Waste Management - II Division
Central Pollution Control Board, Delhi

Sub: Minutes of the 39th meeting of the Technical Expert Committee (TEC) for "Evaluation of proposals for utilization of hazardous wastes under Hazardous and Other Wastes (Management and Transboundary Movement) (HOWM) Rules, 2016".

1. The 39th meeting of TEC for "Evaluation of proposals received from various industries for utilization of hazardous wastes under Rule 9 of HOWM Rules, 2016" was held during 10.06.2024 to 11.06.2024 by CPCB, Delhi through hybrid mode.

2. Ms. Deepti Kapil, Additional Director (WM-II Division, CPCB, Delhi) and Member Convener (TEC), welcomed the Chairman and members of the committee, invitee members and apprised the agenda of the meeting to TEC. The list of the participants is enclosed at ***Annexure A***.

3. Based on the trial study report, the draft Standard Operating Procedures (SoPs) & Checklist of Minimal Requisite facilities for utilization of hazardous waste prepared by WM-II Division, CPCB, were discussed by the committee. Recommendations of the committee on the draft SOP are tabulated below:

S. no.	SOP	Recommendations
1.	SoP for utilization of spent sodium acetate solution (generated during manufacturing dye & dye intermediates) in recovery of sodium acetate trihydrate	CPCB, Regional Directorate-Vadodara has presented the details of a trial run conducted at M/s Shree Shubh Industries, Bharuch for utilization of Spent Sodium acetate solution (generated during manufacturing dye & dye intermediates) in recovery of sodium acetate trihydrate. The committee observed the following: i. Trial study was conducted for recovery of sodium acetate trihydrate crystals from spent sodium acetate solution procured from dye & dye intermediate industry. ii. The utilization process involves only evaporation and there was no treatment to remove impurities except physical filtration through carbon cloth. The performance of cloth filter system with respect to removal of impurities and generation of wastes if any was not assessed in the report. iii. Work zone monitoring conducted for PM10 & Acetic acid near storage & process area and found within prescribed standard. Due to the complete closed system of the reaction vessel, no stack observed for source monitoring. iv. There is no residue generation during the process. The mother liquor from centrifuge is reused in the process and Condensate water from evaporator is used back in the cooling tower to maintain ZLD. The facility has no provision of installing an Effluent Treatment Plant. This may ultimately result in assimilation of impurities in Product itself. v. It was also observed that a similar trial is conducted at M/s Petroils Industry, Gujarat where cationic surfactant is used

S. no.	SOP	Recommendations
		to remove impurities thus generating residues which require disposal in TSDF. vi. In the trial study report joint inspection team suggested to include the similar utilization process observed at another unit namely M/s Radheshwar Rasayan where the spent sodium acetate crystal is being mixed with water and then after evaporation turned into powder form hence called, anhydrous sodium acetate. The committee suggested for following: i. The trial study is inconclusive w.r.t. treatment for removal of impurities through carbon cloth filter. The utilization process is mainly evaporation i.e. physical change of hazardous waste from solution to solid/crystal form after passing through hollow drum type carbon cloth bag filter. ii. GPCB requested to consider a comprehensive SoP for spent sodium acetate generated from other industry sources such as dye & dye intermediates & pharma where hazardous waste is either in solid or solution form. iii. As the trial study has not highlighted on removal of impurities, and the points suggested by GPCB, the committee recommends that a re-inspection of M/s Shree Shubh Industries may be carried out to study the treatment of hazardous waste and also inspect M/s Radheshwar Rasayan to recommend appropriate treatment method and air pollution control measures for control of anhydrous/dry powder form of recovered product. iv. The re-inspection report shall include the degree of re use of mother liquor in the same process, characteristics of condensate water, treatment method of hazardous waste, air pollution control measures, etc. including clear recommendations with pros and cons. The committee recommended re-inspection of the unit by joint team of GPCB and CPCB and the report received in this regard may be discussed in subsequent TEC.

4. The applications regarding (i) utilization of Spent Sulphuric acid (generated from various sources other than LABSA process) in production of Single Super Phosphate and (ii) utilization of Spent Sulphuric acid/ Phosphoric acid/ HCl (generated from organic chemical industries, dye & dye intermediates, pesticides, pharma sector) in production of Di- Calcium Phosphate were discussed and recommendations were given below:

S. no.	Applications	Recommendations
1.	i. M/s T J Agro Fertilizers Ltd, Navsari (Gujarat) ii. M/s BEC Fertilizers Ltd., Bharuch, Gujarat iii. M/s Madhya Bharat Agro Products Ltd, Sagar, Madhya Pradesh iv. M/s Basant Agro Tech (I) Ltd., Akola, Maharashtra v. M/s Rama Phosphate Ltd. (Arihant Fertilizers), Chittorgarh, Rajasthan vi. M/s Rama Phosphate, Udaipur, Rajasthan vii. M/s Patel Phoschem Ltd., (Old Name Dharamsl Morarj Chemical Co. Ltd.), Udaipur (Rajasthan) viii. M/s Sadhna Phosphate & Chemicals, Udaipur (Raj.) ix. M/s Adheesha Phosphates, Udaipur, Rajasthan x. M/s. Jubilant Agri and Consumer Products Limited, Gajraula, Amroha, Uttar Pradesh	As per 38th TEC recommendations, for the proposals where trial study (at production stage in the industry) and long term study (by research organizations on soil & crops) on utilization of Spent Sulfuric acid from the LABSA process in the production of SSP, the concurrence/ inputs has been received from the DoF vide letter dated 13/05/2024 and accordingly, the SoP#102 for the "*Utilization of Spent Sulphuric acid (SSA) [generated from Linear Alkyl Benzene Sulphonic Acid (LABSA) process] in manufacturing Single Super Phosphate for use as Fertilizer*" has been published. Further w.r.t. recommendations of 38th TEC, the applicants of proposals for utilization of SSA (generated from other than LABSA sources) for manufacturing of SSP have been collectively invited to this meeting to present their cases. Upon deliberation, the committee observed that the proposals for the utilization process of SSA in SSP manufacturing is similar as most of the SSP manufacturing units involved in the acidulation of rock phosphate with Spent Sulphuric acid. However, the sources of acid vary from dye & dye intermediates, chemical (organic & inorganic) and ore processing industries, etc. The committee suggested that the proposals for utilization of spent sulphuric acid other than the LABSA process may adhere to the same procedure as adopted for SoP#102 i.e., conducting trial study, followed by long term study and obtaining inputs/ concurrence on those studies before finalization of SoP. In this regard, the committee suggested that applicants for utilization of SSA from a specific source other than the LABSA may collaborate and form a consortium to collectively represent their proposal for utilization of spent sulfuric acid from that particular source. The consortium may nominate one or two suitable facilities to conduct production stage trial study. Further, to streamline the process of conducting the required studies for production and utilization stages, a working group may be formed with officials from concerned SPCBs & CPCB. The working-group may identify similar sources of Spent Sulphuric acid and accordingly suggest nationally recognized institutes for conducting long term studies covering all of the sources of the Spent Sulphuric acid. The Consortium may collectively bear the costs of the long-term study, including

		the onboarding of a nationally recognized institute, such as one recognized by CSIR or ICAR. This committee recommended that the identified facilities in the Consortium may be granted trial permission upon recommendation of working-group; and after successful demonstration of production stage trial study, conditional permission may be issued to the applicants of the consortium in line with recommendations made in 38th meeting of TEC.
2.	Utilization of spent (Sulphuric acid/ Phosphoric acid/HCl) acids (generated from various sources) in production of Di-Calcium Phosphate (DCP)	CPCB informed the Committee that the applications have been received for the utilization of spent HCl/ H_2SO_4/ H_3PO_4 (generated from various sources including pharma, organic chemical, etc.) for manufacturing of DCP where 02 trial studies have been carried out at Production stage utilization of spent HCl. The matters were also discussed in 37th & 38th TEC wherein the committee recommended that 1.) long term studies are essential for the said proposals as the end utilization involves animal consumption; 2.) CPCB may identify the research organization for conducting long term study and 3.) CPCB to get the details of responsible government authorities such as Mo Fisheries, Animal Husbandry & Dairying (MoFAH&D), who may grant necessary concurrence on final draft SoP prepared by CPCB. However, to discuss the new applications that are being received for the said proposal; the said matter is placed in this meeting again. The committee reiterated that since Di Calcium Phosphate is produced using spent acid, which might contain the residual chemical contaminants from production processes (such as pesticide, pharma, dye-intermediate productions). Such constituents may have deleterious health effects upon consumption and could also buildup (biomagnify) in the animals that eat the fodder, consequently the products derived from these animals may also be a potential health risk to consumers. In this regard the committee suggested that CPCB may appraise the matter to MoFAH&D with a request to provide the details of concerned government authority who may provide appropriate advice and concurrence on final utilization of the products derived from spent HCl and also to provide inputs on modalities for such new applications being received by CPCB (if any).

		If deemed necessary, the concerned scientists / officials from the MoFAH&D may be invited to subsequent TEC meetings to deliberate the matter in detail and reach a conclusive decision in this regard. Therefore, the committee recommended that the new applications that have been/ being received for the said proposals may be kept in abeyance until the inputs received from MoFAH&D.

5. The following applicants were requested to make a technical presentation:

   i. Ashok Leyland, No. 23, Near ETPS, Kathivakkam High Road, Ennore, Tamil Nadu-600057

   ii. M/s Alset Enterprises Private Limited, Plot no. 33, 1206 to 1210, Khatian 3203, 3204, Baneshwarpur, JL 127, Sirakol, Falta, 24 Parganas South- West Bengal

   iii. M/s Ferric Alum Industries, Plot no. 2807/1, GIDC Estate, Ankleshwar -393002, Dist. Bharuch, Gujarat

   iv. M/s D.K. Pharmachem Pvt. Ltd., F-32, W-7/6/5/4 MIDC Badlapur-421503,

   v. M/s. Rahul Sulphate, 313/3, 40 Shed Area, GIDC Estate, Vapi, Gujarat

   vi. M/s Sulphur Mills Limited, Plot No. 02, SIDC: Panoli, Dist: Ankleshwar, - 394116

   vii. M/s. Pharmavet Industries, Plot No. 2501/2/2, Opp. Bank of Baroda, 4th Phase GIDC Vapi 396195

   viii. M/s Sun Industries, Plot no.1212, GIDC Sarigam, Tal:Umbergaon, Dist:Valsad-396155

   ix. M/s Shiv Silica Pvt. Ltd., Plot No. 6212, GIDC Industrial Estate, Ankleshwar

The details of the proposals along with the recommendations of the committee are given in ***Annexure-B***.

M/s Sun Industries, Gujarat informed the volunteer withdrawn of its application via e-mail, hence the same shall be considered as disposed. M/s Shiv Silica & M/s Ferric Alum informed that due to their engagement in personal work they are not able to participate in the meeting and requested for consideration of their proposal in the next meeting. Therefore, the Committee recommended the matter to be placed in subsequent TEC.

6. The meeting ended with a vote of thanks to the chair.

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Annexure A

List of Participants

Sl. No	Name	Designation and Organization	Member of the Committee / Invitee
1.	Dr. Anil K. Saxena	Former Director, National Productivity Council, Delhi	Chairman
2.	Sh. D. M. Thaker	Member Secretary, GPCB	Invitee
3.	Dr. Shantanu Kumar Dutta	Member Secretary, PCB Assam	Member
4.	Sh. P. C. Rauta	Additional Chief Environment Engineer, State Pollution Control Board, Odisha	Member
5.	Sh. M. Malaiyandi & Ms. T. Rathi	Additional Chief Environment Engineer, Tamil Nadu Pollution Control Board	Member
6.	Sh. R. K. Gupta	Superintending Engineer, Madhya Pradesh Pollution Control Board	Member
7.	Dr. S. K. Goyal	Chief Scientist & Head, CSIR-NEERI, Delhi	Member
8.	Dr. Sandeep Kumar Dixit	Assistant Professor, Department of Chemistry, S.S. (PG) College, Shahjahanpur, UP	Member
9.	Sh. B. Vinod Babu	Head, WM-II Div., CPCB, Delhi	Member
10.	Ms. Deepti Kapil	Additional Director, WM-II Div., CPCB, Delhi	Member Convener
11.	Ms. Kavita B.V.	Sc. 'E', CPCB-Regional Directorate, Vadodara	Invitee
12.	Ms. Sarah M. Syed	Assistant Environmental Engineer, Gujarat Pollution Control Board	Invitee
13.	Ms. Medha Sharma	Scientist C, WM-II Div, CPCB, Delhi	Invitee
14.	Sh. M. V. Srinivas	SRF, WM-II Division, CPCB, Delhi	Invitee
15.	Sh. Mohd. Salik	SRF, WM-II Division, CPCB, Delhi	Invitee

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Annexure B

Recommendation of TEC for proposals under Rule 9 of HOWM Rules, 2016.

S. no.	Name of the unit	Hazardous Waste details	Product	Brief Process	Recommendations
1.	M/s DK pharmachem Plot no. F-32, W: 4-7, MIDC Badlapur, Tal-Ambarnath Dist.- Thane, Maharashtra	Spent Para Toluene Suphonic Acid salt (PTSA salt) [generated during production of 7 ACCA-Pharma product] is hazardous waste under category C2 at Schedule-II of HOWM Rules, 2016	Sodium Toluene Sulfonate (STS)	Sodium Toluene Sulfonate (STS) is produced from spent ammonium p-Toluenesulfonic Acid (PTSA) Salt. The spent Ammonium PTSA salt is heated with process water and further sodium hydroxide is added to adjust the pH to 10-11. The reaction leads to the production of STS solution and ammonia gas. The ammonia gas released is scrubbed and the crystalized STS in mother liquor is centrifuged and dried. STS in powder form is packed as a product.	The unit has presented the proposal. Upon deliberation, the Committee observed that the proposed utilization is generating two products i.e. Sodium Toluene Sulfonate (STS) & ammonia gas which is scrubbed to produce aqueous solution of ammonium hydroxide. The unit has presented that aqueous solution of ammonium hydroxide will be used as a neutralizing agent in other processes. Though, the unit has not provided analysis report for the same. The unit has proposed to utilize PTSA salt to co-produce solution of ammonium hydroxide along with STS. The committee observed that Sodium Toluene Sulfonate (STS) has end uses as anticaking & antiblocking agents in powder detergents and as solubilizer, coupling agent and processing aids in detergent manufacturing. After deliberations, the Committee recommended that unit may be permitted for trial study for utilization of Spent Para Toluene Sulfonic Acid salt (PTSA salt) [generated during production of 7 ACCA-Pharma product] for 7 days with the following monitoring parameters & conditions: i. The trial shall be conducted for spent ammonium p-Toluene Sulfonic Acid salt to produce Sodium Toluene Sulfonate (also known as sodium toluene sulphonate) and its derivatives, if any as finished products. These

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					finished products shall not have end usage allowed in production of food, pharma, healthcare & fertilizers ii. Hazardous waste & Products (i.e. Spent PTSA & STS) to be analysed for pH, Moisture content, Sulphuric acid content, Ammonia, Cyanide, Chlorides, Sulphates, Sulphide (as H_2S), & Heavy metals (Cr, Hg, Pb, & Zn) as per Schedule-II of HOWM Rules, 2016. iii. Work zone emissions shall be monitored for PM, Sulphuric acid Mist, Ammonia, Total VOCs and relevant VOCs in ppm or mg/m^3. iv. Source emissions shall be monitored for PM, ammonia and acid mist (H_2SO_4). v. The trial study shall be conducted with and without utilization of Spent ammonium p-Toluene Sulfonic Acid salt.
2.	M/s Alset Enterprises Private Limited, Plot no. 33, 1206 to 1210, Khatian 3203, 3204, Baneshwarpur, JL 127, Sirakol, Falta, 24 Parganas	Spent pot lining (i.e. carbon & refractory) generated from primary Aluminium Smelters is categorized as hazardous wastes under Category - 11.2 of Schedule - I of HOWM Rules 2016	Carbon fuel and Mineralizer	Spent pot lining (SPL) 1st cut & SPL 2nd cut is loaded mechanically, for crushing and screening to size up to 25 mm. It is further mixed with 15% Calcined Dolomite fines (size up to 1 mm). Retention period given is 24 Hrs. Within this duration all the leachable fluorides react with the Dolomite and forms a stable non leachable compound. Further the	The unit has presented the proposal. Upon deliberation, the Committee observed that the proposed utilization proposal involves leaching of SPL 1st and 2nd cut with calcined dolomite to convert fluoride into non leachable and further heat treatment up to 500°C in an electric thermal reactor for destruction of Cyanide. The committee observed that CPCB has published a SoP for treatment of SPL with lime for fluoride followed by thermal treatment of cyanide in SPL 1st cut (that is the Carbon portion of SPL) only for end use of treated Carbon as mineral fuel in high temperature applications.

S. no.	Name of the unit	Hazardous Waste details	Product	Brief Process	Recommendations
	South- West Bengal			raw mix is given heat treatment in Ribbon Blender at the temperature of 500°C in oxidizing condition. Heat treatment breakdowns the CN bond of Cyanide and thus, Cyanide is destroyed. The non-hazardous products obtained, are further screened to two different sizes i.e., Size (1 to 25) mm and Size up to 1 mm. The final product is to be sold as Carbon Product and/ or Mineralizer to Steel, Cement & Ferro alloys industries	The committee also observed that the unit has submitted CTO of the plant which is operating as per aforesaid SoP and there is no full-fledged facility for demonstration of proposed utilization process but only a pilot scale plant of capacity about 2MT per batch. In view of lacking complete information regarding detailed process flow diagram with material balance of 1st as well as 2nd cut SPL, the Committee suggested followings: i. The applicant shall submit ultimate and proximate analysis of SPL 1st and 2nd cut including CNHS and calorific value. ii. The applicant shall submit a process flow diagram and material balance per batch with peak capacity of the plant. iii. The applicant shall submit details of APCD for control of emission released during treatment of SPL 1st cut and 2nd cut. The committee recommended upon receipt of aforesaid information the applicant may be invited for deliberation of the matter in subsequent TEC meeting.
3.	M/s Sulphur Mills Limited, Plot No. 02, SIDC: Panoli, Dist:	Spent Zinc hydroxide (generated during manufacturing of pharma intermediates) is categorized as	Zinc Sulphur powder (water dispersing granules)	Dispersing agent, binders, fillers and stabilizers are mixed with water in a high speed mixing tank, after mixing it is transferred to the holding tank. This slurry is then passed through wet mils to get	The unit has presented the proposal. Upon deliberation, the TEC observed that the applicant intends to replace zinc oxide and utilize spent hydroxide as a supplementary resource in production of zinc sulphur powder having end use in land applications as soil micronutrient.

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	Ankleshwar, - 394116	hazardous under Category 29.1 of Schedule I of HOWM Rules, 2016	End use as soil micronutrients	the required particle size. After getting particle size, slurry is sent to the spray dryer and dried at the set temperature to get the water dispersible granules. Material is packed in bags and sent to the warehouse. Spray dryer equipment is attached with Cyclone separator, wet scrubber, venturi scrubber, demister pad scrubber, polish filter etc. to prevent any dust particle to escape in the atmosphere	The committee informed the applicant that the unit is required to carry out a trial studies both at production as well as end usage/ application of product (nutrient) on soil. It would require long term lab and field studies by an institute of national repute such as ICAR, CSIR, etc. to ascertain the possible adverse impacts on soil & plants and to establish whether the product is safe to be utilized as nutrient in soil. The committee also suggested that as in case of production of SSP utilizing SSA, feedback /concurrence shall also be taken from the Department of fertilizer or Department of Agriculture. Further, the committee recommended that before granting trial permission for production stage, the applicant shall submit a proposal for long term study for utilization final product. Upon successful completion of trial studies, CPCB shall request DoF/DoA for inputs & concurrence. Upon receipt of the end stage study proposal the matter may be placed in subsequent TEC.
4.	M/s Ashok Leyland Ltd, Kathivakkam Village, Thirivottiyur Taluk, Ennore,	Grinding sludge (generated from automobile manufacturing industry) is hazardous wastes under Category – 5.2,	Recovery of Iron	Grinding sludge undergo magnetic separation for separation of iron sludge from rest of the material (liquid and oily substances). The liquid is routed to ETP and the solid sludge is routed to induction furnace where	The unit has presented the proposal. Upon deliberation, the TEC observed that the Grinding sludge is generated during surface finishing of gear shaft, crank shaft and other metallic internal engine driving parts which contains oil, water-based lubricants and ferrous content. TEC observed that the leaching concentrations of the Grinding sludge from a NABL accredited lab has not been

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	Chennai, Tamil Nadu	Schedule - I of HOWM Rules, 2016		the slag from melted iron is separated. The melted iron is casted in to ingots and sent back to the foundry of automobile industry.	presented. Further the unit does not have an operational facility for recovery of Iron from the Grinding sludge. In this regard, TEC recommended for conducting of trial study for Utilization of Grinding sludge for recovery of Iron for a period of 07 days upon receipt of confirmation from TNPCB that an induction furnace (Not Lab Scale) has been established for recovery of Iron from Grinding sludge and the detailed report of H.W. analysis & the write-up on the utilization process along with the material balance from the unit and with the following scope of monitoring the parameters & conditions: i) Hazardous waste, Intermediates (Slag) & Products to be analysed for Moisture content, Carbon content, Sulphur, Calorific value, LoI, TOC, TPH, and, Total & leaching concentrations of Cyanide, Sulphide, Heavy metals (i.e., Lead, Zinc, Tin, Cadmium, Arsenic, Mercury, Chromium, Cobalt, Nickel, Copper, Vanadium, Antimony, Selenium, Manganese and Iron) as per Schedule-II of HOWM Rules, 2016. ii) Influent/ filtrate and treated wastewater to be analysed for pH, COD, Oil & Grease, Phenolic Compounds, Dissolved Phosphates (as P), Sulphide (as S), Zinc, Iron, Copper, Total Chromium, Manganese, Tin, Nickel, Arsenic, Antimony, Cyanide, Cobalt, Nickel, Copper, Vanadium, Lead, Selenium, Cadmium, and Mercury.

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					iii) Work zone Emissions shall be monitored for PM_{10}, CO, SO_2, NO_x, Pb and Ni. iv) Source Emissions shall be monitored for PM, SO_2, NO_x, CO, relevant VOCs and Heavy metals (Co, Ni, Cr, As, Pb, Hg, Mn, Zn, Cd, Cu, & Tl) in mg/Nm^3. v) The inspecting team shall assess the handling and storage aspects of Grinding sludge. vi) The inspecting team shall assess the end usages of products recovered from the said utilization process.
5.	M/s. Rahul Sulphate, 313/3, 40 Shed Area, GIDC Estate, Vapi, Gujarat	Spent Sulphuric acid {Copper etching Residue generated from surface finishing/pickling of Copper alloys) is hazardous wastes under Category – 12.7, Schedule - I of HOWM Rules, 2016	Manufacturing of Copper Sulphate	Spent Sulphuric acid {Copper etching Residue} is added along with Copper oxide and virgin Sulphuric acid for manufacturing of the Copper Sulphate thus reducing the both CuO and Virgin H_2SO_4 requirement. The aqueous copper sulphate is converted into copper sulphate crystals for end usage in production of chemicals (algaecide/ fungicides/ Pesticides), dye & pigments, wood preservative, Electroplating, leather tanning, electric batteries, etc. other industrial processes.	The unit has presented the proposal. Upon deliberation, the TEC observed that the utilization of Spent Sulphuric acid {Copper etching Residue} reduces the both CuO and Virgin H_2SO_4 requirement for the manufacturing of [aqueous] Copper sulphate. The Committee observed that the copper content in the spent Sulphuric acid is <8%. GPCB apprised that with the advent of semiconductor industries in Gujarat, the need to create an ecosystem and fulfil their basic environmental infrastructural requirement is the need of hour. Also there is a specific industrial estate in Gandhinagar, Gujarat wherein there are about 30 units manufacturing Printed Circuit Boards. In absence of SOP for utilization of Spent etching chemicals and solvents generated from these industries, handling and disposal become challenging and needs to be addressed. One industry has proposed to install common infrastructure comprising of electrolytic system to recover copper metal

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					and regenerate etchant to be used again by electronic industries. GPCB has already asked them to apply on CPCB portal for preparation of SOP. Earlier one trial run has been issued to AT&S India Private Limited, Karnataka during 34th TEC. During deliberations it is observed that the process in earlier trial run (granted to AT&S) is for recovery of copper metal from etching residue and not the solution, hence this proposal may require separate trial run. Considering the resource recovery potential of utilization with minimal impacts, the committee recommended for conducting trial run to utilize Spent Sulphuric acid for 07 days with the following monitoring parameters & conditions: i) The trial run shall be conducted with and without utilization of Spent Sulphuric acid {Copper etching Residue} for manufacturing Copper Sulphate. ii) Hazardous waste, Intermediates & Products (i.e. Spent Copper Etching residue (solution) & $CuSO_4$) to be analysed for pH, concentrations of the Ammonia, Cyanide, Chlorides, Sulphates, Sulphide (as H_2S), Phosphate, Flouride& Heavy metals (Co, Ba, Ni, Cr, As, Pb, Hg, Mn, Zn, Cd, Cu, Tl, Sb, Se, Mo, & V) as per Schedule-II of HOWM Rules, 2016. iii) Influent/ mother liquor and treated wastewater to be analysed for pH, COD, Fluoride, Phenolic Compounds, Dissolved Phosphates (as P), Sulphide (as S), Zinc, Iron,

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					Copper, Total Chromium, Manganese, Nickel, Arsenic, Cyanide, Vanadium, Lead, Selenium, Cadmium, and Mercury. iv) Work zone Emissions shall be monitored for HCl Mist, Ammonia, Copper dusts and mists (as Cu), and relevant VOCs. v) Source Emissions shall be monitored for PM, H_2SO_4 mist, HCI mist, Ammonia, Cyanide, and Heavy metals (Co, Ni, Cr, As, Pb, Hg, Mn, Zn, Cd, Cu, & Tl) in mg/Nm^3. vi) The inspecting team shall assess the handling and storage aspects of spent copper etching residue (solution). vii) The inspecting team shall assess the end usages of products recovered from the said utilization process.
6.	M/s Pharmavet Industries, Plot No: 2501/2/2, GIDC Estate, Vapi, Tal: Pardi, Dist.: Valsad, Gujarat - 396195	Spent Phosphoric Acid (generated during production of i. Aluminium Phosphide, ii. Zinc Phosphide & iii. P_2O_5) is categorized as hazardous wastes under Category – B-15/ C-2, Schedule - I of HOWM Rules, 2016 respectively	Manufacturing of Di Calcium Phosphate (animal fodder)	Spent Phosphoric Acid is reacted with the Lime. The reacted slurry is then filtered in a filter nutsche followed by centrifuge. Filtrate is recycled in the process. Wet cake is taken into spin flash dryer. Then finally dried DCP is pulverized In pulveriser & packed	The unit has presented the proposal to utilize utilization of Spent Phosphoric Acid generated from 03 processes i.e., during production of i. Aluminium Phosphide, ii. Zinc Phosphide & iii. P_2O_5) for manufacturing Di Calcium Phosphate (animal fodder). Upon deliberation the committee observed that the utilization of Spent Phosphoric Acid in production of DCP intended to be utilized as animal fodder, has a possibility of causing adverse health impacts on animal as well as toxicity entering into the food chain.

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					In this regard, Committee reiterated its stand as recommended in agenda no. 2, that the said utilization would require long tern health impact studies on animals. Further, the proposal may be kept in abeyance until information is received from MoFAH&D on scope of utilization of Spent acids in the manufacturing of nutrient grade DCP. Further, it is also recommended that the unit may approach the MoFAH&D for guidance on regulatory permissions required for utilization of Spent Phosphoric Acid generated from 03 processes i.e., during production of i. Aluminium Phosphide, ii. Zinc Phosphide & iii. P_2O_5) for manufacturing of nutrient grade Di Calcium Phosphate (Animal fodder).

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