

**Central Pollution Control Board**  
**Waste Management - II Division, Delhi**

**Sub: Minutes of the Eighteenth Meeting of Technical Expert Committee (TEC) for “Evaluation of proposal for utilization of the hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016”.**

1. Eighteenth meeting of Technical Expert Committee (TEC) for “Evaluation of proposals received from various industries for utilization of the hazardous and other wastes under Rule 9 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016” was held at CPCB, Delhi on 21.11.2019. List of the participants is enclosed at Annexure A.
2. Sh Abhey Singh Soni, Member Convener of the Committee & Head, Waste Management-II Division, CPCB, Delhi, welcomed the Chairman and members of the committee.
3. The WM-II Division, CPCB placed following two draft Standard Operating Procedures (SoPs) & Checklist of Minimal Requisite facilities for utilization of hazardous waste prepared on the basis of trial study reports and one conditional SoP before the committee for finalization:
  - i. Utilization of Coal Tar Sludge for production of naphthalene oil, creosote oil, heavy creosote oil and coal tar pitch
  - ii. Utilization of Spent Sodium Hypo Chlorite & Spent Caustic Solution in the manufacturing of Sodium Hypo Chlorite
  - iii. Conditional SoP for utilization of spent sulphuric acid generated from acid activation of bentonite clay for manufacturing of DAP/NPK Fertilizers.

Details and recommendations of the committee are as below:

Sl. No.	Details of the SoP	TEC Recommendation
A.	Standard Operating Procedures for Utilization of Coal Tar Sludge for production of naphthalene oil, creosote oil, heavy creosote oil and coal tar pitch	<p>After detailed deliberation, the committee observed that a SoP titled “Utilization of Tarry residue generated from coal gasifier units for production of Creosote oils and coal tar pitch (excluding operating in Morbi-Wankaner area in Gujarat) has already been developed by CPCB which is similar to the proposed utilization process. Therefore, the same may be amended incorporating details w.r.t. characteristics of HW, sources of generation of HW and related parameters.</p> <p>Further, the committee recommended that the following information may be obtained from the unit</p> <ol style="list-style-type: none"><li>(i) Characteristics of crude coal tar (raw material) and coal tar sludge (hazardous waste) w.r.t. parameters of HW specified in aforesaid SoP (Tarry residue)</li><li>(ii) Complete sources of generation of such HW (tarry residue/coal tar sludge) with its composition similar to the earlier SoP for preparing a generic SoP.</li><li>(iii) Applicant proposed 5% of hazardous waste utilization with 95% of raw material. Variable</li></ol>



R. K. Singh<sup>1</sup>

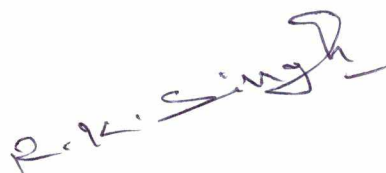
		<p>quantity of hazardous waste and raw material proposed to be utilized, if any and reason thereof.</p> <p>(iv) Possible generation of residue (hazardous) during the said utilization of hazardous waste (coal tar sludge).</p> <p>In view of above, the committee recommended that, upon receipt of complete information from the unit, generic SoP for utilization of Tarry residue/coal tar sludge generated from coal gasifier units/baking process of carbon blocks for production of Creosote oils, Anthracene Oil, Naphthalene Oil and coal tar pitch may be revised and shall be discussed in subsequent TEC.</p>
B.	Standard Operating Procedures for utilization of Spent Sodium Hypo Chlorite & Spent Caustic Solution in the manufacturing of Sodium Hypo Chlorite	<p>After detail deliberation, the committee observed that the following information shall be obtained from the unit:</p> <ul style="list-style-type: none"> <li>(i) Optimum process condition/parameters maintained in the reaction vessel containing <math>\text{Cl}_2</math>, spent caustic solution and spent sodium hypochlorite may be provided with details of requirement of ice in the reaction vessel.</li> <li>(ii) Complete material and mass balance for the utilization process may be clarified.</li> <li>(iii) Upon receipt of above clarification, the same may be incorporated in the SoP;</li> </ul> <p>The committee recommended that;</p> <ul style="list-style-type: none"> <li>1) Generic SoP may be prepared for utilization of               <ul style="list-style-type: none"> <li>(a) Spent sodium hypo chlorite generated from alkaline scrubbing of HCl &amp; Chlorine and fresh caustic solution &amp; (b) Spent sodium hypo chlorite &amp; Spent caustic solution generated during manufacturing of Chloro Benzene, 1,4 Dioxane &amp; 2-Methyl-1,3- Dioxane respectively.</li> </ul> </li> <li>2) The reaction vessel for the said utilization shall be equipped with temperature sensor, synchronized with cooling system.</li> <li>3) Water cooling or limpet oil jacket shall be provided with automated temperature control system for the reaction vessel.</li> <li>4) Rotameter for chlorine charging.</li> </ul> <p>Thereafter, the committee recommended that upon receipt of aforesaid clarification from the unit and incorporation of the above recommendation in the draft SoP, the same may be discussed in subsequent TEC.</p>
C.	Standard Operating Procedures for utilization of spent sulphuric acid generated from acid	<p>Draft SoP for utilization of spent sulphuric acid generated from acid activation of bentonite clay for manufacturing of DAP/NPK Fertilizers based on trial study conducted at M/s IFFCO Ltd., Kandla, Gujarat during 15-16 February, 2018 was discussed in the 13<sup>th</sup></p>



	activation of bentonite clay for manufacturing of DAP/NPK Fertilizers	<p>TEC meeting held on 10.08.2018.</p> <p>In the said meeting the committee observed that the analysis results of the product (DAP) do not show any significant trend in quality of DAP obtained with and without utilization of the hazardous waste (spent acid). After discussion a conditional SoP was issued and committee recommended in the aforesaid meeting that, analysis of spent acid and products w.r.t. metals and other parameters, as prescribed for compost under the Municipal Solid Waste Management Rules, 2016 shall be carried out in every two months and be submitted to CPCB and the said results shall be placed in the subsequent TEC meeting for finalization of SoP.</p> <p>As per the recommendation of 13<sup>th</sup> TEC meeting, M/s IFFCO Ltd., Kandla, Gujarat submitted bimonthly analysis report to CPCB vide letters dated 18.06.2019, 09.09.2019 &amp; 21.10.2019. The results analysis was presented before the committee. The committee observed that the analysis report of product (Di-Ammonium Phosphate) infers that the parameters were complying with standards prescribed for compost under Municipal Solid Waste Management Rules, 2016.</p> <p>After detailed discussions the committee observed that there is also need for long term study to prevent any adverse implications of DAP on the soil. The unit need to conduct study any adverse implications of DAP on the soil and submit study proposal in consultation with reputed National Agricultural University/Institutes within three months. Upon receipt of the proposal from the unit the same may be placed before subsequent TEC.</p> <p>Upon receipt, the study report of implications of DAP on the soil shall be discussed in subsequent TEC and SoP for utilization of spent sulphuric acid generated from acid activation of bentonite clay for manufacturing of DAP/NPK Fertilizers may be finalized.</p> <p>Meanwhile, the conditional SoP will be permitted with same TOR issued vide letter dated 29.11.2018.</p>
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4. The following applicants were requested to make technical presentation on their proposed utilization of hazardous waste before the committee:
- (i) M/s Jindal Steel and Power Ltd., Angul, Odisha.
  - (ii) M/s Bhiwadi Jal Pradushan Nivaran Association, Bhiwadi, Rajasthan.
  - (iii) M/s M. S. Drums, Kolkata, West Bengal.
  - (iv) M/s SI Group, Mumbai, Maharashtra.

The representatives of above mentioned applicants presented their technical presentations before the committee. The details of the proposals along with the recommendations are given in **Annexure-B**.

5. The following representations were also discussed for revision of existing SoPs:

**a) SoP for utilization of Spent Pot Lining (SPL) generated from Primary Aluminum Smelting Industries, for incorporation of utilization of SPL in the Iron & Steel Industry as proposed by M/s Green Energy Resources.**

M/s Green Energy Resources has proposed revision of SoP titled "Utilization of Spent Pot Lining (SPL) generated from Primary Aluminium Smelting Industries, for incorporating utilization of SPL in high temperature applications like Iron, Steel & Ferrous alloy Industries, was placed before the committee.

After detailed discussions, the following recommendations were made for revision of existing SoP:

Section in Existing SoP	TEC Recommended revision of existing SoP
In the recovery/product column of section 32.0 of the SoP	For manufacturing of carbon mineral fuel to be used as resource/energy recovery in high temperature (more than 1000°C) applications such as cement kiln, iron, steel and ferrous alloy industries.
In section 32.3 of the SoP	De-toxified SPL (Carbon) named as carbon mineral fuel shall be used as resource/energy recovery in high temperature (more than 1000 °C) applications such as cement kiln, iron, steel and ferrous alloy industries but not for use in boilers. Such cement kiln, iron, steel & ferrous alloy industries shall comply with the emission standards notified vide notification G.S.R. 497 (E) dated 10/05/2016 under Environment Protection Act, 1986.

**b) SoP for utilization of Spent Catalyst & Chemical Sludge containing precious metals, for incorporation of utilization of  $Al_2(SO_4)$ /Alum, Aluminate/Silicate & Nitrate solution as proposed by M/s Hindustan Platinum Ltd.**

The proposal of M/s Hindustan Platinum Ltd., Mumbai, Maharashtra for incorporation of utilization of  $Al_2(SO_4)$ /Alum, Aluminate/Silicate & Nitrate solution in SoP for "Utilization of Spent Catalyst & Chemical Sludge containing precious metals" received vide letter dated 29.01.2019. The proposal was discussed in 17<sup>th</sup> meeting of TEC held on 11.06.2019. The unit representative was absent in the said meeting. However, the committee examined the proposal for amendment in SoP for utilization of Spent Catalyst & Chemical Sludge containing precious metals, for incorporation of utilization of  $Al_2(SO_4)$ /Alum, Aluminate/Silicate & Nitrate solution and recommended that the applicant may be asked to make fresh application and be processed as per procedure laid down at general SoP for application processing available at [https://cpcb.nic.in /uploads/hwmd/ SOP\\_Rule\\_9\\_July\\_2017.pdf](https://cpcb.nic.in/uploads/hwmd/SOP_Rule_9_July_2017.pdf)." However, the same has not been received by CPCB.

Upon repeated request from the unit, the applicant made a presentation before the committee. However, the committee observed that neither the application was forwarded as per SoP procedures through concerned SPCB nor the complete details w.r.t. utilization



process is provided viz. details of spent acids, flue gases, source categorization of spent catalyst, chemical mass balance, etc.

Therefore, the committee recommended that unit shall apply as per section 1 of Standard Operating Procedure for Processing the Proposals for Utilization of Hazardous Waste under Rule 9 of HOWM Rules, 2016 (available at [http://cpcb.nic.in/uploads/hwmd/SOP\\_Rule\\_9\\_July\\_2019.pdf](http://cpcb.nic.in/uploads/hwmd/SOP_Rule_9_July_2019.pdf)) for further consideration by CPCB.

- c) **SoP for utilization of Aluminium Hydroxide Chloride (AHC) in ETP and Pulp and Paper Industry, for incorporation of utilization of AHC in STP water treatment as proposed by M/s Arun Industrial Products.**

The representative of M/s Arun Industrial Products was absent for the meeting.

6. The following proposals for utilization of various hazardous wastes discussed in detail for grant of trial run as per detail given in **Annexure B** and trial run granted:

- i. Utilization of used/ waste tyres /tyre crumbs along with pet coke and coal in coal gasification unit of steel industry for producing syn gas as proposed by M/s Jindal Steel and Power Ltd., Angul, Odisha
- ii. Utilization of cetp sludge for manufacturing of bricks by M/s Bhiwadi Jal Pradushan Nivaran Association, Bhiwadi, Rajasthan.

7. The TEC has revised the existing SoP of Utilization of contaminated barrels /containers drums containing hazardous wastes/chemicals to incorporate drums contaminated with oil and lubricants in source of generation as details given in **Annexure B**.

8. The committee recommended that M/s SI Group, Mumbai, Maharashtra should approach to MoEF&CC for final decision related to exemption from Rule 9 as details given in **Annexure B**.

9. In addition to above the following table agenda were also discussed:

- a) **Amendment in SoP for Utilization of Spent Alkali Bromide and Spent Acidic Bromide generated during manufacture of various pesticides, pharmaceuticals and organic chemicals for recovery of liquid Bromine (M/s Nandesari Industries Association).**

In 17<sup>th</sup> TEC meeting the committee recommended that the SoP "Utilization of spent alkali bromine and spent acidic bromide generated during manufacturing of various pesticides, pharmaceuticals and organic chemicals for recovery of liquid bromine" may be amended with technologies like Advance Oxidation Process (AOP) or Reverse Osmosis (RO) for treatment of waste water generated during the said utilization process.

In view of observations made by Competent Authority, CPCB, the said SoP was placed again in the TEC meeting. In this regard, the committee recommended the following w.r.t. amendment in SoP as below:

"Wastewater generated from stripping column, floor washing, spillages, reactor washing, scrubber bleed, boiler blow down, etc. shall be treated physio-chemically in ETP followed by suitable treatment so as to meet inlet norms of CETP, through technologies like Advance Oxidation Process (AOP) or Reverse Osmosis (RO) or Multi Effect Evaporator (MEE). In case, CETP is not available, condition of Zero Liquid Discharge (ZLD) be enforced by SPCB/PCC."



P. K. Singh



**b) Request of Core Group of LABSA and SSP manufacturer in Gujarat State for trial run permission for utilization of Spent Sulphuric Acid generated from LABSA manufacturing for making Single Super Phosphate.**

In 17<sup>th</sup> meeting of TEC held on 11.06.2019, the committee after discussions observed that there is also need for study for decomposition rate of TOC and accumulation of SSP in soil and made following recommendations:

- (i) The spent acid generated during manufacturing from LABSA be analysed for moisture, acid content, pH, Total Organic Contamination (TOC) including concentration of various important VOCs, SVOCs and heavy metals. The SSP derived by utilizing the said spent acid be also analysed for Total Organic Contamination (TOC) including concentration of various important VOCs, SVOCs and heavy metals. These tests for Total Organic Contamination (TOC) including conc. of various important VOCs, SVOCs in fresh acid used for manufacturing of SSP be carried out by Division of Agricultural Chemicals, IARI, Pusa, New Delhi.
- (ii) Seed germination test using various concentration of aforesaid SSP sample derived by using the aforesaid spent acid as well as SSP produced from fresh acid in similar concentrations of SSP be carried out from Seed Division, IARI, Pusa, New Delhi.
- (iii) Toxicity studies of the aforesaid SSP sample in various concentration (minimum 5 concentrations) ranges, derived by using the aforesaid spent acid be carried out by CSIR- IITR, Lucknow. Toxicity test should be carried out as per worldwide accepted standard method of acute toxicity test of fish (viz; OECD Guideline For Testing Of Chemicals, Test Guideline No. 203 Adopted: 18 June 2019).
- (iv) The representative of the core group will inform CPCB about name and address of the (i) plant from where spent acid would be used for production of SSP and (ii) plant where such spent acid would be used for production of SSP for the purpose of the above study as at (i), (ii) and (iii) above.
- (v) Sampling of spent acid, fresh acid and spent acid-SSP would be undertaken in presence of the concerned SPCB, CPCB and respective organization where test would be carried out. Anand Agricultural University as presented will carry out the detailed study of the impact of SSP made with spent acid of LABSA for the terms of reference submitted. The study by the expert agency should focus on accumulation and negative impact of the specific organic chemical (in this case LABSA) due to use of spent sulphuric acid on soil & plant.

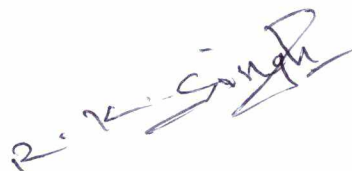
As per the recommendation of 17<sup>th</sup> TEC, the representatives of the core group of LABSA and SSP manufacturer of Gujarat State has informed that, M/s Nirma Limited, plot no: 415/p, Chacharwadi, Moraiya, Taluka – Sananad, Dist: Ahmedabad is the generator of hazardous waste (Spent Sulphuric Acid) from LABSA as well as manufacturer of Single Super Phosphate (Product) for trial run vide letter dated 15.11.2019.

After deliberated discussion, the committee recommended that trail run permission may be issued to aforesaid unit for utilization of Spent Sulphuric Acid from LABSA for manufacturing of Single Super Phosphate, for the purpose of study with above recommendation.

The meeting ended with vote of thanks to chair.



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**CENTRAL POLLUTION CONTROL BOARD  
DELHI- 110 032**

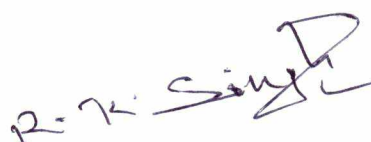
**Date: November 21, 2019**

**Venue: Committee Room, Fifth Floor,  
Parivesh Bhawan, CPCB, Delhi- 110 032**

**List of Participants**

<b>Sl. No</b>	<b>Name</b>	<b>Designation and Organization</b>	<b>Member of the Committee / Invitee</b>
1.	Dr. R.K. Singh	Retired Scientist 'F', Bureau of Indian Standard, New Delhi	Chairman
2.	Dr. C.S. Sharma	Ex. Additional Director, CPCB, Delhi	Member
3.	Dr A K Swar	Chief Environmental Engineer, State Pollution Control Board, Odisha	Member
4.	Sh. D. M. Thaker	Unit Head, Hazardous Waste Cell, Gujarat Pollution Control Board, Gandhi Nagar, Gujarat	Member
5.	Sh. B. Vinod Babu	Additional Director & Head, WM-I, CPCB, Delhi	Member
6.	Sh. Dinabandhu Gouda	Additional Director & Head, IPC-I, CPCB, Delhi	Member
7.	Sh Abhey Singh Soni	Additional Director & Head, WM-II, CPCB, Delhi	Member Convener
8.	Sh Anil C Ranveer	Additional Director, WM-II Div, CPCB, Delhi	Invitee
9.	Ms P K Selvi	Scientist 'D', WM-II Div, CPCB, Delhi	Invitee
10.	Sh. Mohd Salik	Senior Research Fellow, WM-II Div, CPCB, Delhi	Invitee
11.	Sh. M.V. Srinivas	Junior Research Fellow, WM-II Div, CPCB, Delhi	Invitee

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**Recommendation of the Expert Committee for approval of proposals under Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.**

Sl. No.	Name of the Industry	HW as Raw Material	Product	Brief Process	Recommendations
1.	M/s Jindal Steel and Power Ltd., Angul, Odisha	As per HOWM Rules, 2016, 'waste pneumatic and other tyres' excluding those which do not lead to resource recovery, recycling, reclamation are listed at item no B-3140 of Schedule-III.	Production/manu facturing of Syn gas which is to be used in direct reduction of iron ore.	Steel wire completely removed from the waste tyres and then mixture of waste tyres/tyre crumbs along with pet coke and coal (50% waste tyres, 10% pet coke and 40% Coal) have been proposed to be utilized in the gasification process to produce syn gas which is to be used in reduction of iron ore. By-products like tar, gasification oil, phenol, rectisol naphtha, ammonia and elemental sulphur are recovered and sold.	<p>The committee observed that the proposal for utilization of used/waste tyres in coal gasification unit for production of syn gas includes recovery of various other by-products (tar, gasification oil, phenol, rectisol naphtha, ammonia and elemental sulphur).</p> <p>The proposed utilization process is subject to following conditions:</p> <ol style="list-style-type: none"> <li>The unit should provide copy of Environmental Clearance alongwith Consent to operate granted to the unit.</li> <li>Policies of the Central &amp; State Government for utilization of used/waste tyres in such utilisation process.</li> </ol> <p>The committee recommended trial run permission may be granted with following conditions:</p> <ol style="list-style-type: none"> <li>The trial run may be permitted for co-processing of indigenous (20%) used/waste tyres along with pet coke and coal in the gasification process for production of syn gas.</li> <li>Asses the concentration of zinc in ash/residue of gasifier to ascertain safe methods for handling and disposal.</li> <li>The analysis of waste water w.r.t. pH, O&amp;G, TSS, B.O.D, Phenolic Compounds, C.O.D, Cyanide, Iron, Total Chromium, <math>\text{NH}_3\text{N}_2</math>, &amp;</li> </ol>



Sl. No.	Name of the Industry	HW as Raw Material	Product	Brief Process	Recommendations
					<p>Heavy Metals.</p> <p>iv. Fugitive emissions shall be monitored for PM<sub>10</sub>, SO<sub>x</sub>, NO<sub>x</sub>, H<sub>2</sub>S, NH<sub>3</sub>, HCN, CO, Total VOCs. SVOCs (PAHs).</p> <p>v. Source emission shall be monitored for PM, CO, SO<sub>x</sub>, and NO<sub>x</sub>, Dioxin &amp; Furan, SVOCs, VOC, H<sub>2</sub>S, Heavy metals (Cr, Cd, Cu, Ni, Pb, Zn, As, Mn, Mg, Hg, Se), HCL, HF, HCN.</p> <p>vi. Analysis of Ash (Cinder) w.r.t. Arsenic, Barium, Chromium, Lead, Nickel, Selenium &amp; Zinc.</p> <p>vii. Analysis of Gasification Oil w.r.t. PCB, Heavy Metals (Pb, As, Cd, Cr, Ni), PAH, Sulphur &amp; Total Halogens.</p> <p>viii. Analysis of Phenolic Pitch/Phenol/Ammonia for the possible contamination.</p> <p>ix. Trial run may be witnessed by TEC members along with CPCB and SPCB officials.</p>
2.	(ii) M/s Bhiwadi Jal Pradushan Nivaran Association, Bhiwadi, Rajasthan	CETP sludge generated from spent acid neutralization unit in CETP, category – 35.3 of schedule I of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.	Bricks	CETP sludge generated from acid neutralization facility is added into pan mixer with lime, cement/gypsum and fly ash. The proposed composition of CETP sludge, lime, cement/gypsum and fly ash will be 30%, 15%, 10% and 45% respectively in one brick. The materials, together in proposed composition will be added into Pan Mixer for about 5-10 minutes for making a homogenous mixture. The homogenous mixture is carried from pan mixture to brick making machine on a	<p>The committee observed following points in the process of utilisation of CETP sludge:</p> <p>i. The unit proposed to utilise hazardous waste (CETP sludge) with lime, cement/gypsum and fly ash in proportion 30%, 15%, 10% and 45% respectively, for manufacturing brick.</p> <p>ii. The unit proposed to use treated water for curing of bricks.</p> <p>In view of above, the committee recommended that trial run may be permitted to unit with following</p>

Sl. No.	Name of the Industry	HW as Raw Material	Product	Brief Process	Recommendations
				conveyor belt. Bricks manufactured from the machine will be kept for 3 days under sun drying process and then undergoes curing for atleast 28 days for curing before selling. Curing of bricks is proposed by CETP treated water.	<p>conditions:</p> <p>iii. Product (bricks) manufactured with utilisation of hazardous waste (CETP Sludge) shall be tested for TCLP of heavy metals and parameters as per BIS of clay bricks.</p> <p>iv. Fugitive emission shall be monitored for PM10, CaSO<sub>4</sub>.</p> <p>v. Analysis of treated Waste Water w.r.t. Adsorbable Organic Halides (AOX), pH, Phenolic Compounds, B.O.D., C.O.D, Cyanide, Mercury, Heavy Metals (Cd + As + Pb + Cr + Cu + Mn + Ni + Zn).</p> <p>vi. Analysis of Hazardous waste (CETP Sludge) w.r.t. Moisture Content, Nitrogen as nitrate, Total concentration of Heavy metals (Cr, Cd, Cu, Ni, Pb, Zn, As, Mn), Mercury &amp; Flouride.</p> <p>vii. Analysis of Product (Bricks) w.r.t. Acidity Content, Flouride, Mercury, Nitrate, TCLP of Heavy metals (Cr, Cd, Cu, Ni, Pb, Zn, As, Mn) and also As per IS 12894:2002 (BIS of clay bricks) w.r.t. comprehensive strength, water absorption, efflorescence &amp; drying shrinkage.</p>
3.	M/s M.S. Drums, Kolkata, West Bengals	Contaminated barrels/drums/ containers generated from industrial operations using mineral or synthetic oil as lubricant falls under the	Clean & Recycled Drums	Oil contaminated empty barrels/drums/ containers are collected and stored in a separate area covered with shed. The caps of drums are opened in a well-ventilated area with adequate opening to pass the emitted vapours while opening drums. Drums are first	The committee observed that a SoP, "Utilization of contaminated barrels /containers drums containing hazardous wastes/chemicals" has already been prepared by CPCB, which may be revised by incorporating source of generation viz. drums contaminated with oil and lubricants.

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Sl. No.	Name of the Industry	HW as Raw Material	Product	Brief Process	Recommendations
		category – 33.1 of Schedule I of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.		treated with hot caustic solution (2%) at drum wash basin for 10 min followed by water rinse for 5 min. Further, the drums are washed with detergent solution for 10 min to remove dirt and other residues, followed by water rinse for 5 min. Deformations/irregularities/dents of the drums are fixed using automatic de-denting machine followed by leak test using treated effluent water. The effluent generated from cleaning process and de-denting process is sent for treatment in ETP. The same treated water is again utilised for said cleaning and de-denting process.	
4.	M/s SI Group, Mumbai, Maharashtra	<p>1. <b>Organic residue (Category - 1.4 of Schedule I of HOWM Rules, 2016)</b> is generated during manufacturing of Alpha Methyl Styrene &amp; its dimer, Acetophenone, Isophorone, Diphenyl Oxide, Isobutyl benzene.</p> <p>2. <b>Tarry residue and still bottoms from distillation (Category - 1.2 of Schedule I of HOWM Rules, 2016)</b> is generated during manufacturing of Cumene, phenol and acetone.</p>	Tar blend to be used as a supplementary fuel in the boiler.	The utilization process involves blending of distillation residues/organic residues generated on-site with residue containing phenol. This tar blend is a supplementary fuel in place of conventional fuels such as Furnace Oil (FO), Low Sulphur Heavy Stock (LSHS), Regasified Liquefied Natural Gas (RLNG), etc. Combustion air used to provide required oxygen for proper combustion. Upon combustion, flue gases pass through economizer to pre-heat the boiler feed water close to its boiling point to recover heat before exiting the boiler. High Pressure Steam generated from this boiler is utilized in various manufacturing processes as heating source.	<p>The applicant has applied under Rule 9 for utilisation of hazardous waste generated at their premises as supplementary fuel in the boiler, CPCB has processed the application, prepared trial protocol and called for technical presentation.</p> <p>Meanwhile, the applicant has informed that utilisation of hazardous waste (Organic residue, Tarry residue and still bottoms from distillation and Thick residues containing phenol) not covered under Rule 9 and requested for exemption vide letter dated 11.11.2019, which was received after invitation letter for technical presentation before TEC.</p> <p>In addition, the unit also approached MoEF&amp;CC for exemption from Rule 9. In this regard, the matter was discussed in 68<sup>th</sup> Technical Review Committee (TRC) constituted by MoEF&amp;CC during 17-18 January, 2019, and issued a letter to the unit</p>

R. K. Singh

Sl. No.	Name of the Industry	HW as Raw Material	Product	Brief Process	Recommendations
		3. Thick residues containing phenol (Category - 19.1 of Schedule I of HOWM Rules, 2016) is generated from phenol plant.			<p>mentioning, "applicant should get their residue re-analyzed by NABL accredited laboratory who should also collect sample from the plant, on the line of earlier analysis report of 2004 based on which applicant were allowed to use residue as a fuel instead of LSHS/FO in the boilers. The case will be re-examined based on the receipt of above said report" on 17.05.2019.</p> <p>The committee recommended that the unit should approach again to MoEF&amp;CC for final decision in this matter.</p>

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*R.K. Singh*