

**IN THE HON'BLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI  
ORIGINAL APPLICATION NO. 122 OF 2024**

**IN THE MATTER OF  
MANOJ KUMAR**

**.... APPLICANT**

**VERSUS**

**SHUBH CHEMICALS &  
ORGANOSYS & ORS**

**.... RESPONDENTS**

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THROUGH



**ADV. PRIYANKA SWAMI & ADV. SIMRAN SEHGAL**  
**ADVOCATE**  
**F- 13, Ground Floor, Jangpura Extension,**

**Date: 22. 04 .2024**

**New Delhi- 110014**

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**ACTION TAKEN REPORT ON BEHALF OF THE RESPONDENT NO. 1 IN  
COMPLIANCE OF ORDER DATED 05.04.2024**

1. In compliance with the order dated 05.04.2024, an Action Taken Report has been filed by respondent No. 1, project proponent, as directed by the Hon'ble National Green Tribunal.

*“5. The Joint Committee has stated that the unit has not submitted safety audit report and has not updated the same. The unit has not taken any policy under the Public Liability Insurance Act 1991. The unit has not provided any proper effluent treatment plant and alarming system. The pipelines are without any coating to prevent corrosion and without any colour coding/proper labeling.”*

2. That it is respectfully submitted that in compliance with the order dated 05.04.2024, we have duly complied with all directives issued by this hon'ble national green tribunal. That with regard to the observations made during the joint committee inspection on 29-02-2024, we have diligently addressed and rectified all concerns outlined by the Uttar Pradesh Pollution Control Board (UPPCB), undertaking requisite measures in accordance with their recommendations.
3. That it is respectfully submitted that the Water Sample Parameters have been meticulously examined and submitted, yielding results deemed satisfactory by the Uttar Pradesh Pollution Control Board (UPPCB). The water in question is utilized in the green belt area of 2.5 bighas. A copy of the report and along with the photos of the green belt within the campus of the unit is attached here as ANNEXURE 1.
4. That it is respectfully submitted that the Safety Audit for the company has been conducted independently by a certified BHAWANI CONSULTANT company impanelled with UPPCB, the third party. A true copy of the audit report for the scrutiny and consideration of this Hon'ble Tribunal is attached here as ANNEXURE 2.
5. That it is respectfully submitted that the Public Liability Insurance policy has been procured and became effective on the 5th of April 2024, bearing policy number 34070036243300000001. A true copy of the policy is attached here as ANNEXURE 3.

6. That it is respectfully submitted that an Effluent Treatment Plant equipped with a pH meter has been duly installed within the premises of the company. A true and comprehensive depiction of the Effluent Treatment Plant, including accompanying photographs, is annexed herewith as ANNEXURE 4.
7. That it is respectfully submitted that both a Sulphur Dioxide (SO<sub>2</sub>) Meter with an automated alarm system and a pH meter for Sulphuric Acid, also equipped with an automated alarm system, have been meticulously installed. The authentic photographs depicting the installation of the aforementioned meters for scrutiny and consideration are attached here as ANNEXURE 5.
8. That it is respectfully submitted that the colour coating and insulation have been meticulously applied to all processes and other pipelines as per requisite standards to prevent the corrosion of the pipelines. The authentic photographs illustrating the colour coating and insulation processes undertaken for scrutiny and consideration are attached here as ANNEXURE 6.
9. That it is respectfully submitted that the colour coding and labelling have been diligently implemented on all process pipelines, ensuring clear identification and adherence to safety standards. The authentic photographs demonstrating the colour coding and labelling procedures conducted for scrutiny and consideration are annexed here as ANNEXURE 7.
10. That it is respectfully submitted that the Uttar Pradesh Pollution Control Board (UPPCB) received a letter on 16.04.2024 to conduct an inspection, which was held on 20.04.2024, and we are currently awaiting the issuance of

their report. A true copy of the letter dated 16.04.2024 from Shubh Chemicals, requesting the inspection, for the consideration of their report is annexed here as ANNEXURE 8.

**PRAYER**

It is, therefore, most respectfully prayed that this Hon'ble Tribunal may graciously be pleased to:

- i. That the alarming system for SO<sub>3</sub>, Sulphur Trioxide is not manufactured in India, therefore it could not be installed.
- ii. That the compliance of the order and necessary action are done as per the order, with the sincere request, kindly dispose of the matter.
- iii. Pass any such other order as may deem fit.



THROUGH

**ADV. PRIYANKA SWAMI & ADV. SIMRAN SEHGAL  
ADVOCATE**

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.... RESPONDENTS

**AFFIDAVIT**

Affidavit of Sh. Anshul Kalra aged about 38 years, s/o Sh. Vinod Kalra, presently posted as, Director having an office at 175/4, Sangam Vihar, Jansath Road, Muzaffarnagar (U.P).

1. That I am stating the above and well conversant with the facts of the present case and as such competent to swear his affidavit before this tribunal.
2. That the accompanying reply has been drafted by our counsel upon my Instructions.
3. That the contents of the accompanying reply are true and correct and the knowledge has been derived based on my subordinate staff and nothing material has been concealed therefrom.

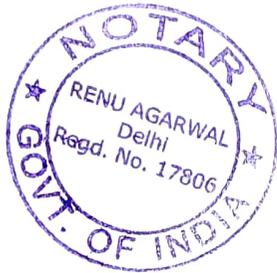
*[Signature]*  
**DEPONENT**

22 APR 2024

**VERIFICATION**

I, the above named deponent do hereby verify that the contents of the above affidavit which are true to my knowledge derived from the official records. No part of the same is false and nothing has been concealed therefrom. Verified on this the 22 day of April, 2024 at New Delhi.

*[Signature]*  
Identified the deponent who has signed in my presence



*[Signature]*  
**DEPONENT**

**Presently at New Delhi**

**ATTESTED**  
*[Signature]*  
**NOTARY PUBLIC**  
**(INDIA)**

22 APR 2024



# SHUBH CHEMICALS AND ORGANOSYS PRIVATE LIMITED

Ref No. SCPL/24-25/012

DATE – 15-04-2024

## Work Order (AMC)

To,  
Enviro-Tech Services  
Plot No. 1/32, S.S. of G.T. Road  
Industrial Area, Ghaziabad

Dear Sir,

With reference to your quotation no. 2024/04/Q29 dated 15/04/2024 and subsequent discussion held with you over phone, we are pleased to place our work order for annual basis (AMC) as per details hereunder:

S.No	Particulars	Qty	Price (each)
1.	Ambient Air Monitoring & Testing (Acid Mist) A5Test,PM10,PM2.5, SO2, NO2 & CO	1 No	Rs 4,000/-
2.	Stack Emission Monitoring & Testing (Boiler) Acid Mist ST6Test,Temp. Flow Rate,Velocity, PM, SO2 , NO2	1 No	Rs 3,000/-
3.	Water Sampling & Testing(GW). W60Test,Complete Test (Chemical/Physical/Metal/Pesticides & Micro, Except radioactive)	1 No	Rs 4,500/-
4.	Waste Water Sampling & Testing (ETP) WW5Test,pH, TSS, COD, BOD, O&G	1 No	Rs 2,000/-
5.	Transportation & Sampling Collection Charge per Visit Transportation,From ETS Lab- GZB to Site & Return @ 12/- per Km		

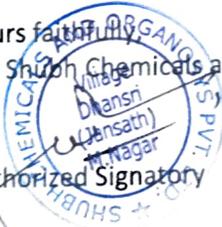
GST : Extra as applicable at the time of delivery

*Kindly accept PO and send your acceptance for our record purpose.*

Thanking You,

Yours faithfully,  
For Shubh Chemicals and Organosys Pvt Ltd

Authorized Signatory



Regd. Office & Works :

VILL. DHANSRI, TEH. JANSATH DISTT. MUZAFFARNAGAR (U.P.) PIN - 251314

GSTIN : 09ABECS6849K1ZM CIN : U24110UP2020PTC136364 PAN : ABECS6849K

Mob.: 7534805354, 9560834999 e-mail : accounts@shubhchemicals.in,



# 137 ENVIRO-TECH SERVICES

An Analytical Laboratory

(A GOVERNMENT APPROVED LAB)

Plot No. 1/32, S.S. of G.T. Road Industrial Area, Ghaziabad (U.P.) - 201001

email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063



## TEST REPORT

TEST REPORT NO.: ETS/1030-1/04/2024

URLNO.TC130092400010301F

DATE OF REPORT: 13.04.2024

### AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer

M/s, SHUBH CHEMICALS & ORGANOSYS PVT. LTD.  
KH.NO-1161, 1162, VILLAGE-DHANSRI, TEHSIL-JANSATH,  
DISTT-MUZAFFARNAGAR, U.P-251314.

Date of Monitoring

: 09.04.2024

Analysis Start Date

: 10.04.2024

Analysis End Date

: 13.04.2024

Duration Of Monitoring

: 09.04.2024 To 10.04.2024

Time Of Monitoring

: 10.10 AM To 10.10 AM (CO & O<sub>3</sub> for 1.0 Hrs.)

Sample ID No

: 1030-1

Sampling Done By

: ETS STAFF

Sampling Location

: 150 METER (SOUTH SIDE)

Sampling Method

: ETS/STP/AIR-01

Sampling Machine Placed At Height

: 1.5 METER FROM GROUND LEVEL

Weather Condition

: CLEAR Ambient Temperature: 35.0 °C

Wind Direction

: E To W

Equipment Used

: Respirable Dust Sampler (PM<sub>10</sub>) + Fine Particulate Sampler (PM<sub>2.5</sub>)

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters,(PM <sub>10</sub> )	µg/m <sup>3</sup>	88.5	For 24 Hrs.=100	IS 5182 (Part-23)
2	Particulate Matters,(PM <sub>2.5</sub> )	µg/m <sup>3</sup>	46.2	For 24 Hrs.=60	IS 5182 (Part-24)
3	Sulphur Dioxide, (SO <sub>2</sub> )	µg/m <sup>3</sup>	14.0	For 24 Hrs.=80	IS: 5182 (Part-2)
4	Nitrogen Dioxide,(NO <sub>2</sub> )	µg/m <sup>3</sup>	30.0	For 24 Hrs.=80	IS: 5182 (Part-6)
5	Ozone,(O <sub>3</sub> )	µg/m <sup>3</sup>	18.0	For 1 Hrs.=180	IS: 5182 (Part-9)
6	Lead,(Pb)	µg/m <sup>3</sup>	<0.05	For 24 Hrs.=1	IS 5182 (Part-22)
7	Ammonia,(NH <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	For 24 Hrs.=400	IS 5182 (Part-25)



CHECKED BY  
PURNIMA SINGH

For ENVIRO-TECH SERVICES

AUTHORIZED SIGNATORY  
Quality Manager

Format No ETS/LAB/TR-01, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

#### Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
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email : etslab2012@gmail.com | Website : www.etslab.in | Ph.: 9911516076, 9811736063



## TEST REPORT

TEST REPORT NO.: ETS/1030-1/04/2024

DATE OF REPORT: 13.04.2024

### AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
8	Arsenic,(As)	ng/m <sup>3</sup>	<1.0	For Annual=06	CPCB,Vol.-1, Pg.-48
9	Nickel,(Ni)	ng/m <sup>3</sup>	<1.0	For Annual=20	IS 5182 (Part-26)
10	Benzene,(C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<1.0	For Annual.=5	IS 5182 (Part-11)
11	Carbon Monoxide,(CO)	mg/m <sup>3</sup>	0.90	For 1 Hrs.=4	IS 5182 : Part 10
12	Benzo (a) Pyrine (BaP)	ng/m <sup>3</sup>	<0.05	For Annual=01	IS: 5182 (Part-12)

\*\*\*\*\*End of Test Report\*\*\*\*\*



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PURNIMA SINGH

For ENVIRO-TECH SERVICES

AUTHORIZED SIGNATORY  
Quality Manager

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TC-13009



## TEST REPORT

TEST REPORT NO.: ETS/1030-2/04/2024 URLNO.TC130092400010302F DATE OF REPORT: 13.04.2024

### STACK EMISSION MONITORING AND ANALYSIS REPORT

Name And Address of Customer : M/s, SHUBH CHEMICALS & ORGANOSYS PVT. LTD.  
KH.NO-1161, 1162, VILLAGE-DHANSRI, TEHSIL-JANSATH,  
DISTT-MUZAFFARNAGAR, U.P-251314.

Date Of Sampling : 09.04.2024  
Analysis Start Date : 10.04.2024  
Analysis End Date : 13.04.2024  
Duration Of Sampling : 30.0 MIN  
Sample ID No. : 1030-2  
Sampling Done By : ETS STAFF  
Sampling Method : ETS/STP/STACK-01  
Stack Attached To : SULPHURIC ACID PLANT (SAP)  
Capacity Of Stack : 125 TPD  
Type Of Fuel Used : SULPHUR  
Stack Height Above Ground : 50.0 MTR.  
Stack Dia At The Top : 800.0 MM  
Material Of Construction : M.S.  
Attached APCS : ALKALI SCRUBBER  
Normal Operating Schedule : 24.0 HRS  
Ambient Temperature : 35.0°C  
Flue Gas Temperature : 150.0°C  
Velocity Of Flue Gases : 12.2 MTR./SEC.  
Quantity Of Emissions Discharged : 22065.40 M<sup>3</sup>/HR

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Sulphur Dioxide,(SO <sub>2</sub> )	mg/Nm <sup>3</sup>	1160.0	1370	IS-11255 (Part-2)

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PURNIMA SINGH

For ENVIRO-TECH SERVICES

AUTHORIZED SIGNATORY

Quality Manager

Format No ETS/LAB/TR-05, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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# 140 ENVIRO-TECH SERVICES

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ISO 45001

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## TEST REPORT

TEST REPORT NO.: ETS/1030-2/04/2024

DATE OF REPORT: 13.04.2024

### STACK EMISSION MONITORING AND ANALYSIS REPORT

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
2	Acid Mist (H <sub>2</sub> SO <sub>4</sub> )	mg/Nm <sup>3</sup>	40.0	90	Volumetric Method

\*\*\*\*\*End of Test Report\*\*\*\*\*

  
**CHECKED BY**  
**PURNIMA SINGH**

  
**For ENVIRO-TECH SERVICES**  
**AUTHORIZED SIGNATORY**  
 Quality Manager

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## TEST REPORT

TEST REPORT NO.: ETS/1030-3/04/2024 URLNO.TC130092400010303F DATE OF REPORT: 13.04.2024

## WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : M/s, SHUBH CHEMICALS & ORGANOSYS PVT. LTD.  
KH.NO-1161, 1162, VILLAGE-DHANSRI, TEHSIL-JANSATH,  
DISTT-MUZAFFARNAGAR, U.P.-251314.

Date of Sampling : 09.04.2024

Analysis Start Date : 10.04.2024

Analysis End Date : 13.04.2024

Sample ID No : 1030-3

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : FROM BOREWELL

Sampling Method : ETS/STP/WATER-02

Sample Quantity : 2.0 + 0.5 Ltr.

Packing Condition : SEALED

Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per IS:10500: 2012 )		Test Method
				Desirable	Permissible	
<b>Physical &amp; Chemical Parameters;</b>						
1	Colour	Hazen	<5.0	5	15	APHA 2120-B
2	Odour	...	Agreeable	Agreeable	Agreeable	APHA 2150-B
3	Taste	...	Agreeable	Agreeable	Agreeable	APHA 2160-C
4	pH	...	7.35	6.5 - 8.5	No Relaxation	APHA 4500-H+
5	Turbidity	NTU	<1.0	1	5	APHA 2130-B
6	Total Dissolved Solids,(TDS)	mg/L	370.2	500	2000	APHA 2540-C
7	Chlorine (Residual)	mg/L	<0.1	0.2	1	APHA 4500:(Cl)-B
8	Fluoride,(F)	mg/L	0.11	1	1.5	APHA 4500:(F-)-D
9	Total Alkalinity,(CaCO <sub>3</sub> )	mg/L	130.0	200	600	APHA 2320-B
10	Total Hardness,(CaCO <sub>3</sub> )	mg/L	150.0	200	600	APHA 2340-C
11	Chloride,(Cl)	mg/L	28.5	250	1000	APHA 4500:(Cl)-B
12	Calcium,(Ca)	mg/L	40.1	75	200	APHA 3500:(Ca)-B
13	Magnesium,(Mg)	mg/L	11.9	30	100	APHA 3500:(Mg)-B
14	Nitrate,(NO <sub>3</sub> )	mg/L	1.10	45	No Relaxation	APHA 4500:(NO <sub>3</sub> )-B
15	Sulphate,(SO <sub>4</sub> )	mg/L	18.0	200	400	APHA 4500:(SO <sub>4</sub> )-E

  
CHECKED BY  
PURNIMA SINGH

For ENVIRO-TECH SERVICES

AUTHORIZED SIGNATORY

Format No ETS/LAB/TR-09, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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## TEST REPORT

TEST REPORT NO.: ETS/1030-3/04/2024

DATE OF REPORT: 13.04.2024

### WATER SAMPLE ANALYSIS REPORT

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per IS:10500: 2012 )		Test Method
				Desirable	Permissible	
16	Sulphide,(H <sub>2</sub> S)	mg/L	<0.01	0.05	No Relaxation	APHA 4500:(S <sub>2</sub> )-D
17	Anionic Detergent,(MBAS)	mg/L	<0.01	0.2	1	APHA 5540-C
18	Phenolic Compound,(C <sub>6</sub> H <sub>5</sub> OH)	mg/L	<0.001	0.001	0.002	APHA 5530-C
19	Ammonia,(as Total NH <sub>3</sub> -N)	mg/L	<0.01	0.5	No Relaxation	APHA 4500:(NH <sub>3</sub> )-C
20	Biological Oxygen Demand(BOD <sub>30</sub> 27°C)	mg/L	<2.0	--	--	IS: 3025 (Part-44)
21	Chemical Oxygen Demand,(COD)	mg/L	<5.0	--	--	APHA 5220-B
<b>HEAVY METALS;-</b>						
22	Chromium,(Cr)	mg/L	<0.01	Not Specified	Not Specified	APHA-3120B
23	Lead,(Pb)	mg/L	<0.01	0.01	No Relaxation	APHA-3120B
24	Aluminium,(Al)	mg/L	<0.01	0.03	0.2	APHA-3120B
25	Arsenic,(As)	mg/L	<0.01	0.01	0.05	APHA 3120B
26	Cadmium,(Cd)	mg/L	<0.001	0.003	No Relaxation	APHA 3120B
27	Copper,(Cu)	mg/L	<0.01	0.05	1.5	APHA 3120B
28	Mercury,(Hg)	ug/L	<0.001	0.001	No Relaxation	APHA-3114C
29	Selenium,(Se)	mg/L	<0.01	0.01	No Relaxation	APHA-3120B
30	Zinc,(Zn)	mg/L	<0.01	5	15	APHA-3120B
31	Boron,(B)	mg/L	<0.01	0.5	1	APHA 4500:(B)-C
32	Cyanide,(CN)	mg/L	NIL	0.05	No Relaxation	APHA 4500:(CN)-D
<b>Microbiological Parameter;</b>						
33	Total Coliform	Per100mL	Absent	Shall Not Be Detectable		IS 15185
34	Escherichia coli	Per100mL	Absent	Shall Not Be Detectable		IS 15185

\*\*\*\*\*End of Test Report\*\*\*\*\*

  
**CHECKED BY**  
**PURNIMA SINGH**

  
**For ENVIRO-TECH SERVICES**  
**AUTHORIZED SIGNATORY**  
**Quality Manager**

Format No ETS/LAB/TR-09, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

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# 143 ENVIRO-TECH SERVICES

An Analytical Laboratory

(A GOVERNMENT APPROVED LAB)

Plot No. 1/32, S.S. of G.T. Road Industrial Area, Ghaziabad (U.P.) - 201001

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TC-13009

## TEST REPORT

TEST REPORT NO.: ETS/1030-4/04/2024 URLNO.TC130092400010304F DATE OF REPORT: 13.04.2024

### WASTE WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : M/s, SHUBH CHEMICALS & ORGANOSYS PVT. LTD.  
KH.NO-1161, 1162, VILLAGE-DHANSRI, TEHSIL-JANSATH,  
DISTT-MUZAFFARNAGAR, U.P-251314.

Date of Sampling : 09.04.2024  
Analysis Start Date : 10.04.2024  
Analysis End Date : 13.04.2024  
Sample ID No : 1030-4  
Sampling Done By : ETS STAFF  
Sampling Description : AFTER TREATMENT  
Sampling Location : E.T.P-OUTLET  
Sampling Method : ETS/STP/WATER-02  
Sample Quantity : 2.0 Ltr.  
Packing Condition : SEALED  
Packed In : P.V.C. CANE

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)		Test Method
				Inland Surface Water	Public Sewers	
1	pH	...	7.23	5.5 - 9.0	5.5 - 9.0	APHA 4500-H+
2	Total Suspended Solids,(TSS)	mg/L	11.8	100	600	APHA 2540-D
3	Oil & Grease, (O & G )	mg/L	2.6	10	20	APHA 5520-B
4	Biological Oxygen Demand(BOD <sub>5@27°C</sub> )	mg/L	15.0	30	350	IS: 3025 (Part-44)
5	Chemical Oxygen Demand,(COD)	mg/L	90.0	250	Not Specified	APHA 5220-B

\*\*\*\*\*End of Test Report\*\*\*\*\*



CHECKED BY  
PURNIMA SINGH

For ENVIRO-TECH SERVICES

AUTHORIZED SIGNATORY  
M. P. SINGH  
Quality Manager

Format No ETS/LAB/TR-10, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

#### Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.











## SAFETY AUDIT

of

### SHUBH CHEMICAL & ORGANOSYS PVT LTD

Khasra No. 1161/2, Village- Dhansri, Tehsil-Jansath,  
Muzaffarnagar 251314 (U.P)

as per IS-14489:2018



Audit by:

### BHAWANI CONSULTANT

Chamber No. 2 First Floor Lungs Clinic,  
B-6 Kunj Vihar, Opp. LLRM New Emergency,  
Meerut 250004

[consultantbhawani@gmail.com](mailto:consultantbhawani@gmail.com), 9997588876

Month/Year: March 2024

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<b>SAFETY AUDIT (IS-14489:2018)</b> of <b>Shubh Chemical &amp; Organosys Pvt Ltd</b> <b>Village- Dhansri, Tehsil-Jansath, Muzaffarnagar 251314 (U.P)</b>		
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## CHAPTER-1 INRODUCTION

### 1.1 PREAMBLE

Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar is a Sulphuric Acid manufacturing unit with capacity 125 MT/day

It also has a turbine of 1.2 MW. Factory commenced production in year 2022.

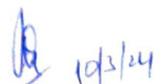
Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar being a prestigious unit, needs a well planned strategy for the smooth functioning of the plant. For the successful Implementation of any plan related to the safety of the plant it is essential that the various departments and every component of the total system should be examined critically, this systematic critical examination with the aim of minimizing loss to organization is termed as "SAFETY AUDIT". In safety audit every component is included e.g. Management policy, attitude to training, features of the process and of design, emergency plans, personal protection, accident records, medical & first aid facilities etc. An Audit (as in the field of accountancy) subjects to discuss the strength and weakness and vulnerability of risk.

The Safety Audit for M/s Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar has been carried out as per the guide notes given in the "Indian Standard code of practice on Occupational Safety & Health Audit (IS -14489, 2018)". The audit research and recommendations are based on the process data, background information and discussion held with plant personnel during audit activities. Besides, the auditors have exercised all reasonable skills and care in carrying out the study.

Bhawani Consultant conducted a safety audit of Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar. The study was conducted as per guidelines formulated in IS 14489-2018.

### 1.2 Site:

The plant site is situated at village Dhansri in Tehsil Jansath, Dist Muzaffarnagar (UP). The site is well connected by road and railway. It is located approx. 23 km from Muzaffarnagar town. Muzaffarnagar- Jansath Road is about 1 km from the factory. Muzaffarnagar railway station is approx. 23 km. The International Airport IGI New Delhi is approx. 143 km.

  
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 Competent Person (PESO)  
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Total factory area is about 0.88 hectare. Out of available land, provision has been made for green belt in accordance to state Pollution Control Board guidelines. The site is fairly flat.

There is no sanctuary, biosphere reserve or national park in the 10-km radius area. The land surrounding the site is used for agricultural purpose. Nearest village is Dhansri at 2 km.

### 1.3 No. of Workers and shift Timings:

The Plant is manned on continuous basis the Plant operates in four shifts namely A, B, C and G Shift. Plant has an approximate strength of 48 employees including officers, workmen, contract labour and security staff. The shift timings are as under:

Gen Shift	-	10:00 AM to 06.00 PM
A Shift	-	06:00 AM to 02.00 PM
B Shift	-	02.00 PM to 10.00 PM
C Shift	-	10.00 PM to 06.00 AM

### 1.4 Scope of Study:

While conducting the Safety Audit, the norms and procedures mentioned in IS – 14489-2018 have been followed. The scope of study is as under.

- Hazard Identification:** Identification of potential hazards which could trigger loss by causing events like fire explosions, fatalities, work injuries, etc. in process, storage and loading/unloading areas.
- Prevention of fire and toxicity hazards:** Critical examination of all areas and activities that involve fire and explosion hazards and submit recommendations wherever required, with object of minimizing losses.
- Fire Detection and Protection Arrangements:** Providing comments on adequacy of existing fire detection and protection arrangements (portable and fixed both) in the plant premises and suggest improvements wherever required.

  
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4. **Emergency Preparedness:** Assessment of the adequacy of available facilities like first aid, security, firefighting, communication etc. in view of effective handling of possible emergencies at the plant.

**1.5 Methodology:** The activities carried out in conducting the Safety Audit and implementing the audit recommendations are given below:

Activities before audit

Audit: on site activities

Activities after audit

**Activities before audit:**

Pre- audit session includes opening meeting with the plant officials wherein methodology of the audit is explained to the management by the audit team leader.

**Audit: on site activities:**

This includes the inspection of areas and activities being carried out in the plant; discussions with the plant engineers and workmen and checking all the necessary records with the object of identifying status and effectiveness of the safety systems, procedures and emergency preparedness at the plant.

**After Audit Activities:**

The post audit session includes the evaluation of the audit research and observation and evidences gathered. Findings are discussed with plant management and then summarized in the form of Audit Report is submitted to the Unit Head.

**1.6 Team Visit:**

External Audit team from Bhawani Consultant visited Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar for conducting the audit on 4.3.2024.

Detail of team members is as below:

  
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S. No.	Name	Qualification	Designation	Experience
1.	Pankaj Goel	B.E. (IIT), MIE	NSC certified Safety Auditor & Audit Team Leader	44 years
2.	Pushpendra Singh	B.Tech. (Elect.)	Safety Auditor	12 years

Mr. Amit Mittal from the factory was associated with the audit.



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## CHAPTER 2

### PLANT AND PROCESS DESCRIPTION & FACILITIES

#### 2.1 Manufacturing facilities:

The factory has facility to manufacture Sulphuric Acid. There is a turbine of 1.2 MW capacity. The plant is divided into various blocks with adequate separation distances. The main office building is of class "A" construction with RCC columns 4 slabs and brick masonry walls.

The plant has following sections viz.

- Sulphur Yard
- Melter Pit Area
- Turbine
- Boiler
- MCC
- DG Room
- Blowers
- DM Plant
- ETP
- Admin. Block
- Lab
- Store

These sections have RCC structure and/or MS columns and ACC sheet roofing. All the manufacturing sections are of non-combustible construction.

M/S Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar have the approved building plan from the Directorate of Factories, U.P. and Certificate of Stability of the entire building from the competent person approved by Directorate of Factories U.P.

Product carrying equipment, pipe-work and valves of the plant are made of standard materials.



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## 2.2 Raw Material, Main Products, Intermediate Products and By-Products:

### Main product:

Sulphuric Acid

Sulphuric Acid is stored in MS above ground tanks –

1x 1000 MT

1x 165 MT

2x 25 MT

### Hazardous consumable items used-

Sulphuric Acid- (Maxm qty stored-1215 MT)

Sulphur - (Maxm qty stored-1200 MT)

## 2.3 Process Description:

### Sulphuric Acid (98%):

The most advanced process, "Double Conversion and Double Absorption Processes" (DCDA), is being adopted for producing Sulphuric Acid.

Steam is used for melting Elemental Sulphur, in Semi Buried Pits & Impurities are Settled & Separated.

Clean Sulphur is finely sprayed in a Furnace, where it is burnt to produce Sulphur Di Oxide in presence of Dry Atmospheric Air.

Temperature of Gaseous mixture goes up to 1000 – 1050 °C & is cooled in a Waste Heat Boiler to produce Steam.

Gaseous mixture is passed through Hot Gas Filter, before going to Converter. In Converter SO<sub>2</sub> is converted into SO<sub>3</sub> in presence of Catalyst in 3-stages. Heat of Reaction is used to heat Boiler Feed Water & Super Heating Steam produced in Boiler. Gaseous mixture containing SO<sub>3</sub> is passed through Inter pass Absorption Tower (IPAT). Here available SO<sub>3</sub> is absorbed in Circulating Acid. Gaseous mixture going out from IPAT, is taken to Last Stage of Conversion, where remaining SO<sub>2</sub> is also converted to SO<sub>3</sub> & gaseous mixture is fed to Final Absorption Tower where Total SO<sub>3</sub> is converted in to Sulphuric Acid.



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Circulating Acid is cooled to required temperature in Acid cooler & Acid produced is peeped out to Storage Tank.

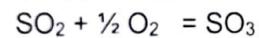
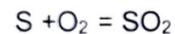
99.9% Conversion & 99.995% Absorption is achieved.

This Plant is Continuous Plant & Stopped once in a Year for maintenance.

Cool Concentrated Sulphuric Acid (98.4%), is stored in Mild Steel Tanks for Dispatch to user point.

The Plant is "ZERO LIQUID DISCHARGE PLANT"

#### Chemical Reactions:



Steam is produced in Sulphuric Acid Plant by using Process heat. Steam so produced is utilised in manufacturing process and to generate Electric Power.

#### Process Flow diagram:

Process flow diagrams are shown in Annexure 1.

  
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**CHAPTER -3****OH & S MANAGEMENT****a) Safety, Environment & Health Policy:**

M/s Shubh Chemical & Organosys Pvt. Ltd., Jansath, Distt. Muzaffarnagar have enunciated an integrated Environment, Occupational Health & Safety Policy which indicates company's total commitment towards preservation of environment and ensuring occupational health and safety of company's employees, plant and who so ever visits the plant.

The policy has been prepared as per guidelines of the UP Factories Rules, 1950.

**b) OH & S organizational set-up**

Directors of the company have overall responsibility for the plant safety. There is no separate safety department; Duties for safety have been assigned to all plant personnel.

**c) Safety Manual:**

Plant has no Safety manual. It is not required considering the small size of the factory.

Copies of various acts like Factories Act 1948, UP Factories Rules 1950, Air & Water (Prevention & Control of Pollution) Act-1981/1974 etc. are available at the factory.

Operations and maintenance manuals of various equipment are also available.

**d) Standard Operating Procedures (SOP):**

The written safe procedures of various equipment installed in plant are available at plant. The safety procedures for plant operation and maintenance highlights need of work permit requirement, training in use of personal, protective equipment, preparation for maintenance work, release of plant and equipment pressure, opening of malfunctioning equipment, entry into equipment. The dos and don'ts are displayed at few vital points.



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**e) Plant modification procedure:**

The modification is defined as change in equipment of process, temporary or permanent, which may affect the safety of the process or integrity of the factory. The need of such change/modifications may come out at various times during the plant life due to a need based change or as a statutory requirement. The factory has a formalized procedure for modification in process as well as in the plant. Any proposal for plant modification is scrutinized by multidisciplinary committee and approved at top management level.

All government approvals are taken as per requirement.

**f) Work permit system:**

Written Work Permit system exists at the factory for hot work, work at height and confined space work.

**g) Contractors' safety system:**

- No Contract workers are involved in plant operations. The contractor workers are hired for other variety of jobs.
- The responsibilities of contract labors, transporters are as follows :
  - All contractors/ sub-contractors labors and transporters engaged in all kinds of jobs are directed to follow safe and healthy work practices as described by the company from time to time.
  - The contractors/subcontractors and transporters are made responsible for the safe working and safety of their employees. They maintain regular liaison with Safety Officer.
  - Training on safety is imparted to the contractor labor by the company.

**h) Plant design and layout:**

Plant has been designed in accordance to best industry practices and following various engineering standards and codes. Facilities comply with requirements of various

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government regulations and acts like Factories Act, 1948, Environment Protection Act and Central Electricity Rules etc. All the facilities at the factory have adequate separation distances.

The layout of the factory is duly approved by the Factories Department.

Building stability certificate for all buildings in the factory is available.

**i) Medical management of accidents:**

All type of first aid at the plant is provided to the affected person. First Aid boxes are provided at the factory.

One vehicle is alsoways available. In case the condition of the affected person goes or seems beyond control the victim is shifted to outside hospital for further necessary medical care.

**j) Management of emergencies (natural / man-made):**

- Factory has a detailed On site Emergency Plan.
- Emergency Control Centre is situated at the administrative building.
- Factory has earmarked 1 no. Assembly Point at the factory and displayed its location.
- The emergency team and key personnel have been identified in the Onsite Emergency Plan.
- Adequate firefighting, protective and rescue equipment are available.
- Emergency communication system has also been defined in On site Emergency Plan.
- Emergency hooters and localized fire alarms are available for sounding emergency.

Following major topics are covered in On site Emergency Plan

- Classification of Emergencies



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- Hazards identification
- Emergency Mitigation Measures
- Emergency Preparedness measures, Mutual Aid and emergency drills
- Emergency response procedures and measures
- Emergency organization and responsibilities
- Resources for controlling emergency
- Medical facilities
- Evacuation
- Information to public
- Reporting of incident
- Emergency recovery procedures

**k) Employee selection and placement:**

Factory has a well-established recruitment, employee selection and placement program. Candidates only with proper qualification and experience are employed and placed at work considering their area of study/expertise.

**l) Safety culture:**

The factory management has involved the participation of employees in Safety management at the factory at all levels for enhancement of safety culture.

A Safety Committee is also functional having 50% members from staff category. Safety Committee meets quarterly.

**m) Statutory licenses, approvals and records:**

A brief assessment report of the same is as under:



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S No.	Statutory license name	Present Status
01	Statutory requirements of U.P. Pollution Control board.	CCA (Consolidated consent to operate & authorization) available and valid up to 31.12.2024  - Annexure 2
02	Statutory requirements of U.P. Factories Rule – 1950	Factory License valid up to 13.5.2024 as Annexure 3.
03	Statutory requirements of U.P. fire Prevention & Fire Safety Act -2005	NOC from Fire Department valid Upto 15.5.2025 Copy is enclosed as Annexure 4.
04	Employees Compensation Insurance	W.C. insurance valid upto 31.10.2024 Annexure 5.
05	Sulphur License	Available and valid upto 31.12.2024  Annexure 6
06	Indian Boiler Regulation, 1950	Boiler/ Economizer permissions valid up to 15.5.2024 and 24.5.2024 – Annexure 7

**n) Motivational and promotional measures for OH &S:**

Plant management encourages safety suggestions from employees and any one can give suggestion in written form to the section in-charge and these are discussed in Safety Committee meetings.

The information regarding safety and health is publicized through notice boards, posters, wall writing etc.

  
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 Valid upto- 28-12-2024

<b>SAFETY AUDIT (IS-14489:2018)</b> of <b>Shubh Chemical &amp; Organosys Pvt Ltd</b> <b>Village- Dhansri, Tehsil-Jansath, Muzaffarnagar 251314 (U.P)</b>		
Ref No. BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 13

**o) Hazard identification and job safety analysis:**

- A hazard is a state or condition having the potential to cause a deviation from uniform or intended behaviour which, in turn, may result in damage to property, people or environment.
- Hazardous Products/ consumables/ process intermediates being handled at factory are Sulphur, Sulphuric Acid and Sulphur Di- oxide.
- The factory management has identified the hazards, which may arise in the factory, on the basis of the hazardous chemical being handled at the factory and any deviation in operational conditions. The list of various hazards and respective preventive measures and emergency combat procedures/techniques have been covered in detail in the On site Emergency Plan of the factory.

**p) Product safety:**

Factory has a well-equipped laboratory which undertakes regular testing of various product samples in process stage, storage, pre-dispatch and post- dispatch stage. It is ensured that products being supplied meets specifications as per relevant standards.

The material data sheets of the hazardous materials are available.

**q) Safety training:**

There is no separate training department but internal training in basic safety is imparted at the plant to employees including new entrants. Faculties are also drawn internally. All the facilities for training are available.

**r) Change management:**

Factory has well established procedures for effecting any change in the existing plant, equipment or process. Safety functional group also plays major role in it. P&I diagrams were found updated for any such change and the changes were documented and information shared through meetings and training programs.

  
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Ref No. BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 14

#### CHAPTER -4

#### PHYSICAL HAZARD

a) **Housekeeping:**

- Plant housekeeping is good.
- The sufficient number of disposable bins are provided. Where required drip trays are provided.
- The walkways are visible and free from obstruction

b) **Machine and general area guarding:**

- All the moving machines are well-guarded/ fenced
- All hazardous processes/ storages are fenced.
- Only authorized persons are allowed to enter these areas.
- Factory is guarded round the clock by security staff.

c) **Material handling:**

**Lifting machines:**

- Lifting machines are marked with their SWL.
- Examination/ certification of the lifting machines is carried out by the Competent Person approved by the Director of Factories, UP.
- Adequate lifting tackles are provided at all places where it is required and are maintained in good conditions.
- Only trained operators are engaged for operating the equipment.

  
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Ref No. BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 15

#### Mobile equipment and vehicular traffic

- Plant has hand trolleys for transportation of materials. All the mobile equipment is in good condition.
- Vehicles at the plant are parked at designated place only.
- Vehicular traffic is controlled by security.

#### d) **Electrical safeguarding:**

- The process and equipment capable of generating and accumulating static charge have been identified. All such equipment are bonded and earthed.
- Metal body of all electric equipment were found earthed.
- Electrical earth resistance measurement and continuity tests are carried out periodically.
- Insulated mats are provided in electrical control rooms/MCC.

#### e) **Safety in storage and warehousing:**

- The management has adequate facilities for storing of raw materials as well as of final product.
- All the tanks are clearly marked by name of the content inside the tank. The storage areas are clearly/ marked / defined.
- The plant has adequate equipment for material handling.
- The workers, handling the material, are acquainted with the hazards associated with the material. Also, they are trained in safe procedure of handling the material.
- All the tanks are provided with Air-vacuum vents.
- Vents are discharged in to ambient air.
- The fire extinguishers are provided in these areas.

  
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f) **Hazard assessment of new equipment:**

Factory has identified various risks at the factory and mitigation measures for all those risks have been enumerated in the On-site Emergency Plan.

g) **Hazards from radiation sources:**

No radiation hazard reported at the factory.

h) **Control measures for specialized industrial hazards like work at height and work in confined space:**

Factory observes special precautions while undertaking such works.

- Such works carried out only after proper authorization and under supervision of qualified person.
- Use of proper PPEs ensured for such works.
- Tanks degassed 100% before entry in an empty storage tank.
- Work Permit system followed.

  
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**CHAPTER -5****CHEMICAL HAZARD****a) Transportation of hazardous substances:**

- Only road transportation is used in the transportation of hazardous materials by the plant. Via rail or pipeline no hazardous materials are transported to or from the plant.
- The pipelines are used for transportation of chemicals with in the plant.
- All pipelines are over ground in the plant & all pipelines are painted periodically to avoid any rusting.
- The loaded tankers are parked in a specific area on site.

**b) Handling of hazardous substances:**

- All hazardous substances are handled by proper qualified persons only and with due care and precautions.
- Safety and firefighting equipment have been provided in all areas where such chemicals are handled.
- Training imparted to people involved in handling of such chemicals.
- SOPs are displayed at few operation points.
- Medical examination of all personnel involved in hazardous operations is carried out every six months.

**c) Storage of hazardous substances:**

- There are no hazardous chemicals stored at the factory as per the classification given in MSIHC Rule, 1989.
- Sulphur and Sulphuric Acid are the chemicals stored at the factory with certain degree of hazards.



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Ref No BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 18

- Hazardous substances are stored with firefighting arrangements around. License from DM available for storing Sulphur.
- Gauges are provided on storage tanks.
- MSDS of hazardous chemicals available.

**d) Spill control measures:**

- Operations carried out under supervision. However spill controls exercised are manual.
- Regular manual cleaning with water carried out in case of minor spills.

**e) Material Safety Data Sheet (MSDS):**

Material Safety Data sheet of Sulphuric Acid/ Sulphur/ Sulphur di oxide are available.

**f) Gas cylinders:**

No gas cylinders used.

**g) Labelling and colour coding:**

- All storage vessels are marked with tank no, product and capacity.
- Various equipment also have suitable identification mark displayed.
- Labels provided on various items stored at stores.

**h) Hazardous waste management:**

- Factory is a zero-discharge factory
- Factory has an ETP with primary/ secondary and tertiary treatment.
- Treated effluent is used in gardening after correcting its pH.
- Stack height for Sulphur Tri Oxide absorption unit is as per Pollution Control Board guidelines.
- Necessary air pollution control equipment is provided to keep emission quality within prescribed limit.
- Ambient air quality is regularly checked and tested through MOEF approved laboratory.

  
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## CHAPTER -6

### FIRE AND EXPLOSION HAZARD

#### **a) Organizational setup for firefighting:**

Organizational set up for fire fighting is defined in On-site Emergency Pla.

#### **b) Built in safety in civil design and construction:**

The factory is divided into various sections with adequate separation distances. The administrative office is of class "A" construction with RCC columns 4 slabs and brick masonry walls.

Some work sheds have MS columns and ACC/GI sheet roofing. All the constructions are of non-combustible type.

Foundations of all storage tanks and equipment etc. are made of standard materials and designed in accordance to various standard engineering codes and standards.

Structural valid stability certificate is available and drawings approved by factories directorate.

#### **c) Built in Safety in Electric Circuits and Equipment:**

- Electric equipment provided are all as per standard engineering codes, standards and of adequate rating.
- All electric circuits are provided with modern protection equipment (switchgear) to cut-off electric circuits in case overload or faults etc.
- Electric equipment are bodily earthed.
- Earth pits have been provided. However the test record was not available.
- Proper ventilation system exists in MCC etc.



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Ref No. BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 20

- Cable route layout and line diagram of electric system is available.

**d) Explosive/ Hazardous substances:**

Following is the complete list of hazardous substance handled at factory with hazard ratings (NFPA):

S.No.	Name of chemical	NFPA Hazard classification		
		Toxicity	Flammability	Reactivity
1	Sulphur	2	1	0
2	Sulphuric Acid	3	0	2

These chemicals are however not classified as "hazardous" under MSIHC Rules, 1989.

High health hazard  $N_h=3$  is reported for Sulphuric Acid and  $N_h=2$  is reported for Sulphur; SOPs are in place for careful handling of these chemicals and operating staff use PPEs while handling these chemicals.

Reactivity hazard  $N_r=2$  is reported for Sulphuric Acid. SOPs are in place for careful storage/ handling of Sulphuric Acid.

**e) Fire safety in handling flammable and explosive materials:**

Fire safety arrangements are provided at the factory in all operational areas including areas where hazardous substances are handled. Details given in items in subsequent paras.

**f) Fire detection and alarm system:**

SO<sub>2</sub> monitoring/ alarm system has been provided

**g) Passive and active fire protection system &**

**h) Fixed fire extinguishing system &**

**i) Portable Fire Extinguishing System &**

**j) Firefighting equipment and facilities:**



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Ref No. BC/SAOPL/SA/24	MONTH / YEAR March/2024	Page 21

The Safety and fire fighting arrangement available within the plant is as under:

S.No.	Item	Qty.
1	Water source	1 no tube well
2	Water storage	225 KL
3	Fire Pump- Electric	2 nos
4	Hose Reel	6
5	Hydrant points	7
6	Fire hoses	7
7	Nozzles	7
8	Fire Extinguisher ABC/CO <sub>2</sub> /Foam	25
9	Localized fire alarm	6
10	Electric Hooter	1

Fire extinguishers/ hydrants etc are regularly checked/ tested.

**k) Fire drill:**

Fire drills are conducted at the factory quarterly:

**l) Fire fighting training:**

Fire fighting training is imparted to fire men, security staff and also to plant operating personnel.

**m) Static electricity:**

- All equipment generating static electricity have been identified and earthed/bonded.
- All pipelines are earthed

  
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- External earthings are also provided at the time of product loading into tank trucks

  
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Valid upto- 28-12-2024



**Uttar Pradesh Boiler Inspection Department**  
**Certificate for Use of Boiler**  
 (Regulation 389)

From  
 Assistant/Deputy/Director of Boilers,  
 U.P. Kanpur

To,  
 The Boiler Owner  
 Registry No. UPE-492 &  
 UPE-650  
 M/s Subh Chemical &  
 Organosys Pvt. Ltd.,  
 Vill-Dharan, Jansath,  
 Muzaffarnagar  
 Date 05.11.2022

You are allowed to work the above noted Boiler under the provisions of section 8 of THE BOILER ACT (V of 1923), at the maximum working pressure of  $52.3^* \text{ Kg/cm}^2$  from 25.05.2022 to 24.05.2024.

\* Fifty Two Point Three.

Remarks/Conditions:

1 Issued on satisfactory Steam Test.

Randhir Kumar Pathrey  
 Asst./Dy/ Director of Boilers, U.P.  
 Kanpur

(See Reverse for Conditions)

Instructions to contain spread of COVID-19

1. Use of mask, gloves, helmet, shoes, goggles etc. is mandatory for boiler operation and maintenance staff.
2. Adequate arrangements shall be provided for temperature screening at Boiler premises.
3. Adequate facility for sanitizers/soap shall be made available at Boiler premises.
4. Social distancing to be ensured at boiler premises.
5. Use of Aarogya Setu App is mandatory for all staff working at Boiler premises.
6. Boiler premises shall be sanitized time to time.
7. There should be strict ban on chewing of gutka, tobacco etc. at Boiler premises, also spitting is strictly prohibited and punishable with fine as per government order.
8. Medical Insurance for all staff working at Boiler premises is mandatory.
9. All other instructions/advisories issued from time to time by Central/State Government to contain spread of COVID-19 shall be strictly followed.



# EKO TESTING LABS

## Eko Pro Engineers Pvt. Ltd.

Annexure 8

For Better Relations

TC-5003

Competence | Quality | Service

### TEST REPORT

#### Ambient Air Quality Monitoring

Test Report No. EKO/E-616/060324

Issue Date : 09/03/2024

Issued To

: SHUBH CHEMICALS & ORGANOSYS PVT LTD.  
 KHASRA NO-1161-1162, VILL-DHANSARI,  
 DISTT -MUZAFFARNAGAR, U P

Sample Description : Ambient Air  
 Sample Drawn on : 04/03/2024 To 05/03/2024  
 Sample Drawn by : EPEPL (Mr Deepak Yadav)  
 Sample Received on : 05/03/2024  
 Sampling Location : 150 Metter (South Side)  
 Sampling Time : 24.0 Hrs  
 Sampling Plan & Procedure : SOP-AAQ/15  
 Analysis Duration : 05/03/2024 To 09/03/2024  
 Ambient Temperature (°C) : 24.0  
 Average Flow Rate of SPM (m<sup>3</sup>/min.) : 1.1  
 Average Flow Rate of Gases (lpm) : 1.0  
 Weather Conditions : Clear  
 Remark (if any) : Lat - 29.350093°, Long - 77.874158°

### RESULTS

S. No.	Parameters	Test Methods	Results	Units	Limits as per CPCB Notification, 13th Nov 2009
1	Particulate Matter (PM10)	IS: 5182 (P-23)	98.5	µg/m <sup>3</sup>	100.0
2	Particulate Matter (PM2.5)	IS: 5182 (P-24)	57.4	µg/m <sup>3</sup>	60.0
3	Sulphur Dioxide (as SO <sub>2</sub> )	IS: 5182 (P-2)	12.5	µg/m <sup>3</sup>	80.0
4	Nitrogen Dioxide (as NO <sub>2</sub> )	IS: 5182 (P-6)	28.6	µg/m <sup>3</sup>	80.0
5	Carbon Monoxide (as CO)	IS: 5182 (P-10)	1.18	mg/m <sup>3</sup>	4.0
6	Lead (as Pb)	IS 5182 (P-22)	<0.1	µg/m <sup>3</sup>	1.0
7	Nickel (as Ni)	IS: 5182 (P-26)	<15.0	ng/m <sup>3</sup>	20.0
8	Arsenic (as As)	EKO/CHEM/SOP/AAQ-02	<5.0	ng/m <sup>3</sup>	6.0
9	Ozone (as O <sub>3</sub> )	IS: 5182 (P-9)	<10.0	µg/m <sup>3</sup>	180.0
10	Ammonia (as NH <sub>3</sub> )	IS: 5182 (P-25)	<20.0	µg/m <sup>3</sup>	400.0
11	Benzene (as C <sub>6</sub> H <sub>6</sub> )	IS: 5182 (P-11)	<1.0	µg/m <sup>3</sup>	5.0
12	Benzo(alpha) Pyrene-Particulate Phase Only	IS 5182 (P-12)	<1.0	ng/m <sup>3</sup>	1.0

#### Notes :

- The results given above are related to the tested sample, for various parameters, as observed at the time of at the time of Sampling. The customer asked for the above tests only
- This test report will not be generated again, either wholly or in part, without prior written permission of the Laboratory.
- The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer  
Sample received for biological tests will be destroyed after 7 days from the date of issue of test report
- Responsibility of the Laboratory is limited to the invoiced amount only

\*\* End of Report \*\*

For EKO PRO ENGINEERS PVT LTD  
 PURNIMA CHAUHAN  
 TECHNICAL MANAGER  
 (Authorised Signatory)



# ITS TESTING LABORATORY PRIVATE LIMITED

Laboratory: A-114, Sector-80, Phase-II Noida, Gautam Budh Nagar - 201305, (U.P.)  
 (An ISO 9001: 2015, ISO 14001: 2015 & ISO 45001: 2018 Certified Laboratory)  
 Website: www.itslab.in, Email: Itlrlab@gmail.com, info@itslab.in, contact@itslab.in  
 +91 9911659800, 9305780312, 09958849764



Report Code: SE-230224-27, Page- 1 of 2

## TEST REPORT

### Stack Emission Report

Report Code: SE-230224-27

Issue Date: 28/02/2024

Issued To: M/S. Subh Chemicals & Organosys Pvt. Ltd.  
 Kh. No.- 1161, 1162, Vill – Dhansri, Tehsil- Jansath, Distt- Muzaffarnagar, U.P.- 251314

#### SAMPLING & ANALYSIS DATA

Sample Drawn on : 22/02/2024  
 Sample Drawn By : ITS Representative  
 Sample Description : Stack Emission  
 Sampling Time : 30 minutes  
 Sampling Plan & Procedure : SOP/SE/09  
 Sample Received Date : 23/02/2024  
 Analysis Duration : 23/02/2024 To 28/02/2024  
 Ambient Temperature (°C) : 25.0  
 Source of Emission : **Stack Attached to SAP**  
 Capacity : **125 TPD\***  
 Type of Fuel used : Sulphur  
 Normal Operation Schedule : 24 Hrs  
 Type of Stack : Metal circular  
 Stack Height (from Ground) : 50 Mtrs  
 Stack Dia (at sampling point) : 800 mm  
 Stack Temperature (°C) : 86  
 Flue Gas velocity (Mtr/Sec) : 7.19  
 Pollution Control Device (If Any) : Alkali Scrubber

#### TEST RESULT

S. No.	Parameter	Test Method	Test Results	Specification	Unit
1.	Sulphur dioxide (as SO <sub>2</sub> )	IS:11255(Part-2)	1290	1370	mg/Nm <sup>3</sup>

CHECKED BY

AUTHORISED SIGNATORY



#### Terms & Conditions :

1. Test reports are valid only for the samples tested in our laboratory. 2. Samples will destroyed as per quality policy.
3. Any complaints about the report should be communicated in writing within 7 days.
4. Total liability of our laboratory is limited to invoiced amount.





## POLICY SCHEDULE FOR PUBLIC LIABILITY (Act Only) INSURANCE

UIN NUMBER - IRDAN190P0076100001

<b>Insured's Name</b>	: SUBH CHEMICALS AND ORGANOSYS PVT. LTD.		
<b>Insured's Details</b>		<b>Issuing Office Details</b>	
<b>Customer ID</b>	: PO94522599	<b>Office Code</b>	: MUZZARFARNAGAR (340700)
<b>Address</b>	: VILL. - DHANSRI, TEHSIL- JANSBAT, MUZAFFARNAGAR  MUZAFFARNAGAR ,UTTAR PRADESH, 251314	<b>Address</b>	: 1ST FLOOR, TOWN HALL ROAD OPPOSITE PEACE LIBRARY MUZAFFARNAGAR,251001
<b>Phone No</b>	: XXXXXX0681	<b>Phone No</b>	: 01312437342 / 01312437320
<b>E-mail/Fax</b>	: jagdeep4@gmail.com, /	<b>E-mail/Fax</b>	: nia.340700@newindia.co.in /
<b>PAN No</b>	:	<b>S.Tax Regn. No</b>	: AAACN4165CST178
<b>GSTIN/UIN</b>	: 09ABECS6849K1ZM / NA	<b>GSTIN</b>	: 09AAACN4165C4ZM
		<b>SAC</b>	: 997139 (Other non-life insurance services excl RI)

<b>Policy Details</b>			
<b>Policy Number</b>	: 34070036243300000001	<b>Business Source Code</b>	
<b>Period of Insurance</b>	: From: 05/04/2024 02:33:42 PM To: 04/04/2025 11:59:59 PM	<b>Dev.Off. level/Broker/Corp. Agent/Web Aggregator/CPSC User</b>	: DIRECT BUSINESS - (1D7842442)
<b>Date of Proposal</b>	: 05-Apr-24	<b>Agent/Bancassurance/S pecified Person</b>	: Mr. JAGDISH CHANDRA MISHRA (NIA1D7840676) AGENT_SITE_92084 (1D7843829)
<b>Prev. Policy no.</b>	:	<b>Phone No</b>	: 01312411894, 9837140212 / NA
<b>Client Type</b>	: Corporate	<b>E-mail/Fax</b>	: mishrajagdish777@gmail.com, / /

Premium(₹)	ERF Premium(₹)	GST(₹)	Total (₹)	Total (₹ in words)	Receipt No. & Date
15160	15160	2,728	33,048	RUPEES THIRTY-THREE THOUSAND FORTY- EIGHT ONLY	3407008124000000013 3 - 05/04/24

## Details of risk covered under current year policy:

Retroactive Date	Paid Up Capital	No Of Locations Involved	AOA	AOA:AOY	AOY	Annual Turnover - Previous Year	Annual Turnover - Proposed Year	Deductibles No of workmen	No of Other Employee
05/04/2024	<= 15 Crore	1	10000000	1:1	10000000	29000000 0	30000000 0	60	0

## Retroactive Dates

Retroactive Date Details	Date	Paid Up Capital	No Of Locations Involved	AOA	AOA:AOY	AOY	Annual Turnover - Previous Year	Annual Turnover - Proposed Year	Deductibles No of workmen	No of Other Employee
RETROACTIVE DATE 1	05/04/2024	<=15Crore	1	10000000	1.1	10000000	29000000 00	30000000 00	60	0

RETRO-DATE IS SUBJECT TO LESSER OF LIMITS - NARROWER OF COVER.

## Extensions under the Policy

Name of the Extension	Sub Limit of the Extension	Deductibles of the Extension
-----------------------	----------------------------	------------------------------

THE NEW INDIA ASSURANCE CO. LTD.  
(Government of India Undertaking)



Special Conditions	NA	
	NA	
Special Exclusions	NA	
Special Excess/Deductible	0	
Retroactive Dates	Date	
Retroactive date	05/04/2024	

The Policy shall be subject to PUBLIC LIABILITY (Act Only) INSURANCE Policy clauses attached herewith.

Clauses	Description	
<b>Premium and GST Details</b>		
	Rate of Tax	Amount in INR
Premium		₹ 30,320
SGST	9	1364
CGST	9	1364
IGST	0	0

In witness whereof the undersigned being duly authorised by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 05th day of April, 2024.

For and on behalf of  
The New India Assurance Company Limited

Date of Issue: 05/04/2024

Duly Constituted Attorney(s)

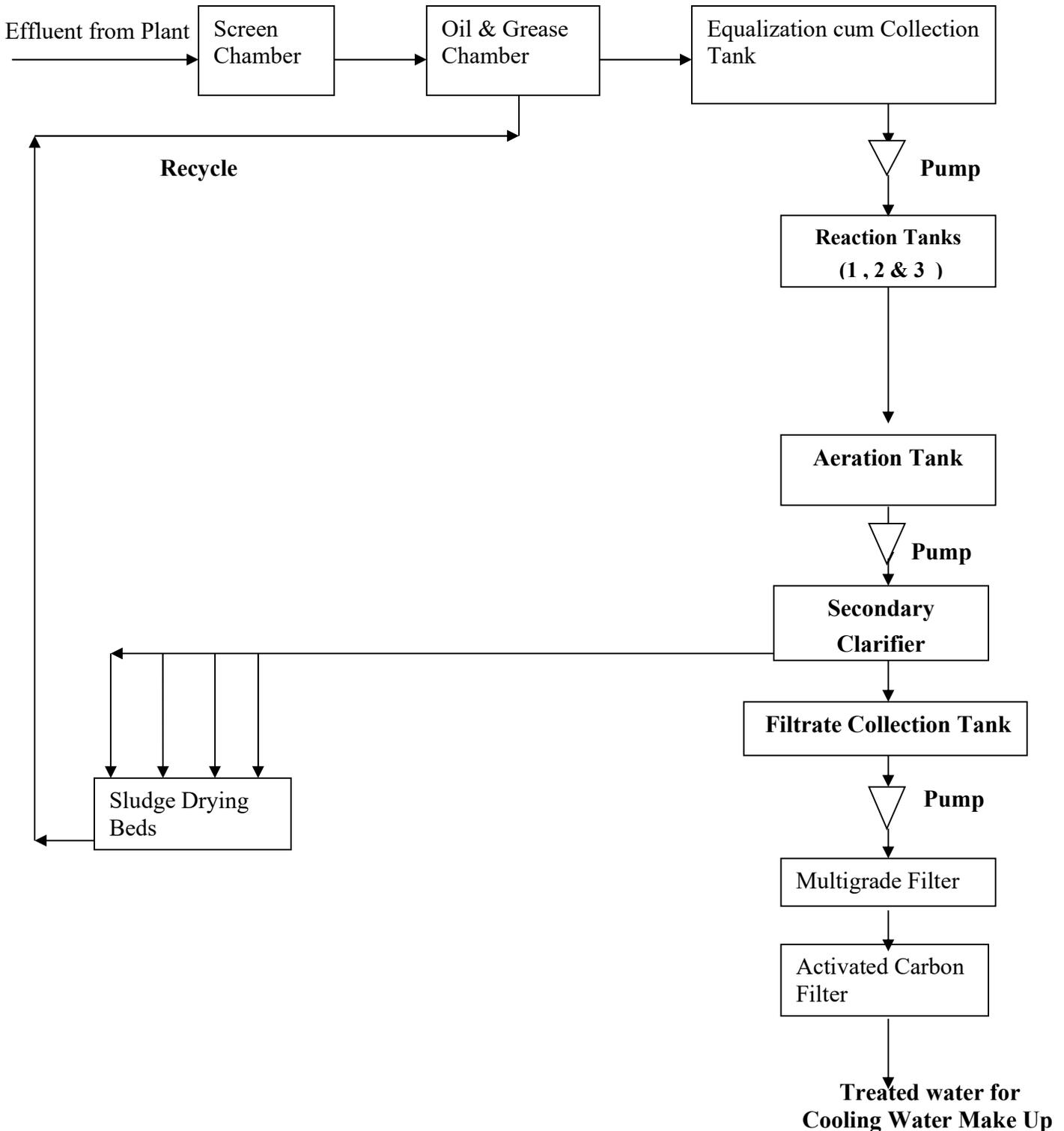
Stamp Duty under the Policy is ₹1

Mudrank \_\_\_\_\_ Dt. \_\_\_\_\_ consolidated Stamp Fees Paid by Pay Order Number \_\_\_\_\_ vide receipt number \_\_\_\_\_ dt. \_\_\_\_\_.

We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.

Tax Invoice No : 34070024P0000172

IRDA Registration Number: 190  
NIA PAN NUMBER: AAACN4165C

**BLOCK/FLOW DIAGRAM OF 5 KLD E.T.P SHUBH CHEMICAL****IONEX CHEMICAL & ENGINEERS**

Office: Ionex Villa, Gangapur Gosai, Kundeshwari Road, Kashipur (U.S.Nagar),  
Uttarakhand-244713

E-mail: [info@ionexchemical.com](mailto:info@ionexchemical.com)



ISO 9001:2008 &amp; 14001:

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# ADEQUACY REPORT

OF

## 5 KLD EFFLUENT TREATMENT PLANT

Submitted to -

**SHUBH CHEMICALS & ORGANOSYS PVT LTD**  
**MUZAFFARNAGAR**

Submitted by -

**Ionex Chemical & Engineers**

Ionex Villa Kundeshwari Road, Kashipur – 244713 U.S. Nagar (Uttarakhand)

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15th April – 2024



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**IONEX CHEMICAL & ENGINEERS**

Office: Ionex Villa, Gandapur Gosai, Kundeshwari Road, Kashipur (U.S.Nagar).



ISO 9001:2008 &amp; 14001:

## **1.0 INTRODUCTION OF THE MILL**

M/s SHUBH CHEMICALS & ORGANOSYS PVT LTD MUZAFFARNAGAR

The assessed total generation of wastewater from the production activities will be approx. 5 KLD. M/s Ionex Chemical & Engineers been assigned to design & develop the ETP required for treatment of the effluent.



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### **3.0 ASSESSMENT OF WASTEWATER GENERATION:**

The total assessed wastewater generation from all production activities is 5 KL/day. The parameters of the wastewater will be –

S. No.	Parameter	UOM	Values
1.	Flow	m <sup>3</sup> /day	5
2.	Chemical Oxygen Demand	mg/l	1000
3.	Bio-Chemical Oxygen Demand	mg/l	300
4.	Total Suspended Solids	mg/l	3000
5.	Total Dissolved Solids	mg/l	10
6.	Oil & Grease	mg/l	10

The standards specified by the CPCB for discharge of treated effluents are as below –

S. No.	Parameter	UOM	Values
1.	Chemical Oxygen Demand	mg/l	<250
2.	Bio-Chemical Oxygen Demand	mg/l	<30
3.	Total Suspended Solids	mg/l	<50
4.	Total Dissolved Solids	mg/l	<2100
5.	Oil & Grease	mg/l	<10

Based on the above information, a treatment scheme is designed to treat the effluent. Adequacy assessment of the same is given below –



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#### 4.0 ADEQUACY ASSESSMENT OF EFFLUENT TREATMENT PLANT

The adequacy of the treatment plant is assessed by taking 3-5% increase parameters & 40% high in influent load. Based on different physico-chemical & biological combinations, a set of treatment equipment are proposed which will treat the effluent to its desired level. Detailed calculations are given as below-

	Effluent Generation	=	5	m <sup>3</sup> /day
	Additional Capacity for future expansion	=	2	m <sup>3</sup> /day
	Plant Design Capacity	=	10	m <sup>3</sup> /day
	Parameters considered for design-			
	pH	=	14	
	COD	=	1000	g/m <sup>3</sup>
	BOD	=	40	g/m <sup>3</sup>
	TSS	=	1500	g/m <sup>3</sup>
	TDS	=	3000	g/ppm
<b>A)</b>	<b>Collection Pit</b>			
	Total Volume Required	=	5	m <sup>3</sup>
	Total HRT	=	2	hrs.
	Remarks - New Equalization tank of 5 m <sup>3</sup> capacity (except free board) is sufficient to retain the effluent 2 hours. A feed pump of 2 m <sup>3</sup> /hr capacity will be installed on the collection pit. Chemical dosing of lime & alum will be done in tank & polymer will be dosed in flash mixing tank.			
<b>B)</b>	<b>Flash Mixing Tank</b>			
	Volume	=	.7	m <sup>3</sup>
	Reaction Time Available	=	13.824	Min.
	Remarks - The FMT reaction time is sufficient for flocculation of all settleable solids present in the effluent.			
<b>C)</b>	<b>Primary Settler</b>	-		
	Length	=	2	m
	Width	=	2	m
	SWD	=	1.4	m
	Surface Area	=	4.0	m <sup>2</sup>
	Surface Loading Rate		5.8	m <sup>3</sup> /m <sup>2</sup> /day
	Volume		2.3	m <sup>3</sup>
	Hyd. Ret. Time		7.5	Min

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Remarks - The SLR is sufficient to handle this effluent and settling will be higher considering settling rate of 1 m/hr.				
<b>D)</b>	<b>A/T Calculations -</b>			
	Parameters		Value	UOM
	Flow	=	5	m <sup>3</sup> /day
	BOD	=	40	g/m <sup>3</sup>
	Soluble BOD	=	20	g/m <sup>3</sup>
	BOD at outlet	=	5	g/m <sup>3</sup>
	COD	=	50	g/m <sup>3</sup>
	Soluble COD	=	20	g/m <sup>3</sup>
	Readily biodeg. COD	=	15	g/m <sup>3</sup>
	bCOD/ BOD ratio	=	1.65	
	bCOD	=	25	g/m <sup>3</sup>
	nonbiodeg COD	=	10	g/m <sup>3</sup>
	Sol. COD at end	=	5	g/m <sup>3</sup>
	Particulate COD	=	35	g/m <sup>3</sup>
	Biodeg. Part. COD	=	15	
	TSS	=	40	g/m <sup>3</sup>
	VSS	=	15	g/m <sup>3</sup>
	nbVSS	=	10	g/m <sup>3</sup>
	iTSS	=	12	g/m <sup>3</sup>
	SRT	=	4	Days
	Temperature	=	28	Deg. C
Factors (Constants - to be changed as per the calculations for a specific plant)				
	Constants	$u_m$	3.0-13.2	6
		$K_s$	5-40	20
		$Y$	0.30-0.50	0.4
		$k_d$	0.06-0.20	0.2
		$f_d$	0.08-0.2	0.15
	$\Theta$ Values	$u_m$	1.03-1.08	1.07
		$k_d$	1.03-1.08	1.04
		$k_s$	1	1
	Biomass Production	$P_{x,VSS}$	15.5	g/g/day
		$k_d$	0.208	g/g/day

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<b>E)</b>	<b>Tertiary Clarification</b>	-		
	1. MGF	=	1	m3/hr capac
	2. ACF	=	1	m3/hr capaci
Final treated effluent will be having following parameters -				
	Parameter		Expected output	Standard of CF
	pH	=	6.8 - 7.4	6.5 - 8.5
	COD, mg/l	=	< 150	<250
	BOD, mg/l	=	< 20	<30
	TDS, mg/l	=	1200-1400	<2100
	TSS, mg/l	=	< 20	< 50
<b>F)</b>	<b>Sludge Handling System</b>			
	Total Solids Generation (on OD Basis)			
	1. Primary Settler -	=	300	kg/day
	2. Secondary (Biological System)	=	142	kg/day
	Total Solids Generation (on OD Basis)	=	442	Kg/day
	Capacity of Plate Filter Press	=	600	Kg/day
	Inlet consistency of Sludge	=	0.8	%
	Total Slurry handling capacity (20 hrs)	=	3.7	m3/hr



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Therefore,	S	0.44	
And hence,	$P_{x,vss}$	15	kg VSS/day
Mass of VSS & TSS in Aeration Basin	Mass (Px)		
	$P_{x,vss}$	15	kg/day
	$P_{x,tss}$	95	kg/day
Mass of MLVSS	$(X_{vss})(V)$	140	kg
Mass of MLSS	$(X_{tss})(V)$	25	Kg
<b>Aeration Tank Volume</b>	=	<b>4.5</b>	<b>m<sup>3</sup></b>
<b>A/t Detention Time</b>	=	<b>1.5</b>	<b>Hrs</b>
MLVSS Determination	=	0.76	
	OR	2591	g/m <sup>3</sup>
F/M & BOD Vol. Loading	=	0.50	kg/kg/day
<b>Vol. BOD Loading</b>	=	<b>1.30</b>	<b>kg/m<sup>3</sup>/day</b>
Obs. Yield based on TSS & VSS	=	2	kg/day
	$Y_{obs,tss} =$	0.30	gTSS/g bCO
	OR	0.49	gTSS/g BOI
	$Y_{obs,vss} =$	0.23	g VSS/ g bCC
	OR	0.38	g VSS/ g BO
Standard Oxygen Demand		35	Kg/day
Actual Oxygen Requirement		15	Kg/day
Actual Air Requirement		15	kg/day
Density of air @ 1.206 kg/m <sup>3</sup>		155	kg/day
Submergence Factor (@7%/m)		530	m <sup>3</sup> /day
	OR	55	m <sup>3</sup> /hr
Diffuser dimensions (1m, 64 mm OD)	=	0.20114	m <sup>2</sup> /diffuser
Efficient Air Output/diffuser	=	7	m <sup>3</sup> /m <sup>2</sup> /hr/diffi
Total Diffusers Area Required	=	5	m <sup>2</sup>
Capacity of Blower (@ 80% Eff)	=	120	m <sup>3</sup> /hr
Pressure (Water Column)		120	mmWC
<b>Remarks -</b>			
<b>The aeraion tank will be equipped with diffused aeration system with 42 nos. of diffuser and blower of 400 m<sup>3</sup>/hr capacity.</b>			

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Based on the above calculations, we can summaries the same as below –

S. No.	Equipment	UOM	Capacity	MOC
1.	Equalization Tank	M3	3	RCC
2.	FMT & PST	M3	7.6	MSEP
3.	Aeration Tank	M3	4	RCC
4.	Blower	M3/hr	50	CI
5.	Fine Bubble Tubular Diffusers	Nos.	5	Silicon
6.	Sludge Drawing bed	No.	1	RCC
8.	MGF	M3/hr	2	FRP
9.	ACF	M3/hr	2	FRP

## 5.0 CONCLUSION

With the installation of above rated equipment in ETP, the effluent will be treated to achieve desired results as prescribed by CPCB. Care must be taken for proper chemical mixing, proper sludge removal, continuous operation of blower & recirculation pump and daily analysis of inlet COD, BOD, pH, & TSS and MLSS & DO in aeration tank.

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## Essential Factors to consider while setting up a sulphuric Acid Plant

CPCB provides the emission levels and the standard operating procedures to be followed by a sulphuric acid plant. The concerned Pollution Control Board (i.e. SPCB/ PCC) can prescribe more stringent standards if conditions demand.

- ✔ Acid plants must be constructed and operated in such a way that liquid  $H_2SO_4$  is not produced in unexpected locations/ equipment etc.
- ✔ Appropriate scrubbing technology must be implemented, and scrubbers must be replaced periodically. Also, Scrubbers must have online pH meters with a recording facility.
- ✔ For plants having more than one stream or unit at the same location, the combined capacity from all streams/units will apply to all the streams or units for compliance with the norms specified by CPCB.
- ✔ The Stack Height of the Sulphuric Acid Plant must be 30 meters or as per the formula:
- ✔  $H = 14 (Q)^{0.3}$  (here H is the height of the stack, and Q is the quantity of  $SO_2$  expected to be released through the stack at 110% of the capacity as per the norms of gaseous emission)
- ✔ For  $H_2SO_4$  Plants having more than one stream or unit at a particular location, the combined capacity of all streams/units must be  $\geq 100$  m of the stack.

Hey there! I am  
Abhishek 🙌, let's talk.



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# SHUBH CHEMICALS AND ORGANOSYS PRIVATE LIMITED

Dated: 16-04-2024

To  
The Chief Environment officer  
Uttar Pradesh Pollution Control Board  
Circle – 3, T.C.-12 V, Vibhuti Khand,  
Gomti Nagar, Lucknow (UP) - 226010

Sub: N.G.T. Case O.A. 122/2024 Manoj Kumar v/s Shubh Chemicals & Organosys Pvt Ltd and Joint Committee Inspection on 29-02-2024  
Ref: Your Letter No. HO8867/C-3/Water/967/Muzaffarnagar/2024 dated 02-04-2024

Dear Sir

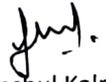
With reference of the observation during joint committee inspection on 29-02-2024, we have improved all concern given by UPPCB to improve & take necessary action. We are submitting our point-wise reply as under:

- Water Sample Parameters: Water Sample Parameters is been submitted and found satisfactory by UPPCB, copy of report is attached.
- Safety Audit Report: Safety Audit is completed independently and report is been attached.
- Public Liability Insurance Policy – Public Liability Insurance is taken, Policy Number 34070036243300000001 with attached proof is been submitted.
- Effluent Treatment – ETP with PH meter is been installed & proof is attached.
- Alarming System –Sulphur oxide Meter with alarm system, pH meter for Sulphuric Acid with alarm system, etc is been installed, photo-graphs is attached.
- Process Pipelines without corrosion preventing coating – We have done color coating & insulation on all process and other pipelines, photo-graphs is attached.
- Color Coding / labeling to the process pipeline – color coding with labeling is done on all line, photo-graphs is attached.

We, therefore, request you very kindly to consider and accept our submission.

Thanking You

Yours faithfully  
For Shubh Chemicals & Organosys Pvt Ltd

  
Anshul Kalra (Director)



  
16/4/24  
U.P. Pollution Control Board  
Muzaffarnagar

- Copy to
1. District Magistrate Muzaffarnagar
  2. SSP – Muzaffarnagar
  3. Executive Engineer Vidut Vitran Khand Uttar Pradesh Power Corporation Muzaffarnagar
  4. Executive Engineer Jal Sansthan Muzaffarnagar
  5. Chief Environment Officer Waste Management Division Uttar Pradesh Pollution Control Board Lucknow
  6. Regional Office, Uttar Pradesh Pollution Control Board – Muzaffarnagar

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