Phone : 0591-2485594

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड

1-ए/आई.एन.एस.-1, आवास विकास कालोनी, बौद्ध विहार, दिल्ली रोड, मुरादाबाद

UTTAR PRADESH POLLUTION CONTROL BOARD

1-A/I.N.S.-1, Avas Vikas Colony, Bauddha Vihar, Delhi Road, Moradabad

सन्दर्भ 3078 /N-13/126/2019/जनरल दिनांक 19.11.19

To,

The Registrar General,
Hon'ble National Green Tribunal,
Principal Bench, New Delhi.

E-mail

Sub: Regarding filing of Action Taken Report before Hon'ble NGT passed an order dated 09.10.2019 in OA No. 126/2019 (IA No. 60/2019) Bhudev Singh Vs. Central Pollution Control Board & Others.

Sir,

With reference to above mention subject, please find enclosed herewith the factual report with Annexure containing total number of pages-40, on behalf of U.P. Pollution Control Board.

With regards

(Ajay Sharma)
Regional Officer

Enclosure: As above.

cc:
1. District Magistrate, Sambhal.
2. Sri Pradeep Mishra, Advocate for UPPCB.
3. Chief Environmental Officer (C-7), UPPCB, Lucknow.
4. Chief Law Officer, UPPCB, Lucknow.

Regional Officer

COMPLIANCE REPORT OF ORDER DT 09.10.2019 BY HON'BLE NGT, NEW DELHI IN O.A. NO. 126/2019 (IA NO. 60/2019) BHUDEV SINGH VS. CENTRAL POLLUTION CONTROL BOARD & ORS.

In the matter of O.A. no. 126/2019 (IA No. 60/2019) Bhudev Singh Vs. Central Pollution Control Board & Ors., Hon'ble NGT, New Delhi passed the following order on 09.10.2019 :

"….. Report dated 12.08.2019 concludes as follows:

….. *only 58.25%, which shows that the odour control equipment is not adequate, the legal proceeding has been initiated under the Air (Prevention and Control of Pollution) Act, 1981 & Water (Prevention and Control of Pollution) Act, 1974. The compliance and action taken report shall be submitted before the next date of hearing before Hon'ble NGT, New Delhi."*

General Information about M/s Hilal Bone & Manure Mill, Vill: Babaina, Behjoi Road, Distt. Sambhal:

1	Location of Industry	Vill: Babaina, Behjoi Road, Sambhal (L 28.51282 /N 78.5751)
2	Year of establishment	1977 (As per information provided in Consent Application)
3	Nature of Industry	Bone Mill Industry, identified in the category of Slaughter Houses at Sl. No. 49 "Slaughter House (as per notification S.O.270(E) dated 26.03.2001) and meat processing industries, bone mills, processing of animal horns, hoofs and other body parts" of Red Category Industry, decided by the Central Pollution Control Board.
4	Product & Capacity	Crushed bones, horns & hoofs – 6 MT/day – Small scale
5	Source of water	Submersible pump of 1 HP
6	Discharge	Industrial: Zero Domestic: 0.5 KLD discharged through Septic tank/Soak pit.
7	Source of Air pollution	One boiler of 2 TPH capacity and volatile odour (generated from the process of steaming/heating of

		horns in closed vessel)
8	Fuel	Wood 1 MT/day in the boiler.
9	Details of Air pollution control system	1. Multi cyclone dust collector along with the stack of height 30 mtr. from ground level attached with the boiler. 2. (Newly installed) Bio filters for removal of bad odour. 3. Green belt along with the boundary wall.
10	Status of Water consent	Valid upto 31.12.2020
11	Status of Air consent	Valid upto 31.12.2020

Action Taken against the Industry and Compliance by the Industry:

1. On the basis of the efficacy report and the odor testing report dated 12.08.2019,furnished by M/S J.M. Enviro Lab Pvt Ltd, Gurugram, a show cause notice u/s 31 A of the Air (Prevention and Control of Pollution)Act 1981 has been issued to the industry by UPPCB vide letter no. H 40158/C-7/Air-936/2019 dt. 19/08/2019. (**Annexed as Annexure no. 01**)
2. In compliance of the above show cause notice, the industry has submitted its reply on 12.09.2019.The industry vide its reply ,stated that the industry has proposed to install a new bio filter and ETP .The industry has also submitted the Pre installation feasibility report dt. 3.10.2019 prepared by Proff. Dipteek Parmar Department of Civil Engineering,HBTU,Kanpur of the above proposed Bio filter and ETP. (**Annexed as Annexure no.02**)
3. At present ,the industry has installed a new bio filter and ETP as per proposal and submitted the Post installation feasibility report prepared by Proff. Alak Kumar Singh,Department of Food Technology,School of Chemical Technology,HBTU Kanpur. (**Annexed as Annexureno.03**

4. The inspection of industry was carried out by the UPPCB on 01.11.2019. The odor monitoring and the sample collection of effluent from outlet of ETP was carried out by M/S Geogreen Testing Laboratory, Lucknow (NABL Accredited Lab) on 01.11.2019 in presence of the team of UPPCB.The analysis reports are **Annexed as Annexure no.04**
5. **As per the odor monitoring report dt. 08.11.2019 the results are as follows:**

S.No.	Location	Results (ou_E/m^3)	Remarks
1	Near Main Gate (out side)	10	Very Week
2	Inlet of Activated Carbon Adsorber	610	Strong
3	Inlet of Activated Carbon Adsorber	12	Very Week
4	Near Main Gate (in side)	15	Very Week

As per the treated water (collected from outlet of ETP) analysis report dt. 08.11.2019 the results are as follows:

S.No.	Parameters	Results	Acceptable Limits
1	pH	7.5	6.0-9.0
2	BOD	2.8 mg/l	30
3	COD	2.46 mg/l	250
4	TSS	98.5 mg/l	100

Details of Newly installed Odour Control System in the Industry.

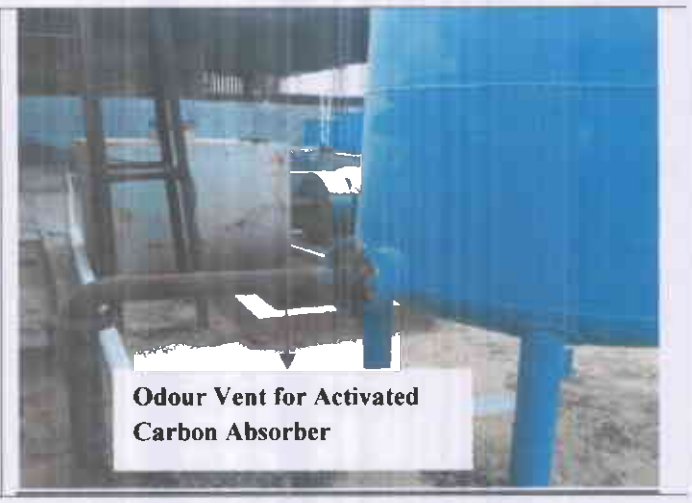
Activated Carbon Adsorber with stack enclosed to it with 1600 mm dia and total height of 2.0 m. The Activated Carbon Adsorber is connected to spray cooler facilitated by multi injector sprayer for cooling condensate. The Activated Carbon Adsorber is filled with extended Carbon media and Granular Carbon with different sizes for odour control. Activated Carbon Adsorber is used in air purifiers and industrial gas processing, for example the removal of bad odour and hydrogen sulfide from steam line of cooker installed in industry. This filter is designed to filter gases through a bed of

activated carbon (also called activated charcoal) and are usually used to combat volatile organic compounds (VOCs) released from industrial process.

A small ETP is connected with new bio filter (Activated Carbon Adsorber) which comprises of a small Flocculator for coagulation and flocculation of suspended solids available in condensated water. A mini settler equipped with tube settler media for reduction of suspended solids after which it overflows from settler, the water enters single shell (three compartment based) bio column in which, first compartment of column is comprising of trickling media and a small 0.75 HP air blower for effective aeration to lower down the incoming BOD & COD. The second compartment of the column is filled with sand media of different pore sizes to remove the fine suspended solids and third compartment is filled with activated carbon media for removal of colour & foul odour. The treated water is recirculated in spray cooler for cooling and some of the treated water is evaporated in atmosphere by the heating from steam. No discharge of effluent out side the premises observed during the inspection.

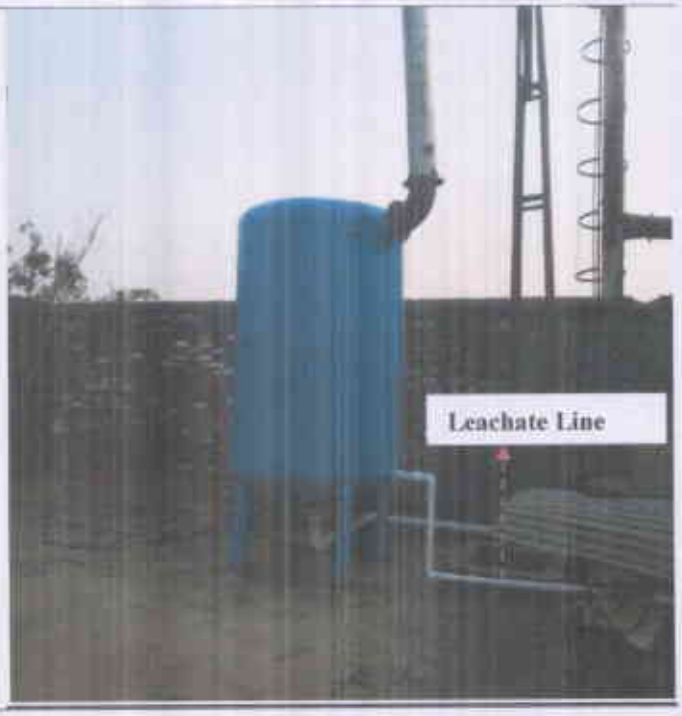
As per the report, furnished by HBTU, Kanpur, the working efficiency of the odour control system is 79.87%.

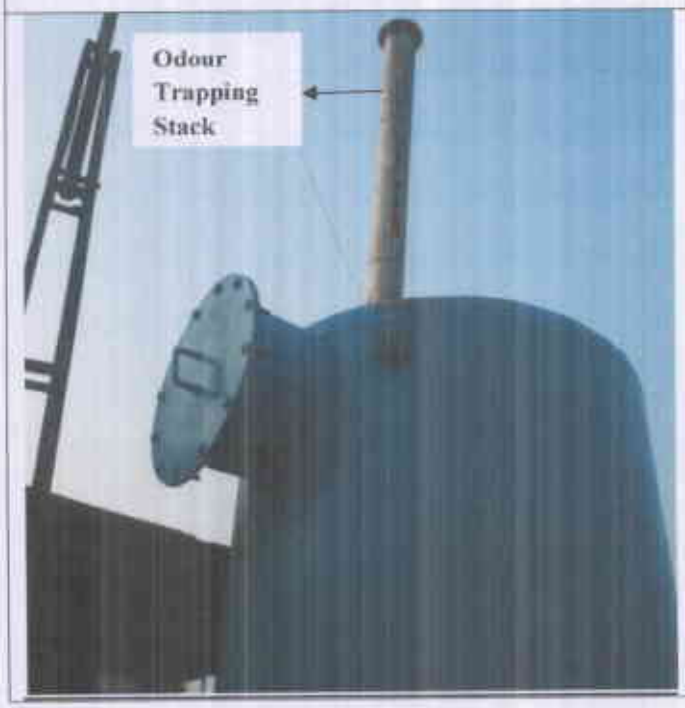
Photographs of newly installed odour control system:

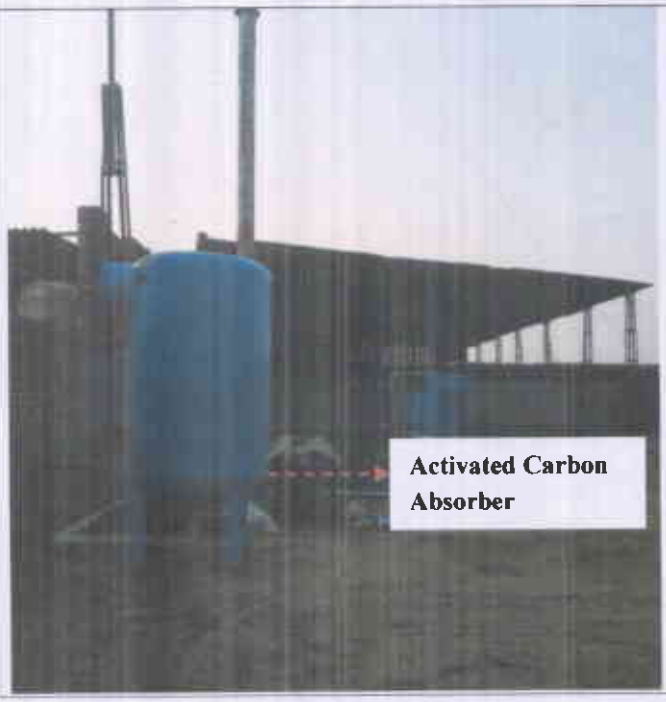


Over View of Odour Control System


Condensate
Effluent
Treatment Plant


Leachate Line


Odour
Trapping
Stack


Activated Carbon
Absorber

Conclusion:

1. As per the analysis reports of odour monitoring and treated effluent, furnished by M/s Geogreen Testing Laboratory and the post installation feasibility report, furnished by School of Chemical Technology, HBTU, Kanpur, the working efficiency of newly installed odour control system is 79.87%, which shows that the odour control equipment is adequate enough for controlling the odour generated from the industry, if operation and maintenance of the unit will be carried out as per prescribed conditions.
2. Considering the facts that the unit has under taken necessary improvement for effective control of air and odour pollution, U.P.P.C.B shall take suitable action on show cause notice issued after duly considering the imposition of suitable Environmental compensation.

18.11.19.

(J.N. Tiwari)
Jr. Engineer
U.P. Pollution Control
Board, Moradabad

18.11.19

(S.S. Singh)
Asst.Env. Engineer
U.P. Pollution Control
Board, Moradabad

18.11.19

(Ajay Sharma)
Regional Officer
U.P. Pollution Control
Board, Moradabad

Annexure - 1

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड
UTTAR PRADESH POLLUTION CONTROL BOARD

HMO 158

संदर्भ संख्या– /सी–7/वायु–936/का0ब0नो0/2019 दिनांक 19-8-19

सेवा में,

मै0 हिलाल बोन एण्ड मैन्योर मिल्स,
बबीना, बाहजोई रोड,
सम्भल

यह कि मै0 हिलाल बोन एण्ड मैन्योर मिल्स, बबीना, बाहजोई रोड, सम्भल द्वारा सूखी बोन का प्रयोग कर क्रश्न बोन 6 टी0पी0डी0 का उत्पादन कार्य करते हुए उपरोक्त वर्णित स्थल पर कार्यरत है, वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 की धारा–40 के अन्तर्गत एक कम्पनी है।

यह कि मा0 राष्ट्रीय हरित अधिकरण द्वारा पारित ओ0ए0 सं0– 126/2019 भूदेव सिंह बनाम केन्द्रीय प्रदूषण नियंत्रण बोर्ड एवं अन्य में पारित आदेश दिनांक 30.04.2019 के अनुपालन में उद्योग में स्थापित बायो फिल्टर की गुणता की दक्षता एवं उद्योग की प्रक्रिया से जनित दुर्गंध के अनुश्रवण हेतु मै0 जे0एम0 इन्वायरो लैब प्रा0लि0, गुड़गांव से दिनांक 08.08.2019 को अनुश्रवण कराया गया । उद्योग में स्थापित बायो फिल्टर के उक्त अनुश्रवण में पाया गया कि बायो फिल्टर में स्थापित स्प्रे कूलर का डिजाइन उपयुक्त नहीं है तथा बायो फिल्टर को सम्प्रेषित स्टीम कण्डन्सेट का पी0एच0 4.22, सस्पेन्डेड सॉलिड 992 मि0ग्रा0/ली0, सी0ओ0डी0 8000 मि0ग्रा0/ली0 एवं बी0ओ0डी0 2816 मि0ग्रा0/ली0 है। उक्त कण्डेन्सेट में निहित प्रचालकों से बायो फिल्टर के वेन्ट गैस के डिस्ट्रीब्यूशन पाइप के छिद्र चोक होना स्वाभाविक है जिससे दुर्गंध युक्त गैस का अनियंत्रित डिस्ट्रीब्यूशन बायो फिल्टर के पैकिंग बेड में हो रहा है । उक्त पी0एच0 4.2 कण्डेन्सेट को स्टेबिलाइजेशन होने में बाधक है।

यह कि अनुश्रवण दिनांक 08.08.2019 के दौरान पाया गया कि बायो फिल्टर के इनलेट पर दुर्गंध का कन्सेन्ट्रेशन 630 ouE/m3 तथा आउटलेट पर 263 ouE/m3 है जिससे स्पष्ट है कि बायो फिल्टर की दक्षता मात्र 58.25 प्रतिशत है जिसका मुख्य कारण बायो फिल्टर का सुचारू रूप से संचालन न किया जाना तथा बायो फिल्टर के पैकिगं मीडिया में बायोमास की कमी है जिससे दुर्गंध के घटकों (Constituents) का विघटन नहीं हो पा रहा है। अग्रेतर अनुश्रवण रिपोर्ट के अनुसार रिर्पोर्ट के अनुसार बायो फिल्टर के उक्त प्रकार से लम्बे समय तक संचालन किये जाने पर बॉटम लाइन क्षतिग्रस्त होने की सम्भावना है जिससे कन्डेन्सेट के भूगर्भीय जल में पर्कोलेट होकर भूगर्भीय जल की गुणता को प्रभावित करना स्वाभाविक है।

यह कि उद्योग द्वारा वायु प्रदूषण (निवारण तथा नियंत्रण) अधिनियम, 1981 की धारा–21/22 के अन्तर्गत बोर्ड के पत्र दिनांक 27.12.2018 द्वारा निर्गत सशर्त सहमति वायु की शर्तो का पालन नहीं किया गया है, जो कि वायु प्रदूषण (निवारण तथा नियंत्रण) अधिनियम, 1981 में वर्णित प्राविधानों का उल्लघन है।

अतः उपरोक्त वर्णित परिस्थितियों में जनस्वास्थ्य व पर्यावरण हित में वायु प्रदूषण (निवारण तथा नियंत्रण) अधिनियम, 1981 की धारा–31ए की सपठित धारा–21(6) के अन्तर्गत सक्षम अधिकारी के अनुमोदनोपरान्त यह कारण बताओ नोटिस दिया जाता है कि मै0 हिलाल बोन एण्ड मैन्योर मिल्स, बबीना, बाहजोई रोड, सम्भल के विरूद्ध क्यों न निम्न रूपेण आदेश/निर्देश जारी कर दिये जायें–

1. यह कि क्यो न उद्योग मै0 हिलाल बोन एण्ड मैन्योर मिल्स, बबीना, बाहजोई रोड, सम्भल के पक्ष में बोर्ड के पत्र सं0– **41518/UPPCB/Moradabad (UPPCBRO)/CTO/air/BHIMNAGAR/2018 Dated : 27/12/2018** द्वारा निर्गत संशर्त सहमति वायु तत्काल खण्डित कर दी जाए।

.....कृ0पृ0उ0

टी. सी. – 12 वी, विभूति खण्ड
गोमतीनगर, लखनऊ-226010
दूरभाष 2720831, 2720828, 2720691, 2720681
फैक्स 0522–2720764 Fax: 0522 – 2720764 ई–मेल. info@uppcb.com
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Web Site: www.uppcb.com

2. यह कि क्यों न उद्योग मै0 हिलाल बोन एण्ड मैन्योर मिल्स, बबीना, बाहजोई रोड, सम्भल के विरूद्ध बन्दी आदेश जारी कर दिये जाएं।
3. यह कि क्यों न सक्षम अधिकारियों से यह अपेक्षा की जाए कि उद्योग मै0 हिलाल बोन एण्ड मैन्योर मिल्स, बबीना, बाहजोई रोड, सम्भल को मिलने वाली बिजली एवं जल की समस्त सुविधाएं तत्काल प्रभाव से रोक दी जाएं।

उपरोक्त के संबंध में स्पष्टीकरण पत्र प्राप्ति के 15 दिन में प्रस्तुत करें। संतोषजनक उत्तर निर्धारित समयावधि में प्राप्त न होने की दशा में उपरोक्त वर्णित आदेश/निर्देश की पुष्टि कर दी जाएगी, जिसका सम्पूर्ण उत्तरदायित्व स्वयं उद्योग का होगा।

(अमित चन्द्रा)
मुख्य पर्यावरण अधिकारी
वृत्त–7

पृष्ठांकन संख्या एवं दिनांक उपरोक्तानुसार।
प्रतिलिपिः निम्नलिखित को सूचनार्थ प्रेषित।

1. जिलाधिकारी, सम्भल।
2. क्षेत्रीय अधिकारी, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, मुरादाबाद को इस निर्देश के साथ प्रेषित कि उपरोक्तानुसार निर्दिष्ट निर्देशों के परिप्रेक्ष्य में सतत् अनुश्रवण कम में अद्यतन निरीक्षण आख्या ससमय प्रेषित करें।

मुख्य पर्यावरण अधिकारी
वृत्त–7

Annexure-2

☎ : 05923-273561 (Off.)

Hilal Bone & Manure Mills

Manufacture & Exporter
Baradari, Sarai Tarin, Sambhal-244303 (Distt. Moradabad)
U.P. (INDIA)

Ref. No..... 7845/13/9/19

Dated.12/Sept/2019

To
CEO (Circle-7)
UP Pollution Control Board
Lucknow

डाक प्राप्ति रसीद
प्राप्ति दिनांक 12.9.19
प्राप्तकर्ता के हस्ताक्षर
उ0प्र0 प्रदूषण नियंत्रण बोर्ड, [illegible]

Subject: - Compliance of show cause direction issued dates 19.08.2019 with Reference Number:-M40158/C-7/Air-936/show cause/2019

Sir

We M/s Hilal Bone & Manure Mills at Babina, Bahjoi Road, Sambhal had received Show cause direction with above stated details & have noted the contents & observations made there in, accordingly we are submitting the point wise compliances below for your acknowledgement.

e-7 *That, in compliance of the judgement pronounces by Hon. NGT in OA No-126/2019 Bhudev Singh vs. Central pollution Control Board dated 30.04.2019 odour monitoring and assessment of Bio filter was made by M/s J.M.Enviro Lab P.Ltd. Gurugram dated 08.08.2019 in which it was found that design of spray cooler is not adequate.*

With respect to above mentioned subject we want to humbly submit that we have planned to install new Bio-filter with different technology i.e. Activated Carbon Adsorber with stack enclosed to it which 1600 mm dia and total height of 2.0 m.

The Activated Carbon Adsorber will be connected to spray cooler facilitated by multi injector sprayer for cooling condensate.

The Activated Carbon Adsorber will be filled with extruded Carbon media and Granular Carbon with different IV sizes for odour control.

Sketch drawing of the same is enclosed as Annexure for Your kind consideration as **Annexure-I.**

16/9/19

That, condensate from spray cooler was found to be pH-4.22, TSS-992 mg/l, COD- 8000 mg/l and BOD-2816 mg/l which is found to be responsible for choking of distribution pipe.

16.9.19

In this regard we want to mention that a small ETP will be connected with new bio-filter which will comprise of a small Flocculator for coagulation and flocculation of suspended solids available in compensated water, a mini settler for reduction of suspended solids after which overflow from settler the water will be enter to single shell three compartment based bio column in which first compartment of column will be comprising of trickling media and a small 0.75 HP air blower (Principle working of trickling bio reactor filter) second

16/9/19

☎ : 05923-273561 (Off.)

Hilal Bone & Manure Mills

Manufacture & Exporter

Baradari, Sarai Tarin, Sambhal-244303 (Distt. Moradabad)

U.P. (INDIA)

Ref. No..... .....

Dated.....

Compartment of the column will be filled with sand media of different pore sizes and third compartment will be filled with activated carbon filter. The treated water will recirculate in spray cooler for cooling.

We are enclosing the sketch diagram of the same for your kind consideration as **Annexure-II.**

1. *That, why not CTO issued by UPPCB under section 21/22 of Air (Prevention & control of Pollution) Act-1981 with letter No-* ***41518/UPPCB/Moradabad (UPPCBRO)/CTO/air/BHIMNAGAR/2018*** *dated* ***27.12.2018*** *should be abolished.*

2. *That, why not closure directions to be issued to M/s Hilal Bone and Manure Mills ,Babina, Bahjoi road, Sambhal.*

3. *That, why not power and water supply from M/s Hilal Bone and Manure Mills, Babina, Bahjoi road, Sambhal should be disconnected in presence of concerned officials.*

In context of the points stated above in Act of show cause directions we want to mention that we are installing new mechanism of bio-filter. Line diagram enclosed for your kind consideration as **Annexure-III.**

Also, we have requested for assessment of new Bio-filter from National Productivity Council Kanpur. We are enclosing the copy of request mail as **Annexure-IV**. On phonic communication with Officials of NPC-Kanpur, they have confirmed for carrying assessment of the Bio Filter which will be newly installed in our unit.

Hence we request to grant us time of 30 working days to successfully complete all above mentioned work.

Thanking you in anticipation.

Hilal Bone & Manure Mills

Proprietor

Annexure - 2 (a)

हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

Harcourt Butler Technical University

Nawabganj, Kanpur 208002, U.P. (INDIA)
(Formerly Harcourt Butler Technological Institute, Kanpur)
Phone +91-0512-2534001-9, Fax +91-0512-2533812, Website ..., E-mail ...

Letter no. 710/CE/Consultancy/ dated 03-10-2019

HILAL BONE & MANURE MILL
VILLAGE BABEIANA BEHJOI
ROAD, SAMBHAL, U.P

Sub: vetting of "Design Details of Odour control system proposed at located at Hilal Bone & manure Mill Village Babeiana Behjoi Road, Sambhal, U.P

Ref: Your Letter dated 24-09-2019

Sir,

With reference to your letter dated September 24th 2019 on the above cited subject, it is to certify that the **"Design Details of Odour control system proposed at located at Hilal Bone & manure Mill Village Babeiana Behjoi Road, Sambhal, U.P"** submitted by M/S Hilal Bone & Manure Mill Village Babeiana Behjoi Road, Sambhal is in line with the standard guidelines/ designed procedure.

Thanking you

Yours faithfully

(Dipteek parmar)
Professor
Department of Civil Engineering
HBTU, Kanpur

(Dr. D. ...)
Associate Professor
Department of Civil Engineering
H B T U Kanpur

Assessment Of Design Details Of Odour Control System (Activated Carbon Adsorber) Proposed To Be Install At Hilal Bone and Manure Mill

Village- Babaina, District-Sambhal

Name of Unit

M/s Hilal Bone & Manure Mill, Village-Babina, Bahjoi Road, District Sambhal, Uttar Pradesh

Total Area

Total area occupied by is 6881 sq. m.

Process of Industry

Hoof and its processing at M/s. HB&MM

The hoof of animals is light in weight and flexible withstands constant shock and concussion due to forces of locomotion. It's composed of three layers stratum external (outer layer), stratum medium (middle layer) and stratum internal (inner layer). Hoof is formed of tubules (tissue) and held together by non-tubular tissue with a composition of keratin sulphate (a protein material with high sulphur content). Keratin sulphate is a mucopolysaccharide and has a great affinity for water molecules. The hoof is harder and more flexible as compared to horn. The photograph of the uncooked hoof is presented as a Topograph-01. The hoof is precooked in a steam cooker prior to sizing through crusher. The hoof is loaded into steam cooker through a specific loader and steam is supplied from boiler and specific temperature and pressure is maintained in the cooker. The cooking is carried out for a period 3 hours and after that the cooker is cooled for 2 hours prior to taking out the cooked hoof through loader and processing it into crusher to get a size of 3 mm to 6 mm.In the steam cooking process of hoof, the protein structural constituent's mucopolysaccharide and other substances gets converted into obnoxious gases with possible constituents of organic acids, ketones, aldehydes etc. This constituent imparts obnoxious odour to the steam condensate as well as to the gaseous emission emerging from the cooker. The content of cooker is vented to the spray cooler of the existing bio filter system for controlling odour in the vented gases

Horn is also a form of bone which consists of bone horn core with a keratinous sheath. The bone horn core and keratinous sheath is process separately for the manufacture of different products. The bone horn core is pre-processed at M/s. HB&MM through crusher to specific size for supply to different industries for further use.

Details of Existing Bio-Filter

The bio filter at M/s. HB&MM comprises of a concrete structure having dimension of 5.6 m (L) x 3.9 m (W) x 9.1 m (D) and connected with the inlet vent pipe at the bottom through a network of parallel pipelines which is spread over the bottom, with specific pore sizes for uniform distribution of obnoxious gaseous emissions into the bio filter bed. The packing of bio filter bed consist of 3.0 m of gravels in height from the bottom and 1.2 m of husk uniformly spread at the top of the gravels. The gaseous emission along with the condensate after cooling in spray cooler are let into the bottom of the bio filter and is vented out through packing material from the top of the open surface of the bio filter.

EFFICACY OF EXISTING BIOFILTER: as per M/s J.M. Enviro Lab P.Ltd. Gurugram dated 08.08.2019

It has been observed that the bio filtration system installed at M/s. HB&MM is not properly designed and does not have proper accessories to treat the vent gas along with steam condensate.

The spray cooler which acts as a humidifier for the vent gases emerging from steam cooker is not as per the conventional design.

The steam condensate along with the vent gas is let into the bottom of the bio filter through vent pipe connected to bottom of the spray cooler.

The steam condensate entering into to bio filter has a pH of 4.22, Suspended solids is 992 mg/lit. And COD is 8000 mg/lit & BOD is 2816. The condensate having such characteristics may be leading to Choking of the pores of the distribution pipes for the vent gas resulting into uneven distribution of odorous gases into the packing bed of the bio filter.

It is difficult to ascertain the extent of biodegradation of constituent of condensate with a COD value of 8000 mg/ltr and pH of 4.2. At such low pH, even anaerobic bio transformation of condensate may be difficult for its stabilisation.

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The fate of condensate is not known, it may get percolated into ground water in case the bottom lining of bio filter is damaged in long run and may impair the ground water quality.

So, performance of bio filter is found to be 58.25 %only

New Odour Control System Installed at M/s. HB&MM

Activated Carbon Adsorber with stack enclosed to it which 1600 mm dia and total height of 2.0 m.

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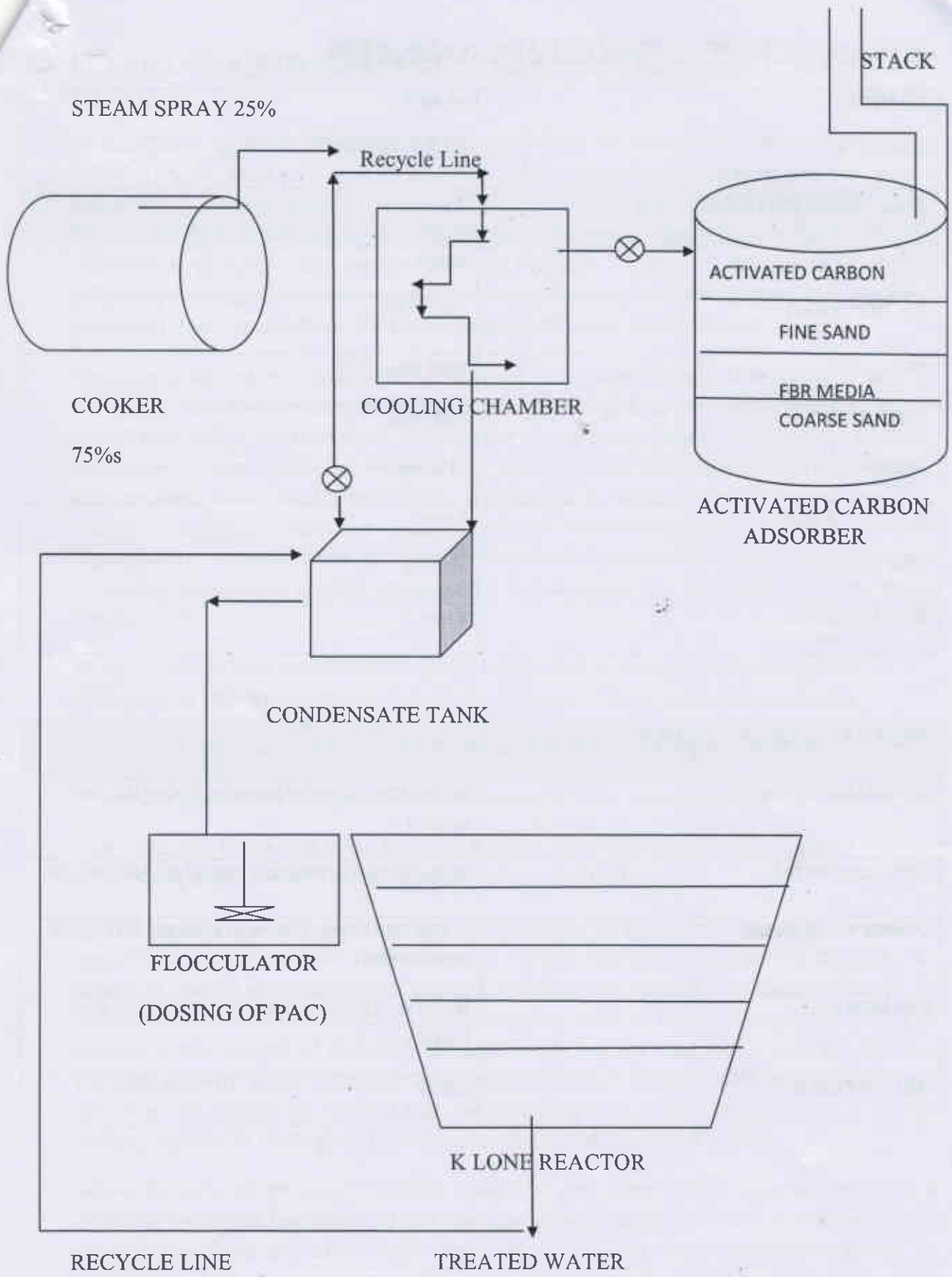
A small ETP will be connected with new bio-filter (Activated Carbon Adsorber) which will comprise of a small Flocculator for coagulation and flocculation of suspended solids available in compensated water, a mini settler equipped with tube Dec media for reduction of suspended solids after which overflow from settler the water will be enter to single shell three compartment based bio column in which first compartment of column will be comprising of trickling media and a small 0.75 HP air blower (Principle working of trickling bio reactor filter) for effective aeration to lower down the incoming BOD & COD, in second Compartment of the column will be filled with sand media of different pore sizes to remove the fine suspended solid and third compartment will be filled with activated carbon media for removal of colour & foul odour. The treated water will recirculate in spray cooler for cooling.



PROPOSED TREATMENT CONCEPT – FLOW LINE DIAGRAM

SPECIFICATION OF ACTIVATED CARBON ADSORBER

QUANTITY	01 NOS
SERVICE	ODOR CONTROL
TECHNICAL DETAILS	
MAKE	MSEP
AIR FLOW (Max)	19.5 CFM.
DIA	1600 mm
SHELL HEIGHT	2000 mm
TOTAL HEIGHT	3150 mm
WALL THICKNESS	5 mm
DISH DEPTH	12 Inch
DISH THICKNESS	6 mm

DETAILS OF MEDIA FILLING	
ACTIVATED CARBON	900 IV SIZE (Filling of Media is 30% of the shell height)
FINE SAND MEDIA	900 IV (Filling of Media is 10% of the shell height)
COARSE SAND MEDIA	¾ inch Size Bolder (Filling of Media is 20% of the shell height)
FAB MEDIA	DISK TYPE (Filling of Media is 15 % of the shell height)
DISH THICKNESS	6 mm

DISCRIPTION & WORKING PRICIPLE OF ACTIVATED CARBON ADSORBER FILTER

In adsorption, gaseous pollutants are removed from an air stream by transferring the pollutants to the solid surface of an adsorbent. Activated carbon is the most commonly used adsorbent, although zeolites, polymers, and other adsorbents may be used. There is a limit to the mass of pollutants that can be collected by an adsorbent. When this limit is reached, the adsorbent is no longer effective in removing pollutant. To recover the ability to capture gaseous pollutants, adsorbents typically are regenerated i.e., the pollutant is desorbed (removed) from the adsorbent. This regeneration may occur off-site or on-site.

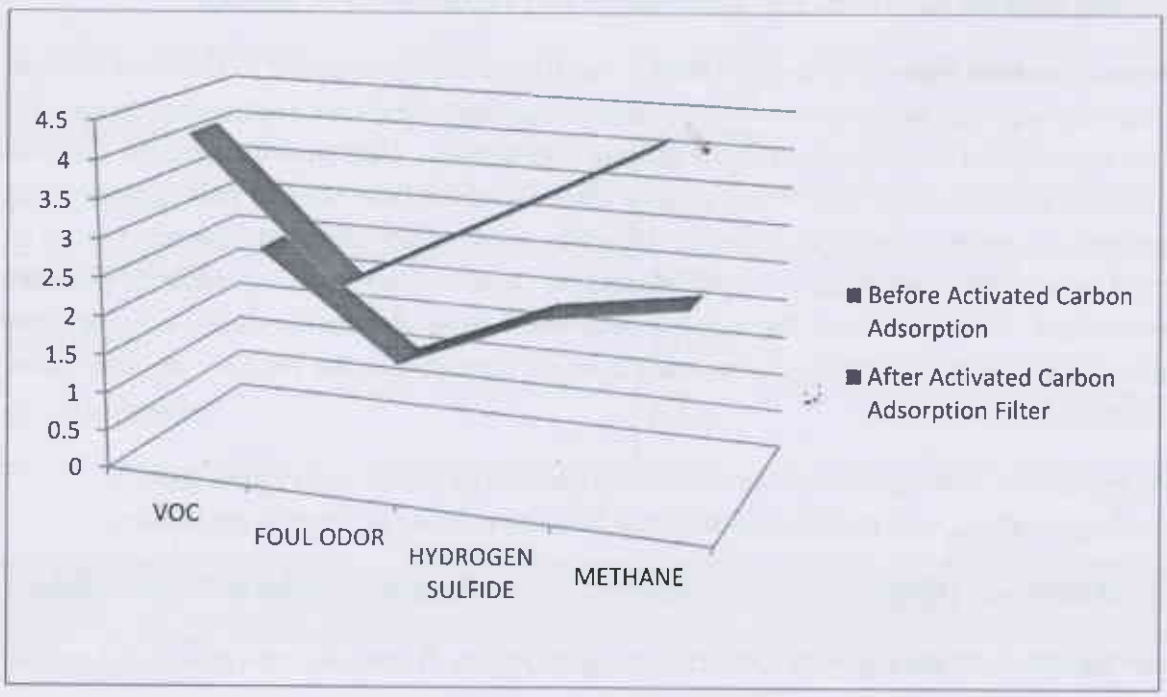
The most common types of adsorber systems use fixed beds (as opposed to fluidized beds, or the moving beds that are common in concentrator systems). One type regenerates on site; the second type, called a carbon drum, uses off-site regeneration. Carbon drum systems are low-capital-cost systems, used only when air flow rates and mass flow rates of pollutants are low. Regeneration, either on-site or off-site, typically uses either elevated temperatures (i.e., thermal desorption, sometimes using steam) or below-atmospheric pressures (vacuum regeneration). In some cases the solvent recovered from desorption (e.g., toluene from publication rotogravure printing operations) is re-introduced into the process; in other cases, it is disposed.

Many pollutants, both natural and synthetic, are gaseous in nature and require specific technology to effectively remove the pollutant from an exhaust or process gas stream.

- Acid Gases (hydrochloric acid, sulphuric acid, hydrogen sulphide, and many others)
- Inorganic Gases (Sulphur Oxides, Nitrogen Oxides, Ammonia, etc.)
- Organic Gases (Ethylene, Benzene, Ethanol, and many other volatile organic compounds [VOCs] or hazardous air pollutants [HAPs])

Several types of capacity are important to adsorbers. Saturation capacity is the maximum capacity the adsorbent can hold. However, before saturation capacity is reached, the adsorbent reaches its breakthrough capacity, which is the amount of pollutant that can be adsorbed before a significant pollutant concentration exits, or breaks through, the bed. Heel capacity is the amount of pollutant that remains in the bed after it has been regenerated. Working capacity is the difference between breakthrough capacity and heel capacity, and represents the amount of material that can be adsorbed in each working cycle. A typical working capacity is 10-20 pounds of contaminant per 100 pounds of carbon.

Adsorption systems are usually limited to sources generating organic compounds having a molecular weight of more than 50 and less than approximately 200. Low molecular weight organics usually do not adsorb sufficiently. High molecular weight compounds adsorb so strongly that it is difficult to remove these materials from the adsorbent during the desorption cycle. These molecular weights are provided as a guideline, and the suitability of an adsorption system should be considered on a case-by-case basis.



GRAPHICAL VIEW – ASSUMPTIVE GRAPH OF BEFORE & AFTER INSTALLATION OF ACTIVATED CARBON ADSORBER FILTER

SPECIFICATION OF ETP – 0.3 KLD

SERVICE	REMOVAL OF ORGANIC & INORGANIC IMPURITIES OF CONDENSATE WATER GENERATED AFTER CONDENSATION OF STEAM OF COOKER
TECHNICAL DETAILS	
NAME OF EQUIPMENTS	K LONE RECATOR (including Settling, Aeration & Filtration Chamber)
	COAGULATION CHAMBER (including Mixer Motor type arrangement & PAC Dosing Tank)
	BLOWER (0.75 HP Capacity for Mixing & Aeration of effluent)

POLLUTED WATER CHARACTERISTICS

Condensate water Generation & Characteristics for Designing of the K Lone Reactor	
Average Daily flow (Cum/day)	0.3
Effluent Characteristics:	
Ph	4.22
BOD (mg/l)	2816
COD (mg/l)	8000
Suspended solids (mg/l)	922

Treated water Characteristics	
BOD	Less than 30 mg/l
COD	Less than 250 mg/l
Suspended solids	Less than 50 mg/l
pH	6.5 – 8.5

DISCRIPTION OF ETP

The Condensate generated after condensation of Steam generated from cooker is collected in Under Ground Civil constructed tank of capacity 300 litre.

From Collection tank effluent will be pumped via 0.5 HP Centrifugal pump to Coagulation chamber where PAC (Poly Aluminium Chloride) is dosed via a dosing pump for effective coagulation of effluent and then passed to a primary settler of size 2*2*2.5 feet for settling of generated sludge. The addition of 40 mg PAC/L it enhanced TSS removal from 90- 94%.. The average removal efficiency of COD of the reactor increased slightly from 86.2 to 89.6% by PAC addition. After this primary treatment the effluent is passed to K Lone Reactor of Size 4*4*6 Feet which is having 4 partitions for Aeration, Settler & Filtration of the upcoming supernatant liquid. Every partition is claiming size of 1*4*1.5 feet size as required for treatment. Each partition having unique design according to its work, i.e Settler Chamber (IInd From top) is in hopper structure for easy separation of generated sludge. In first chamber air is supplied via 0.75 HP Blower in diffused aeration mechanism for lower down the BOD of upcoming effluent, then Passed to second part of K Lone reactor where separation of sludge is done, and the overflow passed to IIIrd Chamber of K Lone Reactor for turbulence removal & then passed to final chamber where fine sand & Activate carbon will be layered down for removal of colour & odour of the treated water.

And the treated water is recycled to system for reuse in Condensation process of steam generated from cooker.

- MOC of K Lone Reactor – Mild Steel (MS)
- Sheet Thickness – 5 mm
- Coating – Epoxy Painted (Internal & External)
- Capacity of Blower – 0.75 HP
- Size of K Lone Reactor – 4*4*6 feet

Activated Carbon

Extruded Carbon

Granular Carbon

Adsorption in pores

Annexure-3

DESIGN & CONCEPT EVALUATION REPORT

FOR

ACTIVATED CARBON ABSORBER

M/S HILAL BONE & MANURE MILL

VILLAGE: BABINA, DIST: SAMBHAL

PREPARED BY

OCT: 2019

PRINCIPAL INVESTIGATOR

Prof. Alak Kumar Singh

Department of Food Technology

School of Chemical Technology

Harcourt Butler Technical University, Kanpur

Prof. Alak Kumar Singh
Head, Department of Food Technology
School of Chemical Technology,
H.B. Technical University, Kanpur-02

हरकोर्ट बटलर प्राविधिक विश्वविद्यालय
नवाबगंज, कानपुर–208002, उ0प्र0, (भारत)

Harcourt Butler Technical University
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Phone: +91-0512-2534001-5, Fax : +91-0512-2533812, Website : http://www.hbtu.ac.in E-mail : vc@hbtu.ac.in

Department of Food Technology

Ref. No. 609/FT/2019
Dated: 09.10.2019

To,

M/s Hilal Bone & Manure Mill

Village: Babina [illegible]

Sub: Submission of Design & Concept Evaluation report.

Dear Sir,

The submitted design & concept report for control of odour through proposed Activated Carbon Absorber. The conceptual design details as provided to the institute by the party itself seems good enough to control the odour nuisance in the unit.

As per the evident literature & past experiences for such natured industries the activated carbon absorbers are excellent to control all types of Ketonic & Aldehydic based odour generated from protein disintegration & else process.

Kindly acknowledge the receipt of the same.

Thanking you,

Faithfully Yours,

ALAK KUMAR SINGH
Digitally signed by ALAK KUMAR SINGH
Date: 2019.10.09 11:46:58 +05'30'

(Dr. Alak Kumar Singh)
Professor & Head,
Food Technology Department

Name of Unit

M/s Hilal Bone & Manure Mill, Village-Babina, Bahjoi Road, District Sambhal, Uttar Pradesh

Total Area

Total area occupied by is 6881 sq. m.

Process of Industry

Hoof and its processing at M/s. HB&MM

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Prof. Alok Kumar Singh
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School of Chemical Technology,
... Technical University, Kanpur-02

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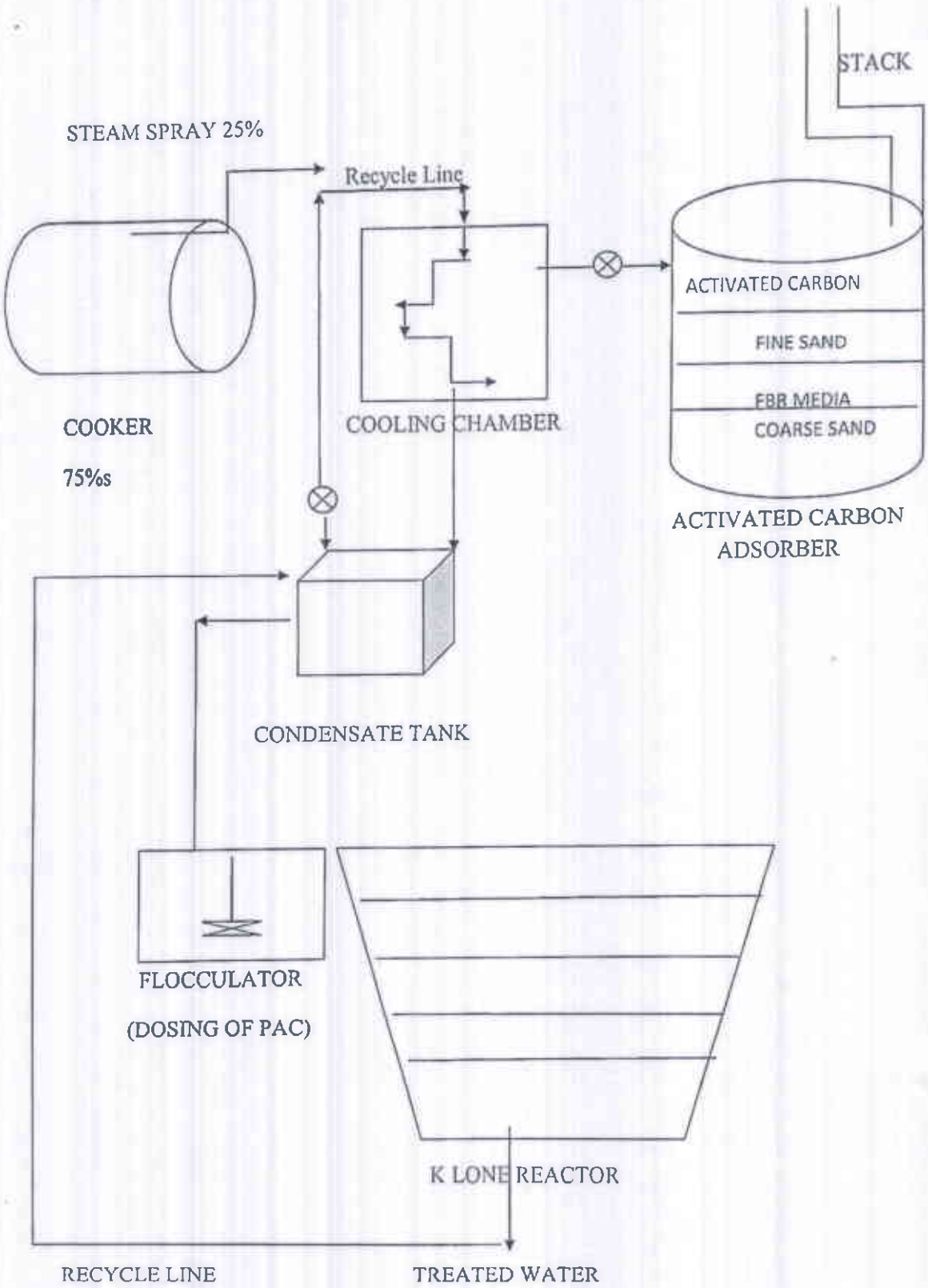

PROPOSED TREATMENT CONCEPT – FLOW LINE DIAGRAM

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H.B. Technical University, Kanpur-02

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SERVICE	ODOR CONTROL
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DISH DEPTH	12 Inch
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Prof. Ajay Kumar Singh
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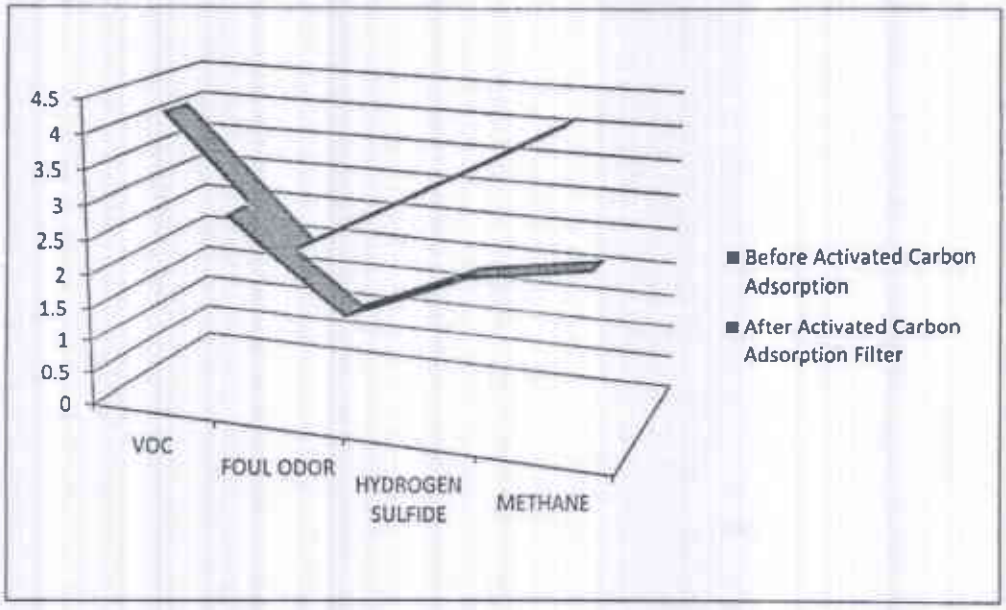
Dr. A.P.J. Abdul Kalam Technical University, Kanpur-02



GRAPHICAL VIEW – ASSUMPTIVE GRAPH OF BEFORE & AFTER INSTALLATION OF ACTIVATED CARBON ADSORBER FILTER

Prof. Alankumar Singh
Head, Department of Food Technology
School of Chemical Technology,
H.B. Technical University, Kanpur-02

SPECIFICATION OF ETP – 0.3 KLD

SERVICE	REMOVAL OF ORGANIC & INORGANIC IMPURITIES OF CONDENSATE WATER GENERATED AFTER CONDENSATION OF STEAM OF COOKER
TECHNICAL DETAILS	
NAME OF EQUIPMENTS	K LONE RECATOR (including Settling, Aeration & Filtration Chamber)
	COAGULATION CHAMBER (including Mixer Motor type arrangement & PAC Dosing Tank)
	BLOWER (0.75 HP Capacity for Mixing & Aeration of effluent)

POLLUTED WATER CHARACTERISTICS

Condensate water Generation & Characteristics for Designing of the K Lone Reactor	
Average Daily flow (Cum/day)	0.3
Effluent Characteristics:	
Ph	4.22
BOD (mg/l)	2816
COD (mg/l)	8000
Suspended solids (mg/l)	922

Treated water Characteristics	
BOD	Less than 30 mg/l
COD	Less than 250 mg/l
Suspended solids	Less than 50 mg/l
pH	6.5 – 8.5

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DISCRIPTION OF ETP

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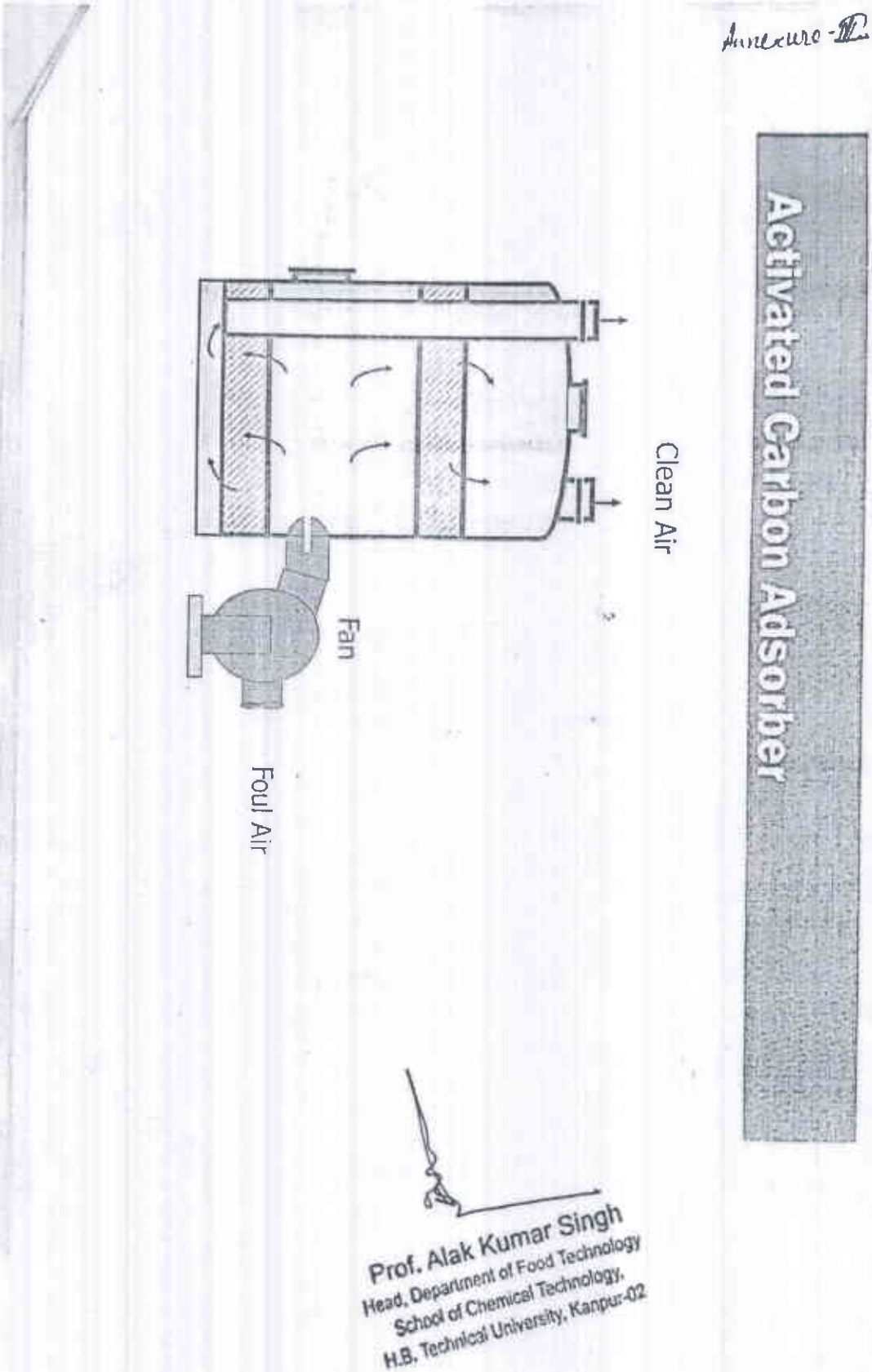
And the treated water is recycled to system for reuse in Condensation process of steam generated from cooker.

- MOC of K Lone Reactor – Mild Steel (MS)
- Sheet Thickness – 5 mm
- Coating – Epoxy Painted (Internal & External)
- Capacity of Blower – 0.75 HP
- Size of K Lone Reactor – 4*4*6 feet

Prof. Alak Kumar Singh
Head, Department of Food Technology
School of Chemical Technology,
U.P. Technical University, Kanpur

PHOTOGRAPHIC VIEW OF ACTIVATED CARBON ADSORBER FOR ODOUR CONTROL

Annexure - III



Prof. Alak Kumar Singh
Head, Department of Food Technology
School of Chemical Technology,
H.B. Technical University, Kanpur-02

GEOGREEN TESTING LABORATORY

NABL ACCREDITED LABORATORY CERTIFICATE No. TC8121
ISO : 9001:2015 & OHSAS 18001:2007 Certified Lab
Corporate Office : 403, Aiman Apartment, 29 Chandralok Colony Aliganj, Lucknow, U.P. 226024
Laboratory : CP-22, Alkapuri, Aliganj, Lucknow, Uttar Pradesh – 226024
Phone : +91-9161202020, 0522-2339001 Email : geogreen1l@gmail.com
Website : www.geogreen.in

AMBIENT ODOUR TEST REPORT

Report No.	Sample Code	Report Issue Date
GTL/HBMM/A/11/19	GTL/AO/1119/155	08/11/2019

SAMPLING DETAILS

1.	Name and Address of Customer:	M/s Hilal Bone & Manure Mill, Village – Dabama , District – Sambhal	
2.	Type of Sample :	Ambient Odour	
3.	Date of Sampling:- 01/11/2019 -02/11/2019	Sampling Period:-	8hr
4.	Sample Collected by:-	GTL TEAM	
5	Method of Sampling:-	GTL/OR/SP-08	

CLIMATICALLY CONDITON

Wind Direction:-	SW - NE
Avg. Humidity (%)	78
Avg. Ambient Temperature(°C)	29
Environmental Condition	Ambient Conditon
Wind Speed (Km/hr)	0.5

AMBIENT OROUR ANALYSIS RESULTS

S.No.	Location	Result OU_E/m^3	Remark
1	Near Main Gate	10.0	Very Weak
2	Inlet of Activated Carbon Adsorber	610.0	Strong
3	Outletof Activated Carbon Adsorber	12.0	Very Weak
4	Near Main Gate	15.0	Very Weak

NOTE:

1. The results given above are related to the tested sample, for various parameters, as observed at the time of sampling. The customer asked for the above tests only.
2. This test report will not be used for any publicity/ legal purpose.
3. The test samples will be disposed off after 15 days from the date of issue of test report, unless until specified by the customer.

Checked by

For Geogreen Testing Laboratory

Authority

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Phone : +91-9161202020, 0522-2339001 Email : geogreen11@gmail.com
Website : www.geogreen.in

WASTE WATER TEST REPORT

Sample Code No.	GTL/WS/735	Report No.	WS08112019-735
Sample Code Given By Client	None	Issue Date	08/11/2019
Sample Drawn by	GTL Team	Condition of the Sample	Ok
Sample Drawn on	01/11/2019	Nature of Sample	PETP Outlet
Sample Received on	02/11/2019	Test Duration	03/11/2019- 08/11/2019
Sampling Location	PETP Plant	Client's Name & Address	M/s Hilal Bone & Manure Mill, Village – Babama, District Sambhal
Sample Quantity	2 liter		

S. No.	Parameter Tested	Units	Result	Acceptable Limits	Test Method Used
1	pH	-	7.5	6.0-9.0	4500- H+ .B,23rd EDITION APHA-2017
2	BOD	(mg/l)	2.8	30	IS- 3025 (Part 44)
3	COD	(mg/l)	246	250	5220 B - 23rd EDITION APHA 2017
4	T.S.S.	(mg/l)	98.5	100	2540 D - 23rd EDITION APHA 2017

NOTE:

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For Geogreen Testing Laboratory

GEOGREEN TESTING LABORATORY C.M.

Conclusion-

As per technical analysis of Activated Carbon Adsorber & condensate Effluent treatment Plant installed by Hilal Bone & Manure Mills in village Babiana and considering the odour monitoring report it is to be calculate that efficacy of the complete odour control technology (Activated Carbon Adsorber) is79.87%.

This will perform efficient result if operated with proper operation and maintenance.

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Annexure - 4

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Phone : +91-9161202020, 0522-2339001 **Email :** geogreen.tl@gmail.com

Website : www.geogreen.in

AMBIENT ODOUR TEST REPORT

Report No.	Sample Code	Report Issue Date
GTL/HBMM/A/11/19	GTL/AO/1119/155	08/11/2019

SAMPLING DETAILS

1.	Name and Address of Customer:	M/s Hilal Bone & Manure Mill. Village – Babama , District – Sambhal	
2.	Type of Sample :	Ambient Odour	
3.	Date of Sampling:- 01/11/2019 -02/11/2019	Sampling Period:-	8hr
4.	Sample Collected by:-	GTL TEAM	
5.	Method of Sampling:-	GTL/QR/SP/08	

CLIMATICALLY CONDITON

Wind Direction:-	SW - NE
Avg. Humidity (%)	78
Avg. Ambient Temperature(°C)	29
Environmental Condition	Ambient Conditon
Wind Speed (Km/hr)	0.8

AMBIENT OROUR ANALYSIS RESULTS

S.No.	Location	Result OU_E/m^3	Remark
1	Near Main Gate	10.0	Very Weak
2	Inlet of Activated Carbon Adsorber	610.0	Strong
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Checked by

For Geogreen Testing Laboratory
Dr. V[illegible] Mishra
Quality Manager
(Authorised Signatory)

GEOGREEN TESTING LABORATORY Q.M.

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WASTE WATER TEST REPORT

Sample Code No.	GTL/WS/735	Report No.	WS08112019-735
Sample Code Given By Client	None	Issue Date	08/11/2019
Sample Drawn by	GTL Team	Condition of the Sample	Ok
Sample Drawn on	01/11/2019	Nature of Sample	PETP Outlet
Sample Received on	02/11/2019	Test Duration	03/11/2019- 08/11/2019
Sampling Location	PETP Plant	Client's Name & Address	M/s Hilal Bone & Manure Mill. Village – Babaina, District - Sambhal.
Sample Quantity	2 liter		

S. No.	Parameter Tested	Units	Result	Acceptable Limits	Test Method Used
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Checked by

For Geogreen Testing Laboratory

Q.M.