB / CPCB)***



**Sembcorp Energy India Limited**  
(Formerly Thermal Powertech Corporation India Ltd)  
CIN: U40103TG2008PLC057031  
Corp. Office: 5th Floor, Tower C, Building No 8  
DLF Cybercity, Gurgaon - 122002, Haryana, India  
Tel (91) 124 389 6700 / 01  
Fax (91) 124 389 6710  
www.sembcorpenergyindia.com

SEIL P2/ APPCB/Nellore/2020/016  
20<sup>th</sup> April'2020

To  
**The Divisional Head, IPC-II,  
Central Pollution Control Board  
East Arjun Nagar, Delhi - 110032**

**Kind Attention: Shri Nazimuddin (Divisional Head, IPC-II, CPCB, Delhi)**

**Sub:** Statutory Compliance Report to CPCB on Annual Fly Ash Utilization (01.04.2019 to 31.03.2020) from Sembcorp Energy India Limited Project 2 – SEIL P2 [formerly known as Sembcorp Gayatri Power Limited – SGPL].

**Ref:** CFO issued vide order APPCB/HO/UH-IV/CFO: VJA/Auto Renewal-1/2017 dt. 29<sup>th</sup>Jan 2017, valid till 28.02.2022.

Dear Sir,

Please find attached herewith the statutory compliance report to CPCB on fly ash utilization data (01.04.2019 to 31.03.2020) in the desired format.

Sembcorp Energy India Limited Project 2 – SEIL P2 [formerly known as Sembcorp Gayatri Power Limited – SGPL] would like to reiterate its commitment & assures that we are making best efforts in achieving 100% ash utilization.

Thanking you

Yours Truly  
For M/s. Sembcorp Energy India Limited

**(Pavan Kumar Rao V)**  
**Head HSE - SEIL**

**Encl:** CPCB Annual Fly Ash Utilization Format. (Annexure – I)

**CC:** The Member Secretary - APPCB, Vijayawada.  
The Regional Officer - APPCB, Nellore

**Fly Ash Notification S.O. 2804(E), 3<sup>rd</sup> November 2009 -  
Statutory Compliance Report for the period 01.04.2019 to 31.03.2020**

S. No.	Item	Reply
1	Name of Thermal Power Station	Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited - SGPL)
2	Full address including Pin code	Sembcorp Energy India Limited Project 2 - SEIL P2 (formerly known as Sembcorp Gayatri Power Limited - SGPL) Anantapuram, Sivarampuram Villages, Muthukur Mandal, SPSR Nellore - 524344, Andhra Pradesh, India
3	E-mail address	<a href="mailto:siva.ramakrishna@sembcorp.com">siva.ramakrishna@sembcorp.com</a>
4	Name of the Nodal Officer (not below the rank of DGM / Dy. CE / or equivalent) dealing with ash/environment management and designation	D. Sivaramakrishna (General Manager)
5	Contact No.	8008400478
6	Fax No.                      Email:	<a href="mailto:siva.ramakrishna@sembcorp.com">siva.ramakrishna@sembcorp.com</a>
7	Capacity of the Thermal Power Station (MW)	1320 MW
8	Details of Number of Units and capacity of each unit	2 Units x 660 MW
9	Coal / Lignite Consumption in 2019-2020 (in Million Tonnes)	4.315 Million Tonnes

**A. Ash Generation in 2019-2020 (in tonnes).**

10	Bottom Ash	1,00,520
11	Fly Ash	4,55,745
	<b>Total A (10 to 11)</b>	<b>5,56,265</b>

**B. Ash unutilised (in tonnes)**

12	Ash Pond disposal	2,75,514
13	Ash yard	Nil
14	Ash Dump	Nil
	<b>Total B (12 to 14)</b>	<b>2,75,514</b>

**C. Ash utilization in 2019-2020 (in tonnes)**

	Purpose for which ash is utilized	Target (as per action plan)	Actual			
			From ESP Dry Ash (1)	From Pond Ash (2)	From Bottom Ash (3)	Total (1+2+3)
15	Ash dyke raising (if applicable)	90%	-	-	-	-
16 *	Cement industry		86,444	-	-	86,444
17	Land fill		12,076	-	14,513	26,589

18	Own Brick Unit	-	-	-	-
19 *	Outside brick Units other than brick kilns	1,47,902	1,260	4,739	1,53,901
20 *	Brick Kilns	-	-	-	-
21	Own ash based products (other than bricks)	-	-	-	-
22	Ash based products (outside)	-	-	-	-
23 *	Road and Flyover Embankments	-	-	-	-
24 *	Back filling of mines	-	-	-	-
25	Agriculture	-	-	-	-
26	Ready mix concrete	541	-	-	541
27	Asbestos	-	-	-	-
28 *	Exports	13,277	-	-	13,277
29	Others (please specify)	-	-	-	-
	<b>Total C (15 to 29)</b>	<b>2,60,240</b>	<b>1,260</b>	<b>19,252</b>	<b>G. Total: 2,80,752</b>

#### D. Reasons for variation from the target

1. Due to Central and State elections from March'2019 to July'2019, fly ash off take was severely affected as there were no construction works which in turn lead to very less demand to Cement. Due to this no off-take of Ash by Cement & Brick Industries.
2. Change in Sand Policy by AP State Govt, reduced the offtake from Brick Industries. New Sand Policy by AP State Govt, severely affected the construction industry in the state and cement demand drastically reduced. This situation lead to low cement production by the cement industries and fly ash off-take by cement industries virtually stopped.

#### E. Remedial Measures taken

1. Regular follow-ups with Cement & Brick industries to increase the off-take of fly ash.
2. Exploring export opportunities. Bulk shipment of 12,537MT done to USA & 749 MT done to Bangladesh.
3. Submitted request letter to APPCB to issue letter to the local builders & Govt. agencies to use fly ash for construction & low-lying areas filling based on the MoEF notification.
4. Common Ash Classification Unit is expected commissioning by End of June'2019.

#### F. Quantity in ash pond

30.	Estimated quantity of Pond ash in active ash pond (pond in use) as on 31.03.2020 (in Million Tonnes)	0.885 Million Tonnes
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### G. Ash Pond Details

31	Total area ear marked for ash ponds (ha)	Forest Area	Non Forest Area	Total
32	Ash ponds already filled dup and reclaimed (ha)	Nil	Nil	Nil
33	Ash ponds already filled up but yet to be reclaimed (ha)	Nil	Nil	Nil
34	Ash ponds in use (ha) (Active ash ponds)	Nil	Nil	54.63 (135 acres)
35	Area earmarked for ash ponds but ash ponds yet to be constructed (ha)	Nil	Nil	Nil

### H. Dry ash collection facilities

36	Dry fly ash collection facility available	Yes
37	If yes, how many units	3 Nos Silos, Capacity 2000m3 Each

### I. Dry fly ash storage

38	Daily Ash Generation (TPD)	Capacity of storage as on 31.03.2020 (tonnes)	Capacity proposed if any in 2019-2020 (tonnes)
	1200	3 Nos Silos, Capacity 2000m3 Each	NIL

### J. Capital Expenditure (Rs. Lakhs)

	Item	Item Expenditure in 2019-2020 (Rs. Lakhs)	Budgetary provision in 2019-2020 (tonnes)
39	Bottom Ash collection facility	Sembcorp Energy India Limited Project 2 (formerly known as Sembcorp Gayatri Power Limited - SGPL) is in operation from Feb'2017. Ash Pond is constructed and being used. No additional expenditure in 2019-2020 is incurred.	
40	Dry fly ash storage		

### K. Dispute Settlement Committee

41	No. of meetings held in 2019-2020	If no meetings were held, reason for the same
	2 meetings held with brick manufacturers. Their difficulties were shared and resolved.	Not Applicable

### L. Provision regarding supply to the brick kilns


42	Whether the Thermal Power Station is maintaining month-wise records of ash made available to each brick kiln	Yes		
43	If yes, how many brick kilns have been supplied with fly ash	32		
	Mode of transport of Ash: Truck / Trailer / Closed Container / Covered with Tarpaulin / Open	44	Dry ash	Closed Container
		45	Wet Ash	Open Trucks Covered with Tarpaulin

### M.Promotional Measures

		No. of meetings / workshops exhibition held during 2019-2020	Amount spent in 2019-2020 (Rs. Lakhs)	Outlay for 2019-2020 (RS. Lakhs)
46	Public Awareness Campaign	Nil	Nil	Nil
47	Exhibitions	Nil	Nil	Nil
48	Seminars / Workshops	5	1 lakh	Nil
49	Advertisement in Newspapers	Nil	Nil	Nil
50	TV / Radio Advertisements	Nil	Nil	Nil
51	TV / Radio Advertisements	Nil	Nil	Nil
	<b>Total M (46 to 51)</b>	5	1 lakh	Nil

### 52. Administrative Measure taken

S. No.	Administrative Measure	Outcome
(i)	Meeting with brick manufacturers	2 meetings held with brick manufacturers. Their difficulties were shared and resolved.
(ii)	Meeting with State Government / Agencies	3 meetings held at APPCB, Vijayawada on Ash Utilization Review. Action Plans were identified to increase the ash utilization and SEIL submitted the compliances. 2 meeting held at CPCB, New Delhi on Ash Utilization Review. Action Plans were identified to increase the ash utilization and SEIL submitted the 2 years look-ahead action plan for 100% fly ash utilization.
(iii)	Any other measure (please specify)	SEIL submitted request letter to APPCB on 20 <sup>th</sup> Dec'2019 to issue letter to the local builders & Govt. agencies to use fly ash for construction & low-lying areas filling based on the MoEF notification

  
Pavan Kumar Rao  
Head - HSE  
On Behalf of Plant Head



Name: K. Ramesh Raman  
Designation: Head - O&M  
Date: 20-04-2020