I G PETROCHEMICALS LIMITED

Date: 1st Dec 2023

The Director
Ministry of Environment, Forest & Climate Change,
Indira Paryavaran Bhavan, Aliganj, Jorbagh Road,
New Delhi -110 003

Sub: Submission of Six Monthly Environmental Clearance Compliance Status Report.
Ref.: Environmental clearance granted for expansion of petrochemical unit, by MoEF & CC vides clearance no. PA-V F. NO- J-11011/73/2016-IA-II(I) , Dated : 14th Mar 2022 & amendment EC F. No. J-11011/73/2016-IA-II(I) dated 6th Oct 2022.

Dear Sir,

With reference to the above we are submitting herewith our half yearly compliance status report as per condition stipulated in Environmental Clearance for period of **Apr 2023 – Sept 2023.** We hope the above is to your satisfaction.

Thanking You,
Yours faithfully

(Sagar Jadhav)
Chief - Manufacturing Operations

IG PETROCHEMICALS LIMITED ★ TALOJA MIDC

CC to:
1. The CCF, Regional Office, Western Region, Ministry of Environment, Forests & Climate Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur-440001
2. The Member Secretary, Maharashtra Pollution Control Board, 3rd floor, Kalpataru Point, Sion, Mumbai -400 022.
3. Central Pollution Control Board, Parivesh Bhavan, Opp. VNC Ward office No. 10, Subhanpura, Vadodara-390023.

Factory : Plot No.T-2, Taloja Industrial Area, MIDC, Taloja, Dist.: Raigad, Maharashtra - 410 208, India. Tel.: (91) 22-6847 9100 • Fax : (91) 22-2741 0192 • E-mail: taloja@igpetro.com
Corp. Office : 401-404, Raheja Centre, Free Press Journal Marg, 214, Nariman Point, Mumbai - 400 021. India. Tel.: (91) 22 - 4058 6100; Fax: (91) 22 - 2204 0747; E-mail: igpl@igpetro.com • Website : http//www.igpetro.com
Regd.Office : T-10, 3rd Floor, Jairam Complex, Mala, Neugi Nagar, Panaji, Goa-403 001, India Tel.: 0832 - 2434973 • Email : igplgoa@gmail.com • CIN : L51496GA1988PLC000915

o/c

I G PETROCHEMICALS LIMITED

Ref : IGPL/JKS/2023/EC/PA-V

Date: 29th May, 2023

The Director
Ministry of Environment, Forest & Climate Change,
Indira Paryavaran Bhavan, Aliganj, Jorbagh Road,
New Delhi – 110 003

Dear Sir,

Sub: Submission of Six-Monthly Environmental Clearance Compliance Report for the period October, 2022 to March, 2023

Ref.:1. Environmental clearances granted for expansion of petrochemical unit, by MOEF&CC vide EC Identification No. EC22A020MH142817, File No. J-11011/73/2016-IA-II(I), Date- 14/03/2022

2) EC AMENDMENT F. No. J-11011/73/2016-IA-II(I) dated -6th October, 2022

With reference to above, we are submitting herewith six-monthly compliance report for the period of October2022- March, 2023

Thanking You,

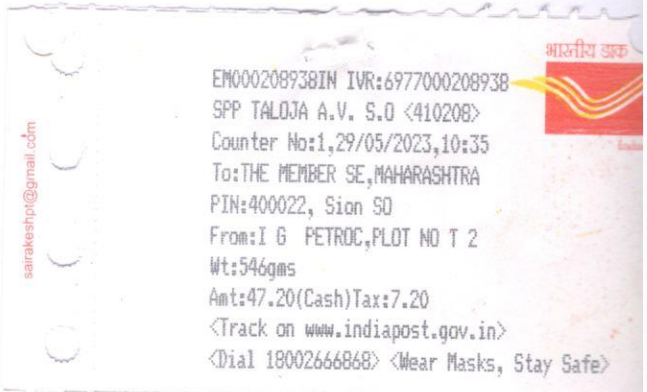
Yours faithfully,
FOR I. G. PETROCHEMICALS LTD

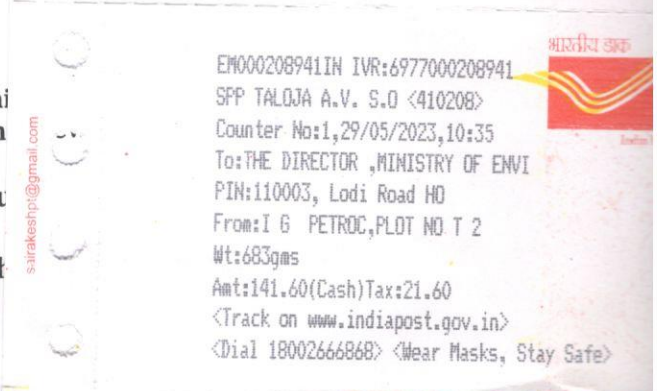
(J.K. SABOO)
EXECUTIVE DIRECTOR

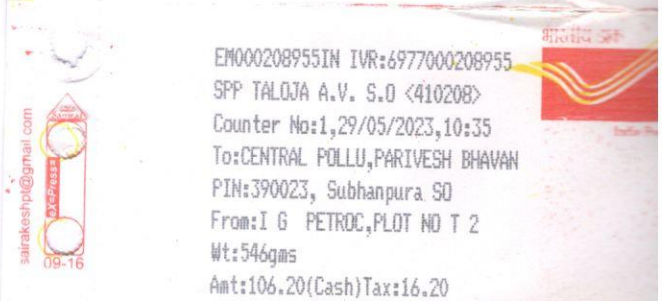
Encl : As above

CC to:

1. The CCF, Regional Office, Western Region, Mini
   Regional Office (WCZ), Ground Floor, East Win
   Nagpur- 440001
2. The Member Secretary, Maharashtra Pollu
   Point, Sion, Mumbai – 400 022.
3. Central Pollution Control Board, Parivesh
   Subhanpura, Vadodara- 390023.







Ref	**PA-V EC COMPLIANCE REPORT APR 2023-SEPT 2023** **ECNo. J-11011/73/2016-IA-II(I) Dated: 14th Mar, 2022.** **EC AMENDMENT F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022**
To	IG Petrochemicals Ltd, T-2, MIDC Taloja
For	Proposed expansion of Petrochemical based product manufacturing facility.
Status	The project is under advanced construction stage & is scheduled for commissioning in Dec 2023. Consent to establish -No: - Format1.0/CAC/UAN No.0000129419/CE/220700011,7 Dated 02/07/2022 ANNEXURE-7 Application for Consent to operation no MPCB-CONSENT- 0000170581 dated 11-05-2023 hasbeen uploaded

Proposal is for expansion of Petrochemical based product manufacturing facility at Plot No. T-2, V-45, V-11 to V-14, T-2/1, T-1, MIDC Taloja, Tehsil Panvel, District Raigad, Maharashtra by M/s I G Petrochemicals Ltd. (IGPL). Total land area is 1,13,282 m2. Industry has already developed Green belt in an area of 10% i.e. 11,327.6 m2 out of 1,13,282 m2 of area of the project.

This Environmental Clearance (and its subsequent amendment) is obtained for expansion of petrochemical based product manufacturing facility with total proposed capacity of 54950 TPA.

Consolidated Consent to Operate for existing Plant PA –I, PA – II, PA – III, PA-IV, Benzoic Acid & Maleic Anhydride plants is obtained.

Production details of existing unit as per listed below:

Product	As per Environmental Clearances	*As per Consent to Operate (2021)
Phthalic Anhydride	PAI+PAII90000 MTPA PAI+PA IIEXP 26110 MTPA PAIII 53000 MTPA PA IV 53000 MTPA	**222110 MT/A**
Benzoic Acid	2000 MT/A	**1500 MT/A**
Power (Exported to Grid)	2.5 MW	**2.5 MW**
****Maleic Anhydride**	9110 MTPA	**7660 MTPA**

Di ethyl phthalate (DEP) / Di methyl phthalate (DMP)	12,600 MTPA	**12600 MTPA**

***No:- Format1.0/CAC/UAN No.MPCBCONSENT-0000115836/CR/2207000116 Dated 02/07/2022 & valid up to 31/08/2026**

**** Maleic Anhydride manufacturing facility of Mysore Petro Chemicals Ltd located at plot T-1 was bought over by I G Petro Chemicals Ltd w. e.f. 1st April 2017.**

Proposed Additional capacities of Products as per EC No. J-11011/73/2016-IA-II(I) Dated: 14th Mar , 2022 & EC AMENDMENT F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022

Product	As per Environmental Clearance (MT/A)
Phthalic anhydride (PAN)(PA4 plant)	**53,000**
Benzoic acid (capacity increase of existing plant)	**500**
Maleic Anhydride (MA4 plant)	**1450**

Compliance to the conditions stipulated under Environmental Clearance granted by the Ministry of Environment & Forest, Government of India vide letter EC No. J-11011/73/2016-IA-II(I) Dated: 14th Mar , 2022 & EC AMENDMENT F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022 are given below.

The project activity is listed at 5 (f) in the Schedule of the EIA Notification, 2006 and is of 'B' Category being in the industrial area and shall not require Public Hearing. Based on the information provided by you, the Ministry of Environment and Forest hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and Generation condition

The project/activities are covered under category B of item 5 (e) Petroleum products and petrochemical based processing such as production of carbon black and electrode grade graphite (processes other than cracking & reformation and not covered under the complexes). Due to applicability of General Condition i. e. location of Matheran ESZ at a distance of 3.15 km, the project is appraised at Central Level by Expert Appraisal Committee (EAC).

A.	**Specific Conditions:**	
		COMPLIANCE

i.	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented. Industry shall install solar power of at least 10% of its total power requirement within plant/nearby villages as a part of EMP. **As per the EC amendment F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022, the condition is amended as** **Industry shall install solar power of at least 16% of the power requirement of proposed expansion project within plant**	• The power required for the expansion is 2750 KW. • Installation of 400 KW solar power generation unit is completed & is operational from December2022. Part of the generated power is being utilized in-house & excess power is being exported to power grid of MSEDCL. Power exported is 249.6-KWH/Day. Photos of unit attached **ANNEXURE-1**
ii.	Net fresh water requirement shall not exceed 5734 m3/day will be met from MIDC Taloja. Necessary permission in this regard shall be obtained from the concerned regulatory authority. The project proponent will treat and reuse the treated water within the factory and no waste or treated water shall be discharged outside the premises. **As per the EC amendment F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022, the condition is amended as** **Industry shall restrict CETP discharge to existing 220 CMD and no additional effluent shall be discharged from the proposed expansion project. Additional treated effluent from the proposed expansion shall be treated and recycled completely.**	Water consumption post expansion will be kept within 5734 m3/day. Existing CTO permitted effluent discharge to CETP is 220 cmd. The same will be maintained post expansion. The effluent generated from expansion will be treated in ETP and recycled.
iii.	For use of furnace oil as fuel for Hot oil heater, CPCB guideline shall be followed coupled with adequate measures such as installation of Cyclone Dust Separator and alkali Scrubber with adequate stack height shall be taken to mitigate emissions.	Complied. Existing heaters have been provided with alkali scrubber and cyclone separator. The same is provided in new plant

iv.	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.	Water audit has been completed. Audit recommendations are implemented . Audit copy attached as **ANNEXURE-8**.

v.	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Complied
vi.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Complied
vii.	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry. **As per the EC amendment F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022, the condition is amended as Process organic residue (distillation residues from Phthalic Anhydride and Maleic Anhydride process) shall be used as fuel in Thermic Fluid Heaters. Spent carbon and process organic residue from tank cleaning, if any, shall be sent to, CHWTSDF**	Complied in existing plants and will be complied in expansion project.
viii.	Regular VOC monitoring shall be done at vulnerable points.	Will be Complied.
ix	The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.	Not applicable
x	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Will be Complied

xi	The company shall undertake waste minimization measures as below: (a) Metering and control of quantities of active ingredients to minimize waste. (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapor recovery system. (f) Use of high-pressure hoses for equipment cleaning etc. to reduce wastewater generation.	The existing plant has adequate systems installed. The same are incorporated in expansion plant.
xii	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department. **As per the EC amendment F. No. J-11011/73/2016-IA-II(I) Dated -6th October, 2022, the condition is amended as** **Industry will develop 26% (29064.63 m_2) of the total plot area as greenbelt within the plant premises and 10% additional green belt shall be developed outside plant premises adjacent to the plant within MIDC Industrial area.**	The green belt outside the plant premises is developed. The photos are attached as **ANNEXURE-9**.

xiii	PP proposed to allocate Rs. 3.0 Crores which shall be equally spent on improving infrastructure of public schools and installation of solar power in nearby villages in consultation with District Magistrate. All the proposed activities under CER shall be completed before commencement of operations of the plant.	The project has been completed in the month of May – 2023 and cost incurred is Rs 3 crores as per the EC condition. Details attached as per **ANNEXURE-2.**
xiv	The project proponent shall set up a skill development center /provide skill development training to village people.	we have conducted the 'Skill Development for Villagers' at Village Ghot Camp, Taloja on 30th april2023. Photos of the same are attached as **ANNEXURE-11.**
xv	A separate Environmental Management Cell (having qualified person with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Qualified staff with post-graduation in Environmental Science / Environmental Engineering is appointed for environmental management activities.
Xvi	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	Yes, will be Complied with- entire plant will be covered by a hydrant system, which will be provided with separate fire water pump and emergency pumps (diesel operated) as per existing unit. Fire extinguishers will be kept in various parts of the plant depending upon type of fire hazard likely.

Xvii	Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	Yes, we have installed continuous online (24*7) monitoring system measurement for stacks emission& effluent. We have existing online continuous emission monitoring system connected to CPCB / MPCB Server and data is uploaded on company's website regularly. The same system is being extended in the upcoming expanded plants.
xviii	PP to set up occupational health Centre for surveillance of the worker's health within and outside the plant on a regular basis. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.	Yes, it is carried out regularly in existing plants. Trained Male nurse is provided in all three shifts. We have appointed fulltimeDoctor and have tie up with local hospitals toattend to medical emergencies. Company has well equipped Occupational Health center (OHC) with one bed located in its admin building. Company has a program of pre and post (periodic) medical checkups whereby all workers in hazardous operations are tested twice a year. The records are maintained in form-7 as per factories act.
xix	The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.	Complied. It is part of existing CTO issued by SPCB. The same will be complied for the proposed expansion.
xx	Recommendations of mitigation measures from possible accident shall be implemented based on advanced risk Assessment studies conducted for worst case scenarios using latest techniques.	Hazop has been conducted during detailed engineering and its recommendations have been incorporated in the plant design.

B.	**General Conditions:**	
i.	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protectionmeasures required, if any.	Agreed
ii.	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	Provided in existing plant. Same will be implemented for the proposed expansion.
iii.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Agreed. Noise levels are measured periodically through MOEF&CC approved lab. Acoustic enclosure will be provided to requisite machinery.
iv.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Company is undertaking various community welfare measure for improvement of the environment. CER activity has been completed as given in **ANNEXURE-2.**

v.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	Yes, Budget for Environment Protection as stipulated in the EIA has been used for environmental protection in proposed expansion project.
vi.	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	Yes, we have submitted EC copy to Panvel Municipal Corporation which is local body. Copy of the same is attached **ANNEXURE--3**
vii.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (Both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six-monthly compliance status report shall be posted on the website of the company.	Will be complied as per existing compliances for earlier ECs
viii.	The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Yes, it is submitted regularly for existing plants and same practice will be adopted in expansion plant.

ix.	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry and at https://parivesh.nic.in/. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	Advertise has been published in local newspaper Navshakti & Free Press Journal dated 16th March -2022 **ANNEXURE-4**
x.	The project authorities shall inform the Regional Office as well as the Ministry, thedate of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Will be complied.
xi.	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Agreed
	ADDITIONAL CONDITIONS GIVEN IN EC AMENDMENT	
i	Industry shall obtain prior approval from SPCB for discharge of effluent to CETP. Industry shall discharge 220 KLPD of treated effluent to CETP after achieving the dischargenorms specified by the SPCB. Online monitoring system shall be installed and connected to the CPCB and SPCB server	The existing CTO (**ANNEXURE-5**) has permitted treated effluent discharge of 220 cmd to Taloja CETP. The same will be continued post expansion. OCEMS and RTDMS is installed & is connected to CPCB and MPCB servers.
ii	Air emissions from Thermic Fluid Heaters shall be monitored and emissionlevels shall not exceed the prescribed limit	Thermic fluid heaters are provided with cyclone separators followed by wet scrubber (alkali scrubber). The stack is connected to OCEMS. The emission levels are maintained well within the prescribed limits.
iii	For outside greenbelt development, PP shall take land for long term lease of 25 years	Communication in this respect is done with MIDC. **ANNEXURE-6.**

	And greenbelt shall be maintainedproperly.	
iv	PP shall sensitize and create awareness among the people working within the project area as well as its surrounding area on the ban of Single Use Plastic in order to ensure the compliance of Notification published by MOEFCC on 12thAugust, 2021. A report along with photographs on the measures taken shall also be included in the six-monthly compliance report being submitted to concerned authority.	The awareness program was conducted on 26th February in three nearby villages Pale, Kolwadi & Vallap. The details are attached as **ANNEXURE-10**

INDEX

Annexure - I


Shot on OnePlus
By Podar


Shot on OnePlus
By Pudari


Shot on OnePlus
By Pudari


Shot on OnePlus
By Pudari

ANNEXURE - II

I G PETROCHEMICALS LIMITED

DETAILS OF EXPENDITURE ON ENVIRONMENT SOCIAL RESPONSIBILITY-PA5

PERIOD 01.04.2023 TO 30.09.2023

Sr.No 56

SR. NO.	PAID TO	AMOUNT	Voucher No.	Voucher Date
A	**ORIEARTH NATURE FOUNDATION** IGPL and ONF agreed to undertake a CER initiative of solar installation and school infrastructure at identified tribal villages under Group Gram Panchayat of Maldunge, Panvel, Raigad. Rs 27500000 work completed till 31.03.23 &			
I	Balance work completed till 31.05.23 Rs 2501500	30,001,500.00	PV-TAL-PRJ/232406006	6/9/2023
II	Skill development training for village Ghot camp	250,000.00	PV-TAL-PRJ/232406007	6/9/2023
III	Prevention of single use plastic.	250,000.00	PV-TAL-PRJ/232406008	6/8/2023
IV	For CER project inauguration event at Dhamani dated 27/05/23	225,000.00	PV-TAL-PRJ/232408003	8/11/2023
B	**TIME PRINTS**			
I	FOR STICKER, BANNER , CERTIFICATE CER INITIATIVE ACTIVITY	14,320.00	PV-TAL/2324070183	7/31/2023
	TOTAL	30,740,820.00		

Annexure - III

I G PETROCHEMICALS LIMITED

Date : 17.11.2022

Ref : IGPL/HS/2022/PA-V

Panvel Municipal Corporation,
Panvel,
Dist. Raigad : 410206

Dear Sir,

We have received the Environment Clearance from Ministry of Environment, Forest & Climate Change (MoEFCC), New Delhi vide File No. J-11011/73/2016-IA-II(I) dtd. 14.03.2022 and its amendment dtd. 06.10.2022 for our proposed expansion of project named as PA-V and as directed by them, we are enclosing herewith copy of the same for your information and record.

Please acknowledge having received the same.

Thanking you,

Yours faithfully,
For I G PETROCHEMICALS LIMITED

(HARIHARAN S)
DY. GENERAL MANAGER (CORP-AFFAIRS)

Encl : As above

9/11/22

लेखनिक
आवक-जावक
पनवेल महानगरपालिका,
रायगड.

Factory : Plot No.T-2, Taloja Industrial Area, MIDC, Taloja, Dist.: Raigad, Maharashtra - 410 208, India. Tel.: (91) 22-6847 9100 • Fax : (91) 22-2741 0192 • E-mail: taloja@igpetro.com
Corp. Office : 401-404, Raheja Centre, Free Press Journal Marg, 214, Nariman Point, Mumbai - 400 021, India. Tel.: (91) 22 - 4058 6100; Fax: (91) 22 - 2204 0747; E-mail: igpl@igpetro.com • Website : http://www.igpetro.com
Regd.Office : T-10, 3rd Floor, Jairam Complex, Mala, Neugi Nagar, Panaji, Goa-403 001, India Tel.: 0832 - 2434673 • Email : igplgoa@gmail.com • CIN : L51496GA1988PLC000915

Annexure - IV

कब्जा सूचना (स्थावर मिळकतीकरिता) (नियम ८(१))

ज्याअर्थी, निम्नस्वाक्षरीकारांनी बँक ऑफ महाराष्ट्रचे प्राधिकृत अधिकारी म्हणून सिक्युरिटायझेशन ॲण्ड रिकन्स्ट्रक्शन ऑफ फायनान्शिअल असेट्स ॲण्ड एन्फोर्समेंट ऑफ सिक्युरिटी इंटरेस्ट ॲक्ट, २००२ (५४ सन २००२) अन्वये आणि कलम १३(१२) सहवाचता सिक्युरिटी इंटरेस्ट (एन्फोर्समेंट) रूल्स, २००२ च्या नियम ३ अन्वये प्रदान केलेल्या अधिकारांचा वापर करून दिनांक ११/०७/२०१६ रोजी मागणी सूचना जारी करून कर्जदार मे. पालवेश मेटल एंटरप्राईजेस, श्री. पवन रूपचन्द जैन (प्रोप्रायटर) आणि श्रीम. मनिषा पवन जैन (हमीदार) यांना सूचनेत नमूद रक्कम रु. ३,१८,५८,६८२.८४ पै. (रुपये तीन कोटी अठरा लाख अठ्ठावन्न हजार सहाशे ब्याऐंशी आणि चौऱ्याऐंशी पैसे मात्र) अधिक ११/०७/२०१६ पासून परिणामांसह द.सा. १२.९५ दराने त्यावरील व्याज वजा वसुली जर काही असल्यास या रकमेची परतफेड सदर सूचना प्राप्त झाल्याच्या तारखेपासून ६० दिवसांत करण्यास सांगितले होते.

कर्जदार यांनी सदर रकमेचा भरणा करण्यास कसूर केली असल्याने कर्जदार/हमीदार आणि सर्वसामान्य जनतेला सूचना याद्वारे देण्यात येत आहे की, येथे खालील नमूद मिळकतीचा प्रत्यक्ष कब्जा सरफैसी ॲक्टच्या कलम १४ च्या तरतुदींअंतर्गत जिल्हा दंडाधिकाऱ्यांच्या निहित शक्तींच्या अटींमधील सिक्युरिटायझेशन अर्ज क्र. ३२४/२०२० मधील सन्माननीय अतिरिक्त जिल्हा दंडाधिकारी, ठाणे यांच्याद्वारे पारित दिनांक २९/०७/२०२१ रोजीच्या आदेशानुसार अप्पर मंडळ अधिकारी, भिवंडी, जिल्हा ठाणे यांनी घेतला आणि सदर ॲक्टचे कलम १३ चे उप-कलम (४) सहवाचता सिक्युरिटी इंटरेस्ट (एन्फोर्समेंट) रूल्स, २००२ च्या नियम ८ अन्वये बँक ऑफ महाराष्ट्रच्या प्राधिकृत अधिकाऱ्यांकडे १० मार्च, २०२२ रोजी सुपूर्द केला.

विशेषत: कर्जदार/हमीदार आणि सर्वसामान्य जनतेला याद्वारे इशारा देण्यात येत आहे की, त्यांनी सदर मिळकतीसह देवघेवीचा व्यवहार करू नये आणि मिळकतीसह केलेला देवघेवीचा कोणताही व्यवहार हा बँक ऑफ महाराष्ट्रच्या वरील नमूद रक्कम आणि त्यावरील व्याजाच्या प्रभाराच्या अधीन राहील.

तारण मत्तांच्या विमोचनाकरिता उपलब्ध वेळेत ॲक्टचे कलम १३ चे उप-कलम ८ च्या तरतुदीनुसार कर्जदार/हमीदारांचे लक्ष वेधण्यात येत आहे.

स्थावर मिळकतीचे वर्णन

गाळा क्र. जी-३ बी, इमारत क्र. ए-३, आर्या कंपाऊंड, गाव राहनाळ, तालुका भिवंडी, ठाणे.
गाळा क्र. जी-३ आणि जी-४, इमारत क्र. ए-३, आर्या कंपाऊंड, गाव राहनाळ, तालुका भिवंडी, ठाणे.
गाळा क्र. जी-५, इमारत क्र. ए-३, आर्या कंपाऊंड, गाव राहनाळ, तालुका भिवंडी, ठाणे.
गाळा क्र. जी-६, इमारत क्र. बी-३, आर्या कंपाऊंड, गाव राहनाळ, तालुका भिवंडी, ठाणे.

सही/-
प्राधिकृत अधिकारी आणि मुख्य व्यवस्थापक
बँक ऑफ महाराष्ट्र, ॲसेट रिकव्हरी शाखा, मुंबई.

दिनांक: १०/०३/२०२२
ठिकाण: भिवंडी

जाहीर सूचना

प्लॉट क्रमांक टी-२, बी-४५, बी-११ ते १४, टी-२/१, टी-१, तळोजा एम.आय.डी.सी., जिल्हा रायगड, महाराष्ट्र येथील आय.जी. पेट्रोकेमिकल लि. द्वारा पेट्रोकेमिकल उत्पादन निर्मिती विस्ताराच्या प्रकल्पाला पर्यावरण, वन आणि हवामान बदल मंत्रालय, भारत सरकार (MoEF & CC), ओळख पत्र क्र. EC22A020MH142817, फाइल क्र. J-11011/73/2016-IA-II(I), दिनांक १४ मार्च २०२२ द्वारे मान्यता दिली आहे.

सदर पर्यावरणीय समंती पत्राची प्रत महाराष्ट्र प्रदूषण नियंत्रण मंडळाकडे तसेच मंत्रालयाच्या पर्यावरणीय विभागाच्या https://parivesh.nic.in या संकेत स्थळावर उपलब्ध आहे.

स्थळ : मुंबई
दिनांक :१६/०३/२०२२

[illegible]

सही/-
उपसंचालक भूमि अभिलेख, कोकण प्रदेश मुंबई

जाहीर सूचना

ICICI Bank — शाखा कार्यालय: आयसीआयसीआय बँक लि., कार्यालय क्रमांक २०१-बी, २ रा मजला, रोड क्र. १, प्लॉट क्र- बी३, वायफाय आयटी पार्क, वागळे इंडस्ट्रियल इस्टेट, ठाणे, महाराष्ट्र-४००६०४.

खालील कर्जदारांनी बँकेकडून त्यांनी घेतलेल्या कर्ज सुविधेची मुद्दल आणि व्याजाचा परतावा करण्यात कसूर केलेली आहे आणि कर्ज नॉन परफॉर्मिंग ॲसेट्स (एनपीए) म्हणून वर्गीकृत झाले आहे. खालील नमूद तारखेची सूचना सिक्युरिटायझेशन ॲन्ड रिकन्स्ट्रक्शन ऑफ फायनान्शियल ॲसेटस् ॲन्ड एन्फोर्समेंट ऑफ सिक्युरिटी इंटरेस्ट ॲक्ट, २००२ च्या कलम १३(२) अन्वये त्यांनी दिलेल्या त्यांच्या शेवटच्या ज्ञात पत्त्यावर त्यांना जारी करण्यात आली, तथापि ती न बजावता परत आली म्हणुन त्यांना सदर जाहीर सूचनेद्वारे कळविण्यात येत आहे.

अ. क्र.	कर्जदार/सह-कर्जदार/ हमीदाराचे नाव/ (कर्ज खाते क्रमांक) आणि पत्ता	तारण मत्तेच्या मिळकतीचा पत्ता/ अंमलबजावणीयोग्य मत्ता	सूचना पाठविल्याची तारीख/ सूचनेच्या तारखेस थकबाकी	एनपीए तारीख
१.	केदार श्रीकृष्ण कासार/ कांचन केदार कासार - सी-१२, स्वानंद सोसायटी, लेन क्र. ३, सहकार नगर क्र. २, शेवटच्या बस स्टॉपच्या पुढे, सहजीवन नगर, पुणे, महाराष्ट्र ४११००९/ एलबीएनएएस००००४९४८९५४	कार्यालय क्र. एफ-३, १ला मजला, टाईम स्केअर, प्लॉट क्र. १, अंतिम प्लॉट क्र. २७१, स. क्र. ४२४/३, हॉटेल मथुराच्या पुढे, भारत पेट्रोल पंप जवळ, द्वारका, जि. नाशिक, महाराष्ट्र ४२२००१	फेब्रुवारी ०९, २०२२/ रु. ७५,४९,०४५/-	३०/०९/ २०२१
२.	रविंद्र शंकर देसाई/ तृप्ती रविंद्र देसाई - बी-१/१०२, आनंद सागर एनक्लेव, आधारवाडी जेल रोड, कल्याण (पश्चिम), ठाणे, महाराष्ट्र/ एलबीएमयुएम००००४९६५९८८	फ्लॅट क्र. १५०३, १५वा मजला, श्री विंग, भगवती ग्रीन्स - III, प्लॉट क्र. ३, सेक्टर २३, गाव खारघर, नवी मुंबई, जि. रायगड, महाराष्ट्र ४१०२१०	फेब्रुवारी २५, २०२२/ रु. १,४२,१८,८०९/-	३१/०९/ २०२१
३.	अनिरुद्ध संतोष गांधी/ नेहा अनिरुद्ध गांधी - फ्लॅट क्र. १०४, १वा मजला, रश्मी हाईट्स सीएचएसएल, दयाभाई पटेल रोड, नगरपालिका हॉस्पिटल समोर, मालाड (पूर्व), मुंबई, महाराष्ट्र ४०००९७/	आय.टी. युनिट क्र. ४०७, ४था मजला, जसवंती अलाईड बिझनेस सेंटर, सी विंग, रामचंद्र लेन, एक्स्टेंशन रोड, मालाड इंडस्ट्रियल इस्टेट जवळ, कांचपाडा, गाव वळनाई, मालाड (पश्चिम), मुंबई, महाराष्ट्र ४०००६४	फेब्रुवारी २२, २०२२/ रु. १,०९,०१,८३५/-	३१/०१/ २०२१

PUBLIC NOTICE

PLEASE TAKE NOTICE that MR. RAO PRAKASH VASUDEVA and MRS. SHYAMALA HERLE, are the legal owners of FLAT NO. 602 admeasuring 757 sq. ft. Built Up Area on the 6TH FLOOR, of the building known as "KRISHNA" in "KRISHNA GODAVARI CO-OPERATIVE HOUSING SOCIETY LIMITED" situated at SUCHIDHAM, FILM CITY ROAD, MALAD EAST, MUMBAI 400097, constructed on all that piece or parcel of land bearing CTS No. 156 of Village : DINDOSHI, Taluka : BORIVALI in Mumbai suburban district (hereinafter referred to as "the said flat") along with total five shares of face value of Rs. 50/- each issued by KRISHNA GODAVARI CO-OPERATIVE HOUSING SOCIETY LIMITED, ("the said society") bearing Distinctive Nos. 91 to 95 (both inclusive), vide Share Certificate No. 19 ("the said shares").

Whereas MR. P. V. RAO was the owner of the said flat, which was allotted to him by M/S. RITA ENTERPRISES.

Whereas MR. P. V. RAO holding 100% undivided share of the said flat expired on 25TH MARCH 1997 and MRS. RADHA V. RAO (wife and sole nominee of MR. P. V. RAO) became the legal owner of the said flat MRS. RADHA V. RAO expired on 12TH JUNE 2021 leaving behind her only son MR. RAO PRAKASH VASUDEVA and her only daughter MRS. SHYAMALA HERLE as her only nominees as well as the only legal heirs for the said flat.

Now my clients MR. RAO PRAKASH VASUDEVA and MRS. SHYAMALA HERLE now

मंगलम ड्रग्स ॲण्ड ऑर्गेनिक्स लिमिटेड

नोंदणीकृत कार्यालय: ३रा मजला, [illegible], मुंबई - ४०० ००१. CIN: L24230MH1972PLC116413

टपाल मतदान आणि दूरस्थ ई-मतदानाबाबतच्या माहितीची सूचना

सभासदांना येथे सूचित करण्यात येते की, कंपनी कायदा २०१३ (ॲक्ट) च्या कलम १०८, ११० आणि इतर लागू तरतुदीनुसार तसेच कंपनी (व्यवस्थापन आणि प्रशासन) नियम २०१४ (नियम) मधील नियम २० आणि २२ तसेच कॉर्पोरेट व्यवहार मंत्रालयाचे (एमसीए) ८ एप्रिल २०२० चे सर्वसाधारण परिपत्रक क्रमांक १४/२०२०, १३ एप्रिल २०२० चे सर्वसाधारण परिपत्रक क्रमांक १७/२०२०, १५ जून २०२० चे सर्वसाधारण परिपत्रक क्रमांक २२/२०२०, २८ सप्टेंबर २०२० चे सर्वसाधारण परिपत्रक क्रमांक ३३/२०२०, ३१ डिसेंबर २०२० चे सर्वसाधारण परिपत्रक क्रमांक ३९/२०२०, २३ जून २०२१ चे सर्वसाधारण परिपत्रक क्रमांक १०/२०२१ आणि ८ डिसेंबर २०२१ चे सर्वसाधारण परिपत्रक क्रमांक २०/२०२१ (यापुढे एकत्रित उल्लेख एमसीए परिपत्रके असा) तसेच सेबी (LODR) नियमावली २०१५ चे नियमन ४४ (काही वैधानिक फेरफार किंवा त्यामध्ये सध्या अंमलात असलेल्या पुनरअधिनियमांसह) यांच्या एकत्रित वाचनासह, १० मार्च २०२२ च्या टपाल मतदान सूचनेत नमूद केल्याप्रमाणे, कंपनीच्या सभासदांची केवळ दूरस्थ ई-मतदानाच्या माध्यमातून टपाल मतदानाआधारे खालील ठरावासंदर्भात मान्यता घेण्यात येत आहे.

1. श्री राकेश के. मिलवानी (डीआयएन: ०१११५४६९) यांची कंपनीच्या गैर-कार्यकारी गैर-स्वतंत्र संचालकपदी नियुक्ती करणे

टपाल मतदानाची सूचना स्पष्टीकरणात्मक विधानासह कंपनीच्या www.mangalamdrugs.com, नॅशनल सिक्युरिटीज डिपॉझिटरी लिमिटेडच्या ('NSDL) www.evoting.nsdl.com, बीएसई लिमिटेडच्या www.bseindia.com तसेच नॅशनल स्टॉक एक्सचेंज ऑफ इंडिया लिमिटेडच्या (NSE) www.nseindia.com या संकेतस्थळावर उपलब्ध आहे.

सदस्यांना याद्वारे कळविण्यात येते की:

१. कंपनीने मंगळवार, १५ मार्च २०२२ रोजी सभासदांना ई-मेलद्वारे सूचना पाठवण्याचे काम पूर्ण केलेले आहे.

२. दूरस्थ ई-मतदान सुविधेचा लाभ घेण्यासाठी सदस्यांच्या पात्रता पडताळणीची अंतिम मुदत (कट-ऑफ) शुक्रवार, ११ मार्च, २०२२ पर्यंत आहे. ज्या सदस्याचे नाव कंपनीच्या सभासद नोंदणीपुस्तकामध्ये किंवा डिपॉझिटरीजद्वारे सांभाळल्या जाणाऱ्या लाभार्थी मालकांच्या रजिस्टरमध्ये अंतिम मुदतीच्या तारखेपर्यंत (कट-ऑफ) नोंदवलेले असेल तेच सदस्य दूरस्थ ई-मतदान सुविधेचा लाभ घेण्यास पात्र राहतील. कट-ऑफ तारखेपर्यंत सभासद नसलेल्या व्यक्तीने ही सूचना केवळ त्याच्या माहितीस्तव असल्याचे समजावे.

३. एमसीए परिपत्रकांच्या आवश्यकतांचे पालन करून, सूचनेची छापील प्रत, टपाल मतदान पत्रिका आणि उत्तरासाठीचा प्री-पेड लिफाफा सदर टपाल मतदानासाठी सभासदांना पाठवण्यात आलेला नाही. सभासदांनी त्यांचा होकार अथवा नकार हा केवळ दूरस्थ ई-मतदान पध्दतीतूनच कळवायचा आहे. सभासदांना दूरस्थ ई-मतदान सुविधा प्रदान करण्याच्या उद्देशाने कंपनीने नॅशनल सिक्युरिटीज डिपॉझिटरी लिमिटेड ("NSDL") ची सेवा घेताना त्यांची या कार्यासाठी एजन्सी म्हणून नियुक्ती केलेली आहे.

४. दूरस्थ ई-मतदानाच्या प्रक्रियेची तपशीलवार पध्दत/ विविध सूचना कंपनीच्या नोटीसमध्ये नमूद करण्यात आलेल्या असून अद्यापपर्यंत ज्या सदस्यांनी त्यांचे ईमेल पत्ते नोंदणीकृत केलेले नाहीत ते त्यांच्या ईमेल पत्त्याची नोंदणी कशा पध्दतीने करू शकतात आणि/किंवा त्यांचे मत कसे देऊ शकतात याचीही

CHANGED MY NAME FROM MUSHTAQ BARBARY TO MUSHTAQ KARBARI AS PER TS. CL-247 B

ANGED MY NAME FROM JAVED AIKH TO JAVED NASIR SHAIKH FIDAVIT. CL-247 C

HANGED MY NAME FROM BDUL RASHID ANSARI TO DUL RASHID ANSARI AS PER TS. CL-247 D

HANGED MY NAME FROM R PARSOTAMBHAI PATEL TO PURUSHOTTAM PATEL AS VIT. CL-247 E

ANGED MY MIDDLE NAME VIL KIRITKUMAR PATEL TO RITBHAI PATEL AS PER S. CL-247 F

GED MY NAME FROM LYBIA YBIA JOYCE LANGLY AS PER . CL-247 G

AMIT GUPTA WHO WAS KNOWN AS MAUSAMI WAL AND RUPALI DILIP ND RUPALI AMIT KUMAR ED MY NAME TO RUPALI VIDE AFFIDAVIT NO. ZY 14/03/2022 CL-276

T KUMAR HAVE CHANGED AARAV AMIT GUPTA VIDE O. ZY 544073 DATED CL-277

AR HAVE CHANGED MY T VIRENDRA GUPTA VIDE O. ZY 544071 DATED CL-278

NGE MY NAME FROM NT JOG TO MUKUND AS PER DOCUMENTS CL-353

MY NAME FROM PRATAP A TO PRATAP NARSHI AS PER DOCUMENTS CL-353 A

D MY NAME FROM ARTI R. TO AARTI PRATAP AS PER DOCUMENTS CL-353 B

ED MY NAME FROM P MITTIA. NEW NAME- P BHANUSHALI. AS PER CL-353 C

D MY NAME FROM SHIBHAI PATEL TO RSHIBHPATEL AS PER CL-356 A

MY NAME FROM UMAR SHETH TO SHETH AS PER CL-535

NAME FROM NEEV

PUBLIC NOTICE

Notice is hereby given that our client intends to purchase a Shop on ownership basis being Shop No.4 on the Ground Floor in Borivali Gokul CHSL, situated at CTS NO.506 of Village-Kanheri, Taluka-Borivali Situated at M.G. Road, Borivali (East), Mumbai-400066. Our client is investigating the title of Mr. Jayeshkumar Jethmal Jain and Mrs. Ranjan Jayesh Jain and therefore invites objections and claims from general public at large and person/s having rights, title, interest share or claim or any encumbrances by way of sale, lease, charge, will, gift, exchange, mortgage, lien or in any other manner whatsoever in the aforesaid Shop may record their objection with relevant documents to that effect to the undersigned within a period of 7 (seven) days from the date of this publication. If nobody raises any objection within stipulated period, the claim, if any, deemed to have been waived in respect of the aforesaid property.

Date: 16.03.2022

(Samarth Associates)
101/A, Shree Tower,
above Link View Hotel.
Near Don Basco High School,
New Link Road,
Borivali (West), Mumbai-400092

PUBLIC NOTICE

Notice is hereby given to the public that, my clients Mr. Kanjibhai Jagabhai Der is lawful owner of Flat No. A-201, Admeasuring 570 Sq. Ft. equivalent to 52.95Sq. Mtrs., 2nd Floor, Riddhi Co-Operative Housing Society Ltd. situated at CTS No. 388, Plot no. 494, Chikuwadi, Shimpoli Village, Borivali (West), Mumbai - 400092 ("Flat") and his late father Jagabhai Danabhai Der name was appeared as bonafide member of Riddhi Co-Operative Housing Society Ltd. ("Society"). The said Society registered under the Maharashtra Co-operative Societies Act, 1960 bearing Registration No. BOM/WR/HSG/TC/10625/99-2000 Dated 26/11/1999.

NOTICE

Notice is hereby given that MRS. VIJAYALAXMI DAYARAM AHUJA (since deceased) and MRS. DEEPA MANOHAR ASRANI were the members of the Charkop Silver Co-operative Society Ltd., and as such members, we were jointly holding Flat No.B/702 and B/703 each admeasuring 37.62 square metres carpet area on the 7th Floor of the B-Wing of the Society's Building "Silver" situated at Plot No.6, RDP-5, Charkop, Kandivali (West), Mumbai – 400 067 alongwith the shares of the Society ("the Premises").

Mrs. Vijayalaxmi Dayaram Ahuja expired on 28th January, 2017 leaving behind legal heirs who have all executed Affidavits confirming that they have no right, title and interest in the Premises and confirming that the 50% right of Mrs. Vijayalaxmi Dayaram Ahuja is to be transferred in the sole name of Mrs. Deepa Manohar Asrani.

If any person has any objection for transfer of the Share Certificate No.43 and 44 and/or any claim thereto he/she is required to make the same known to the undersigned at 5th Floor, Durga Chambers, 40, Waterfield Road, Bandra (West), Mumbai – 400050, within 14 days from the date hereof (alongwith sufficient documentary evidence), otherwise it will be presumed that there do not exist any claims and the same, if any, will be considered as waived or abandoned and pursuant to which the Society will proceed with transfer of the Share Certificates in favour of Mrs. Deepa Manohar Asrani, without reference to any such claims.

MUMBAI
DATED THIS 16th DAY OF MARCH, 2022.

Sd/-
Pranjal Dave
Gradea Sai
Advocates & Solicitors

PUBLIC NOTICE

This is to inform to all that the project for the development of the lands bearing Old Survey No. 236, New Survey No. 30, Hissa No. 2,3,4,6,7,8,12, and Old Survey No. 242, New Survey No. 33, Hissa No. 1, and Old Survey No.235, New Survey No. 31, Hissa No. 9, 10 all of Village Navghar, Taluka & District Thane, within the limits of Mira Bhayander Municipal Corporation has been accorded sanction for Environment Clearance from the Ministry of Environment and Forests. Copies of the clearance letter are available with the Maharashtra Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forest at http://www.envis.maharashtra.gov.in

Dated : 15/03/2022

M/s. **Shubham Housing**
Sd/-
Partner
Shop No. 3/4, Shree Hari

IN THE HIGH COURT OF JUDICATURE AT BOMBAY TESTAMENTARY AND INTESTATE JURISDICTION PETITION NO. 3129 OF 2021

Petition for Letters of Administration to the Property and credits of **GOPAL RAJARAM SHIRSEKAR** Hindu, Indian Inhabitant of Mumbai, a Married, Auto-Rikshaw Driver, who was residing at the time of his death at Room No. M.M.D.50/4/7, Arvind Patil Wadi, Khardev Nagar, Ghatla, Near Karnatak High School, Chembur - (East), Mumbai 400071

...Deceased

PRAKASH RAJARAM SHIRSEKAR
Aged 63 years, Hindu, Indian Inhabitant of Mumbai,
Occupation: Retired, residing at Near Karnataka High School, Arvind Patil Wadi, M.M.D/50/4/7, KhardevNagar, Ghatla, Chembur, Mumbai 400071 Being the Brother of the deceased

... Petitioner

To:
1. All Concerned
2. Suchita Gopal Shirsekar
Address: Not Known

If you claim to have any interest in the estate of the abovenamed deceased you are hereby cited to come and see the proceedings before the grant of Letters of Administration.

In case you intend to oppose the grant of Letters of Administration you should file in the office of the Prothonotary and Senior Master a caveat within 14 days from the service of this citation upon you.

"You arc hereby informed that the free legal services from the State Legal Services Authorities, High Court Legal Services Committees, District Legal Services Authorities and Taluka Legal Services Committees as per eligibility criteria are available to you and in case, you are eligible and desire to avail the free legal services, you may contact any of the above Legal Services Authorities/ Committees".

PUBLIC ANNOUNCEMENT

"Expansion of Petrochemical based product manufacturing facility at Plot No. T-2, V-45, V-11 to V-14, T2/1, T-1, MIDC Taloja,Tehsil Panvel, Dist Raigad, Maharashtra by M/s IG Petrochemicals Limited" has been accorded Environmental Clearance by Ministry of Environment, Forest and Climate Change (MoEF & CC), vide EC Identification No. EC22A020MH142617, File No. J-11011/73/2016-IA-II(I) dated 14th March 2022.

Copy of the said environmental clearance is available with Maharashtra Pollution Control Board and on website of the Ministry at https://parivesh.nic.in

Place : Mumbai
Date : 16/03/2022

IN THE COURT OF SMALL CAUSES AT MUMBAI MARJI APPLICATION NO. 318 OF 2019 IN EXHIBIT- 19 IN EXECUTION APPLICATION NO. 316 OF 2013 IN R.A.E. SUIT NO. 895 OF 2010

1. SITARAM RAMCHANDRA NAKHWA Age 82 years, Occ. Retired,
2. UMESH SITARAM NAKHWA Age 49 years, Occ. Business, Both of Mumbai Indian Inhabitants residing at House No. 499A, Tare Lane, Worli Koliwada, Mumbai - 400 030.

... Applicants
(Orig. Plaintiffs)

V/s.

KAMAL SUDHAKAR SAWANT Age about 68 years, Occ: Retired, of Mumbai Indian Inhabitant residing at Room No.4, House No.499A, Tare Lane, Worli KoOwldafliumbai- 4000 030.

... Respondent
(Orig. Defendant)

To,
The Respondent
(Orig. Defendant) abovenamed,

WHEREAS, the Applicants abovenamed have taken out Application dated 04th October, 2019 i.e. Marji Application No. 318 of 2019 against the Respondent praying therein that pleased be condone the delay in taking out the present Application; of about 67 days from the date of knowledge of the order passed below Ex-19 and Delay of above 87 days from the date of passing of order below Ex-19, may please be condoned. and for such other and further reliefs, as prayed in the said Application.

You are hereby warned to

PUBLIC NOTICE

Notice is given to all concerned that **SMT. KASTURBEN H. SHAH and SHRI. SUBHASH H. SHAH** are the owners of Flat No. B - 307, 3rd Floor, Ghatkopar Evergreen Co-operative Housing Society Ltd popularly known as 'Modern Apartments', Sanghani Estate, off Gamdevi Road, L.B.S Marg, Ghatkopar (West), Mumbai – 400086. This flat is purchased and Agreement made between **SHRI. TARANATH PRABHAKAR RAJE** and **SMT. KASTURBEN H. SHAH** and **SHRI. SUBHASH H. SHAH**

Herein under mention agreements is misplaced/lost.

Documents Between Builder/ Developer to Shri. Taranath Prabhakar Raje in respect of the said flat is lost/ misplaced from SMT. KASTURBEN H. SHAH and SHRI. SUBHASH H. SHAH.

Hence this notice is hereby given that any person/s have found or have any claim/right/title/interest/mortgage regarding this flat, shall contact personally with original proof of document mentioned above as misplaced, within the 15 days of issuing this notice.

Makwaana N Associates
Adv. Haresh Makwaana
Place: Office No. 53,- Plot No. 46, Annapurna Industries Service C S Ltd., Tilak Road, Ghatkopar East, Mumbai – 400 077.
Dt. 16/03/2022

PUBLIC NOTICE

NOTICE is hereby given to the public at large with respect to **Flat No. 147 on 14th Floor of the building "KALPATARU HILLS PHASE II CO-OPERATIVE HOUSING SOCIETY LTD"** admeasuring about 753 Sq. Ft. Carpet area having address at **Kalpataru Hills Phase II Co-operative Housing Society Ltd., lying being and situated at Plot of Land bearing Gut No. 59D/4, of Village: Chitalsar Manpada, Opp. Tikuji-ni-wadi, Chitalsar Manpada, Thane (W), 400610** which was under the joint ownership of **Late Mr. Ghanshyam Kotwani** (deceased), **Mrs. Asha Kotwani** and **Mr. Inder Kotwani** (33.33% each) which was purchased from **Kalpataru Properties (Thane) Private Limited (Developer) vide Registered Agreement For Sale dated 10th day of December, 2014 (Registered with sub-Registrar and under Document No: TNN/1898/2015) & Mr. Ghanshyam Kotwani** died intestate on Dt. 29/06/2015, leaving behind his legal heirs **(1) Mrs. Asha Ghanshyam Kotwani (Wife), (2) Mrs. Aarti B. Pariani (Married Daughter), (3) Mr. Mukul Ghanshyam Kotwani (Son), and (4) Mr. Inder Ghanshyam Kotwani (Son)** and the right title and

PUBLIC NOTICE

This is to inform general public holding PIGMY account with e-Syndicate bank (Now Canara Bank) Colaba Branch that Mr. Suresh Vasu Amin, Pigmy agent of our Bank has resigned from Bank's services in April 2020.In this regard claims if any should be brought to the notice of the Bank within 30 days from the public notice and no claims will be entertained after expiry of the stipulated period.

Sd/-
Branch Manager

PUBLIC NOTICE

This is to inform in general public that Krutika P. Raipure is willing to purchase the Flat No. A-2503, on 25th Flr, Wing-A, Bldg. no. 24, Lavania CHSL' Hiranandani Estate Patlipada, Ghodbunder Rod. Thane (W)-400607 from Satish Parwani who informed that Legal heirship Certificate passed in the Hon'ble Court in favour of him who is the legal heir of late Veena Parwani is not available. All persons having any claim/ objection whatsoever to the said flat are hereby requested to make the same known in writing to the undersigned at her office within a period of 10 days from the date of publication hereof, failing which the claim/objection of such person/s will be deemed to have been waived and/or abandoned forever and no claim shall be entertained in respect of the said flat dtd. this 15/3/2022, M/s. Aartie Shinde & Co Sd/- Office No.7, 3rd Flr, Sai Sadan, 68, Janmbhumi Marg, Fort, Mumbai-1.

NOTICE

NOTICE is hereby given that we are investigating the title of (i) Mrs. Chandrika Navnit Botadra and (ii) Mrs. Sona Yogesh Gholani in respect of a flat being Flat No.601 admeasuring 935 sq. ft. (carpet) equivalent to 86.89 sq. mtrs. on the Sixth floor of the building "Shanti Vijay" belonging to Shanti Vijay Co-operative Housing Society Ltd. situate at Plot No. 477, T.P.S. V. Shradhanand Extn. Road, Vile Parle (East), Mumbai 400 057 on Plot bearing CTS No.1891 o

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

RED/L.S.I (R57)
No:- Format1.0/CAC/UAN No.MPCB-CONSENT-0000115836/CR/2207000116

Date: 02/07/2022

To,
M/s I G Petrochemicals Ltd.,
Plot Nos. T-1, T-2, T-2/1, V-11, V-12, V-13, V-14 & V-45 Taloja Industrial Area,
MIDC,Taloja, Tal. Panvel, Dist. Raigad - 410 208.

Your Service is Our Duty

Sub: Grant of Renewal of Consent to Operate under Red/LSI

Ref:
1. Environment Clearance accorded vide No. F. No. J-11011/ 73/ 2016-IAII(I) dtd. 18/07/2017.
2. Environment Clearance amendment accorded vide No. F. No. J-11011/ 73/ 2016-IAII(I) dtd. 20/02/2018.
3. Consent to Operate granted vide No. Format 1.0/ CC/ UAN No. 0000101662/ CO-2107000003 dtd. 01/7/2021
4. Minutes of Consent Appraisal Committee meeting held on 20/5/2022

Your application No.MPCB-CONSENT-0000115836 Dated 15.06.2021

For: grant of Consent to Renewal under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to renewal is granted for a period up to 31/08/2026**
2. **The capital investment of the project is Rs.1169.8758 Crs. (As per C.A Certificate submitted by industry Existing C.I. Rs. 1167 Crs + Increase in C.I. Rs. 2.8758 Crs)**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Di Ethyl Phthalate/ Di Methyl Phthalate	12600	MT/A
2	Maleic Anhydride	7660	MT/A
3	Phthalic Anhydride	222110	MT/A
4	Benzoic Acid	1500	MT/A
5	Power (Transmitted to Grid)	2.5	MW

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	791	As per Schedule-I	Recycle 607 CMD treated effluent into process, for cooling tower make up, fire-fighting, utility purposes etc. and discharge 220 CMD treated effluent into CETP
2.	Domestic effluent	36	As per Schedule-I	As above

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
1	S-1	Boilers (3 Nos.)	1	As per Schedule -II
2	S-2 (A&B)	PA- I & II -Hot Oil Heaters	1	As per Schedule -II
3	S-3	PA-I Scrubber	1	As per Schedule -II
4	S-4	PA-II Scrubber	1	As per Schedule -II
5	S-5	PA-III Scrubber	1	As per Schedule -II
6	S-6	PA De-Dusting-1	1	As per Schedule -II
7	S-7	PA De-Dusting 2	1	As per Schedule -II
8	S-8	PA De-Dusting 3	1	As per Schedule -II
9	S-9	MA Bagging	1	As per Schedule -II
10	S-10	MA Flaker	1	As per Schedule -II
11	S-11	DG Set (2000 KVA)	1	As per Schedule -II
12	S-12	PA-IV Scrubber	1	As per Schedule -II
13	S-13	PA-IV Scrubber	1	As per Schedule -II
14	S-14	PA De-Dusting 4	1	As per Schedule -II
15	S-15	D.G. Set (2500 KVA)	1	As per Schedule -II

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Debris during maintenance activities like insulation/ packing material/ scrap iron etc.	9.0	MT/M	NA	Sale to Auth. Party/ CHWTSDF
2	Biological sludge from waste water treatment	35	MT/M	Drying	Used as manure for gardening

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for treatment and disposal of hazardous waste:**

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
1	1.2 Tarry residues and still bottoms from distillation	455.65	MT/M	Incineration	Used as fuel in Oil Heater/ Thermal Oxidizer
2	1.4 Organic residues	150	MT/A	Incineration	CHWTSDF
3	1.6 Spent catalyst and molecular sieves	7.5	MT/M	Recycle/ Incineration	Return to manufacturer/ CHWTSDF
4	5.1 Used or spent oil	3.75	MT/M	Recycle	Sale to Auth. Party
5	33.1 Empty barrels /containers /liners contaminated with hazardous chemicals /wastes	104	No/M	Recycle*	Sale to Auth. Party having permission under Rule 9/ CHWTSDF
6	35.3 Chemical sludge from waste water treatment	1.5	MT/M	Secured Landfill	CHWTSDF
7	37.2 Ash from incinerator and flue gas cleaning residue	0.8	MT/M	Secured Landfill	CHWTSDF
8	37.3 Concentration or evaporation residues	250	MT/M	Secured Landfill after treatment	CHWTSDF
9	36.2 Spent carbon or filter medium	7.81	MT/M	Incineration	CHWTSDF
10	15.2 Discarded asbestos	3.6	MT/M	Secured Landfill	CHWTSDF
11	37.1 Sludge from wet scrubbers	0.42	MT/M	Secured Landfill after treatment	CHWTSDF
12	33.1 Discarded Bags used for hazardous chemicals	0.21	MT/M	Incineration	CHWTSDF
13	35.2 Spent ion exchange resin containing toxic metals	7500	Ltr/A	Incineration	CHWTSDF
14	By-product Sodium Sulphate	75	MT/M	Recycle*/Landfill	Sale to Auth. Party having permission under Rule 9/ CHWTSDF
15	By-product Phthalic Acid	66.67	MT/M	Recycle*/Landfill	Sale to Auth. Party having permission under Rule 9/ CHWTSDF

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
16	By-product Mono Ester Salts	250	MT/M	Recycle*/Landfill	Sale to Auth. Party having permission under Rule 9/ CHWTSDF

8. **Conditions under Batteries (Management & Handling) Rules, 2001:**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	Battery waste	100.00	Nos./Y	Sent back to manufacturer

Specific Conditions for used Batteries:

i. The applicant shall ensure that used batteries are not disposed of in any manner other than by depositing with the authorized dealer/ manufacturer/ registered recycler/ importer/ re-conditioner or at the designated collection center.

ii. The applicant shall file half-yearly return in Form VIII to the M.P.C. Board.

iii. Bulk consumers to their user units may auction used batteries to registered recyclers only.

9. **Conditions under Plastic Waste Management Rules, 2016 (Notification dtd. 18/03/2016):**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	Plastic waste	500.00	Kg/M	Sale to Auth. Party/ Recycler

10. **Conditions under E-Waste Management:**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	IT/ Telecom, Electrical, Electronic wastes	600.00	Kg/M	Sale to Auth. E waste handler/ Recycler

11. The Board reserves the right to review, amend, suspend, revoke this consent and the same shall be binding on the industry.
12. This consent should not be construed as exemption from obtaining necessary NOC/ permission from any other Government authorities.
13. Industry shall operate and maintain ETP so as to achieve Consented standards.
14. Industry shall adopt Cleaner fuel in place of Furnace Oil in compliance with Board's Circular dtd. 20/02/2020.
15. Industry shall comply with the conditions stipulated in Environment Clearance accorded vide No. F. No. J-11011/ 73/ 2016-IAII(I) dtd. 18/07/2017 and amendment dtd. 20/02/2018.
16. The applicant shall ensure disposal of by-products to Actual user having permission under Rule 9 of Hazardous and Other Wastes(Management & Transboundary Movement) Rules 2016.
17. This consent is issued as per the minutes of Consent Appraisal Committee meeting held on 20/5/2022

1afddd0f d4535be6 315dc609 cb1e85a7 a21844f4 492aafdd 83e9dee2 4646dd69

Signed by: Ashok Shingare
Member Secretary
For and on behalf of,
Maharashtra Pollution Control Board
ms@mpcb.gov.in
2022-07-02 23:28:33 IST

Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	10488892.00	MPCB-DR-6679	01/07/2021	RTGS
2	50000.00	TXN2206001444	14/06/2022	Online Payment

Total fee required to pay Rs. 11713758 (5 term fee + C to E for increased CI). Industry has paid consent fee of Rs. 11830310/- (Rs. 10488892/- + Rs. 50000/- along with application + Rs. 1291418/- balance fee of Rs. 1291418 as per existing consent to operate dated 01/7/2021). Now, Rs. 116552/- will remain balance with the Board.

Copy to:

1. Regional Officer, MPCB, Navi Mumbai and Sub-Regional Officer, MPCB, Taloja
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB,Sion, Mumbai
3. CC-CAC Desk- for record & website updating purpose.

SCHEDULE-I

Terms & conditions for compliance of Water Pollution Control:

1) A] As per your application, you have provided Effluent Treatment Plant (ETP) of designed capacity 799 CMD consisting of Primary, Secondary, Tertiary treatment followed by UF, Two stage RO, 4 effect MEE & ATFD for the treatment of 791 CMD industrial effluent.

B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

Sr. No.	*Parameters*	*Limiting concentration not to exceed in mg/l, except for pH*
1	pH	5.5 to 9.0
2	Oil & Grease	10 mg/l
3	BOD	100 mg/l
4	COD	250 mg/l
5	Suspended Solids	100 mg/l
6	Chloride	600 mg/l
7	Sulphate	1000 mg/l
8	TDS	2100 mg/l
9	TAN	50 mg/l

C] The 607 CMD treated effluent (including 36 CMD domestic effluent) shall be recycled into process, for cooling tower make up, fire-fighting, utility purposes etc. and restrict discharge of 220 CMD treated effluent into CETP with water metering system for further treatment & disposal. In no any case treated/untreated effluent shall find its way outside the factory premises directly or indirectly.

D] Industry shall ensure that the OCEMS is equipped with remote calibrating facility and online monitoring data is connected to MPCB & CPCB Servers.

2) A] As per your application, you have provided septic tank and soak pit for the treatment of 36.00 CMD sewage.

B] Overflow is connected to Aeration tank of ETP.

3) The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters, and other provisions as contained in the said act:

Sr. No.	*Purpose for water consumed*	*Water consumption quantity (CMD)*
1.	Industrial Cooling, spraying in mine pits or boiler feed	4776.00
2.	Domestic purpose	44.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	733.00

4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Gardening	10

4) The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters, and other provisions as contained in the said act:

5) Prior permission shall be obtained from CGWA / irrigation department if ground Water/surface water is being used for industrial/Domestic purpose.

6) The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 or through NABL accredited laboratories.

SCHEDULE-II

Terms & conditions for compliance of Air Pollution Control:

1) As per your application, you have provided the Air pollution control (APC) system and erected following stack(s) and observe the following fuel pattern-

Stack No.	Stack Attached To	APC System	Height in Mtrs.	Type of Fuel	Quantity & UoM	S%	SO_2 (kg/day)
S-1	Boilers (3 Nos.)	Stack	55	LSHS	27 MT/Day	1.20	648.00
S-2	Hot Oil Heaters (2A & 2 B)	Stack	31	LSHS	4MT/Day	4.50	96.00
	Hot Oil Heaters (2 Nos.)			Distillation Residue	7MT/Day	0.00	0.00
S-3 to S-5	Process Vents PA- I, II & II	Scrubber	50	--	--	--	--
S-6 to S-8	PA De-dusting filter (3 Nos.)	Wet Scrubber	12	--	--	--	--
S-9	MA Bagging	Wet Scrubber	30	--	--	--	--
S-10	MA Flaker	Bag Filter	30	--	--	--	--
S-11	D.G. Set (2000 KVA)	Acoustic Enclosure/ Stack	15	HSD	8.3 MT/Day	1.00	166.00
S-12	Hot Oil Heater/ Thermal Oxidizer	Wet Scrubber	31	HSD	2.5MT/Day	1.00	50.00
				Distillation Residue	4.2MT/Day	0.00	0.00
S-13	Process Vent PV-IV	Wet Scrubber	50	--	--	--	--
S-14	PA De-dusting filter	Bag Filter	12	--	--	--	--
S-15	D.G. Set (2500 KVA)	Acoustic Enclosure/ Stack	30	HSD	380 Kg/Hr	1.00	182.40

2) The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.

3) The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards:

A. Emission from Chimney /stack

Sr No.	Parameters	Fuel Type	Limiting Concentration not to exceed
1	Sulphur Di Oxide (SO2)	Liquid	850
2	Oxides of Nitrogen (NOx)	Liquid	350
3	Particulate Matter	Liquid	50
4	Carbon Monoxide (CO)	Liquid	150

B. Process Emission (specific from Chimney /stack :

Sr No.	Parameters	Source	Limiting Concentration not to exceed
1	Organic Particulate	PA, MA and TDI Plants	25

C. Load Based Standards :

Sr No.	Parameters	Source	Quantum limit in gm/hour for New/ Expansion Plants (gm/hr)

4) Storage of Volatile Liquids : General Petroleum/Petrochem Products

1) Storage tanks with capacity between 4 to 75m3 and total vapour Pressure (TVP) of more than 10 kpa should have Fixed Roof Tank (FRT) with pressure valve vent.
2) Storage tank with the capacity between 75 to 500 m3 and total vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Root Tank (IFRT) or External Floating Root Tank (EFRT) or Fixed Roof Tank with vapour control or vapour balancing system.
3) Storage tanks with the capacity of more than 500 m3 and total vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Roof Tank or External Floating Roof Tank or Fixed Roof Tank with vapour control system.
4) The tanks with the capacity of more than 75 m3 and total vapour Pressure (TVP) of more than 76 kpa should have Fixed Root Tank with vapour control system.

5) Requirement for seals in Floating Roof Tanks:

i) a) IFRT and EFRT shall be provided with double seals with minimum vapour recovery of 96%.

b) Primary seal shall be liquid or shoe mounted for EFRT and vapour mounted for IFRT. Maximum seal gap width will be 4 cm and maximum gap area will be 200 cm2/m of tank diameter.

c) Secondary seal shall be rim mounted. Maximum seal gap width will be 1.3 cm and maximum gap area will be 20 cm2/m of tank diameter.

d) Material of seal and construction shall ensure high performance and durability

ii) Fixed Roof Tanks shall have vapor control efficiency of 95% and vapour balancing efficiency of 90%

iii) Inspection and maintenance of storage tanks shall be carried out under strict control. For the inspection, API RP 575 may be adopted, In-service inspection with regard seal gap should be carried out once in every six months and repair to be implemented in short time. In future, possibility of on-stream repair of both seals shall be examined.

iv) Storage tanks shall be painted with white colour shade, except for derogation of visually sensitive area.

5) Storage of Benzone, VCM and ACN

i. FRT with vapour for inceneration with 99.9% of removal efficiency for volatile organic compounds (VOCs) shall be provided, or

ii. IFRT/EFRT with double seals, emissio-reducing roof fitting and fitted with fixed roof with vapour removal efficiency of atleast 99% shall be provided, or

iii. Internal floating roof and nitrogen blanketing in between fixed and floating roofs shall be provided.

6)

Emission control for Road tank truck/Rail tank wagon loading		
Loading of Volatile Products	Gasoline and Naphtha: (i) VOC reduction, %. (ii) Emission, gm/m3	(i) 99.50 (ii) 5.00
	Benzene: (i) VOC reduction, % (ii) Emission, mg/m3	(i) 99.99 (ii) 20.00
	Toluene/Xylene: (i) VOC reduction, % (ii) Emission, mg/m3	(i) 99.98 ii) 150.00
Note: (i) It shall be applicable for Gasoline, Naphtha, Benzene, Toluene and Xylene loading. (ii) Road tank Truck shall have Bottom loading and Roll tank wagon shall have Top submerged loading. (iii) Annual leak testing for vapour collection shall be done.		

7) VOC Emission Controls: -

a) The Industry shall take all operational practices & implement control measures to limit VOC emission during breathing (tank evaporative emission) and during filling of storage tanks as mandated under storage tank provision of GSR 186 (E) Dt.18.03.2008.

b) Industry shall keep record indicating type of chemical stored in different tanks & submit the same to MPCB every month.

c) The tanks shall be maintained as per the API RP 575 Standards and provided with modern instrumentation to ensure that there shall be no leakage or spillage during handling.

d) The industry shall have preventive maintenance plan and keep records of preventative maintenance carried out. For IFR Tanks, this shall include regular inspection of seals, seal gap, condition of various sleeves, jackets etc.

e) The industry shall monitor vapor pressure in the tanks. The Industry shall spray water on tanks shells by water sprinklers installed, provided tank vapor pressure exceeds set norms. Industry shall maintain records of operation of fire water sprinkler & submit the same to MPCB every month.

f) The industry shall provide adequate arrangement for capturing VOC emission during tanker filling. This shall include providing compatible lids (with suitable openings for filling pipe and fume extraction vent) to close the manholes on the tanker top so that no VOC emissions leaks into the environment. Alternative bottom loading of tankers with leak proof vapour collection facilities at the manholes will be provided. Compatible loading arms with level gauge, metered flow to tanker to ensure control filling to be provided. Vapour capturing hoses shall be connected to central header and shall have extra provision for collecting VOC emissions from maintenance activities and during pigging of pipelines.

g) The collection header shall be connected to Air pollution control system consisting of brine chiller followed by activated carbon/charcoal to meet slandered as given in DSR -186 (E) Dt.18.03.2008

h) The industry shall explore possibility of collecting vapours from open manholes during tank washing and diverting the same to the air pollution control system provided.

i) Industry shall ensure that the nitrogen /air used during pigging operations shall be diverted to the air pollution control system provided.

j) The air blown from manifold to tanker filling point shall be diverted to air pollution control system provided.

k) High level alarm synchronized with cut off capacity shall be provided to the storage tanks.

l) The internal roads shall b cement concrete and shall be maintained with adequate green belt.

m) The industry shall monitor ambient air quality on a monthly basis and the emission of Volatile Organic Compound particularly Toluene, Xylene and non-methane Hydro Carbon from MoEF approved laboratory.

n) The industry shall not cause any nuisance in surrounding area.

8) Industry shall provide Air Pollution Control System for Paint Booth (Water contain) and leak detection system with alarm.

9) **Industry shall install 24*7 online continuous emission monitoring system at process stack to monitor stack emissions as per CPCB guidelines and it's connectivity to CPCB & MPCB Servers . PP shall Calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act , 1986 or NABL accredited laboratories.**

10) **Project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.**

11) **National Emissions standards for Organic chemicals manufacturing Industry Issued by MOEFCC vide G.S.R. No 608 E DATED 21 July 2010 and amended from time to time shall be followed.**

12) **The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R. 595 (E) dated 9th November, 2012 as amended time to time be followed.**

13) **The National Emission Standards for Petrochem (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.**

SCHEDULE-III

Details of Bank Guarantees:

Sr. No.	Consent (C2E/ C2O /C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C2O	2400000	Existing	Towards O&M of pollution control systems and towards compliance of the Consent conditions	31/8/2026	28/2/2027
2	C2O	200000	Existing	Towards O&M of pollution control systems and towards compliance of the Consent conditions	31/8/2026	28/2/2027

BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

SCHEDULE-IV

General Conditions:

1. The waste generator shall.-

   a) take steps to minimize generation of plastic waste and segregate plastic waste at source in accordance with the Plastic Waste Management Rules, 2016 or as amended from time to time.

   b) not litter the plastic waste and ensure segregated storage of waste at source and handover segregated waste to urban local body or gram panchayat or agencies appointed by them or registered waste pickers', registered recyclers or waste collection agencies;

2. All institutional generators of plastic waste, shall segregate and store the waste generated by them in accordance with the Plastic Waste Management Rules, 2016 amendment from time to time and handover segregated wastes to authorized waste processing or disposal facilities or deposition centers either on its own or through the authorized waste collection agency.
3. All waste generators shall pay such user fee or charge as may be specified in the byelaws of the local bodies for plastic waste management such as waste collection or operation of the facility thereof, etc.;
4. Every person responsible for organizing an event in open space, which involves service of food stuff in plastic or multilayered packaging shall segregate and manage the waste generated during such events in accordance with the Plastic Waste Management Rules, 2016 amendment from time to time.
5. Consumers or bulk consumers of electrical and electronic equipment listed in Schedule I shall ensure that e-waste generated by them is channelised through collection centre or dealer of authorised producer or dismantler or recycler or through the designated take back service provider of the producer to authorised dismantler or recycler
6. Bulk consumers of electrical and electronic equipment listed in Schedule I shall maintain records of e-waste generated by them in Form-2 and make such records available for scrutiny by the concerned State Pollution Control Board
7. Consumers or bulk consumers of electrical and electronic equipment listed in Schedule I shall ensure that such end-of-life electrical and electronic equipment are not admixed with e-waste containing radioactive material as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and rules made there under;
8. Bulk consumers of electrical and electronic equipment listed in Schedule I shall file annual returns in Form-3, to the concerned State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates. In case of the bulk consumer with multiple offices in a State, one annual return combining information from all the offices shall be filed to the concerned State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates.
9. Specific Conditions for storage, Handling and Disposal of Waste from Electrical & Electronic equipment (WEEE):

   1. **Collection of WEEE** - The applicant must provide appropriate and dedicated vehicles duly identified as per the norms for transportation of Hazardous Waste. The applicant shall obtain all the required permits for transportation of WEEE from competent authority. The applicant shall ensure the safe transport of the WEEE without any spillage during transportation.

      Storage for disassembled parts: The applicant must provide appropriate storage for disassembled spare parts from WEEE. Some spare parts (e.g. motors and compressors) will contain oil and/or other fluids. Such part must be appropriately segregated and stored in containers that are secured such that oil and other fluids cannot escape from them. These containers must be stored on an area with an area with an impermeable surface and a sealed drainage system.

2. **Storage for other components and residues:**Other components and residues arising from the treatment of WEEE will need to be contained following their removal for disposal or recovery. Where they contain hazardous substances they should be stored on impermeable surface and in appropriate containers or bays with weatherproof covering. Containers should be clearly labelled to identify their contents and must be secured so that liquids, including rain water cannot enter them. Components should be segregated having regard to their eventual destinations and the compatibility of the component types. All batteries should be handled and stored having regard to the potential fire risk associated with team.
3. **Balances :** WEEE Guidelines also requires that sites for handling of WEEE have "balances to measure the weight of the segregated waste'. The objective is to ensure that a record of weights can be maintained of WEEE entering a facility and components and materials leaving each site (together with their destinations). The nature of the weighing equipment should be appropriate for the type and quantity of WEEE being processed.
4. Plastic, which cannot be recycled and is hazardous in nature, is recommended to be land filled in nearby CHWTSDF.
5. Ferrous and nonferrous metal recycling facilities fall under the purview of existing environmental regulations for air, water, noise, land and soil pollution and generation of hazardous waste and the same should be followed.
6. CFCS should be either reused or incinerated in common hazardous waste Incineration facilities at CHWTSDF.
7. Waste Oil should be either reused or incinerated in common hazardous waste incineration facilities.
8. PCB's containing capacitors shall be incinerated in common hazardous waste incineration facilities at CHWTSDF.
9. Mercury recovery and lead recycling facilities from batteries fall under the Hazardous & Other Wastes (M & TM) Rules, 2016.
10. Existing environmental regulations for air; water; noise, land and soil pollution and generation of hazardous waste and the same should be followed. In case Mercury or lead recovery is very low, they can be temporarily stored at e-waste recycling facility and later disposed in TSDF.
11. The industry shall maintain records of the e-waste purchased, processed in Form-2 and shall file annual returns of its activities of previous year in Form-3 as per Rules 11(9) & 13(3)(vii) of the E-Waste(M) Rules, 2016; on or before 30th day of June of every year.

10. The Energy source for lighting purpose shall preferably be LED based
11. The PP shall harvest rainwater from roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial applications within the plant
12. Conditions for D.G. Set
    a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
    b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
    c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.

d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.

e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.

f) D.G. Set shall be operated only in case of power failure.

g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.

h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.

13. The applicant shall maintain good housekeeping.
14. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
15. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.
16. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.
17. The industry shall submit quarterly statement in respect of industries obligation towards consent and pollution control compliance's duly supported with documentary evidences (format can downloaded from MPCB official site).
18. The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
19. The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification No. B-29016/20/90/PCI-L dated. 18.11.2009 as amended.
20. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.
21. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
22. The PP shall provide personal protection equipment as per norms of Factory Act
23. Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
24. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
25. The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.

26. The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the Hazardous and Other Wastes (M & TM) Rules 2016, which can be recycled /processed /reused /recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/reprocessed etc. should go for that purpose, in order to reduce load on incineration and landfill site/environment.
27. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
28. Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act, 1981 and Environmental Protection Act, 1986 and industry specific standard under EP Rules 1986 which are available on MPCB website (www.mpcb.gov.in).
29. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
30. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
31. The industry should not cause any nuisance in surrounding area.
32. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
33. The industry shall create the Environmental Cell by appointing an Environmental Engineer, Chemist and Agriculture expert for looking after day to day activities related to Environment and irrigation field where treated effluent is used for irrigation.
34. The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
35. The industry should comply with the Hazardous and Other Wastes (M & TM) Rules, 2016 and submit the Annual Returns as per Rule 6(5) & 20(2) of Hazardous and Other Wastes (M & TM) Rules, 2016 for the preceding year April to March in Form-IV by 30th June of every year.
36. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
37. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end.
38. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions.

39. The firm shall submit to this office, the 30th day of September every year, the Environment Statement Report for the financial year ending 31st March in the prescribed FORM-V as per the provisions of Rule 14 of the Environment (Protection) (second Amendment) Rules, 1992.
40. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
41. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
42. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.

This certificate is digitally & electronically signed.

Annexure - VI

I G PETROCHEMICALS LIMITED

Ref : IGPL/JKS/2022/MIDC **Date.: 10.10.2022**

The Dy. Engineer
Maharashtra Industrial Development Corporation
MIDC, SPA & W/S Sub-Division
Taloja, Dist. Raigad

Attn : Mr. Avinash

Sub : Amendment to the Environmental Clearance vide F.No.J-11011/73/2016-IA-II(I) dtd. 06.10.2022

This is with referenced to the above Amendment to the Environmental Clearance issued by the Ministry of Environment, Forest and Climate Change (MoEFCC), New Delhi having the condition at Sl.No.(III) for Green Belt Development IGPL shall take the land for long term lease of 25 years, copy of the same is enclosed herewith.

In this connection, we have already signed the agreement dtd. 22.07.2022 with MIDC for a period of 5 years from 22.07.2022 to 21.07.2027 for developing the Green Belt Area adjacent to our boundary wall. This land parcel have already been developed with **"MIYAWAKI PATTERN",** which is for your kind information and photos of the same as an example are enclosed herewith.

In order to comply with the Amendment to Environment Clearance Condition, we request you to allot us the said land for developing the Green Belt for a period of another 20 years. The necessary rent for the said land will be paid by us.

We would appreciate your reply in the matter for our compliance issue to the Ministry of Environment, Forest & Climate Change (MoEFCC), New Delhi.

Thanking you.

Yours faithfully,
For **I.G. PETROCHEMICALS LIMITED,**

J.K. SABOO
EXECUTIVE DIRECTOR

Encl : As above

Received on Dt.: 10-10-2022
Office of the Dy. Engineer
MIDC, SPA & W/S, Sub dn. Taloja

Factory : Plot No.T-2, Taloja Industrial Area, MIDC, Taloja, Dist.: Raigad, Maharashtra - 410 208, India. Tel.: (91) 22-6847 9100 • Fax : (91) 22-2741 0192 • E-mail: taloja@igpetro.com
Corp. Office : 401-404, Raheja Centre, Free Press Journal Marg, 214, Nariman Point, Mumbai - 400 021. India. Tel.: (91) 22 - 4058 6100; Fax: (91) 22 - 2204 0747; E-mail: igpl@igpetro.com • Website : http//www.igpetro.com
Regd.Office : T-10, 3rd Floor, Jairam Complex, Mala, Neugi Nagar, Panaji, Goa-403 001, India Tel.: 0832 - 2434973 • Email : igplgoa@gmail.com • CIN : L51496GA1988PLC000915

Ex 9

I G PETROCHEMICALS LIMITED

Ref : IGPL/JKS/2022/MIDC

Date.: 23.11.2022

The Dy. Engineer
Maharashtra Industrial Development Corporation
MIDC, SPA & W/S Sub-Division
Taloja, Dist. Raigad

Attn : Mr. Avinash

Sub : Amendment to the Environmental Clearance vide F.No.J-11011/73/2016-IA-II(I) dtd. 06.10.2022

We are referring to our letter ref.IGPI/JKS/2022/MIDC dtd. 10.10.2022 and are sorry to inform you that we have not received any reply to our aforesaid letter.

We would once again request you to please look into the matter and allot us the land as requested for development of Green Belt for another period of 20 years so that the compliance to the Ministry of Environment, Forest and Climate Change can be can be carried out by us.

We await your favourable reply.

Thanking you.

Yours faithfully,
For **I.G. PETROCHEMICALS LIMITED,**

J.K. SABOO
EXECUTIVE DIRECTOR

Encl : As above

Received on Dt.: 23-11-2022
Office of the Dy. Engineer
MIDC, SPA & W/S, Sub dn. Taloja

Factory : Plot No.T-2, Taloja Industrial Area, MIDC, Taloja, Dist.: Raigad, Maharashtra - 410 208, India. Tel.: (91) 22-6847 9100 • Fax : (91) 22-2741 0192 • E-mail: taloja@igpetro.com
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Regd.Office : T-10, 3rd Floor, Jairam Complex, Mala, Neugi Nagar, Panaji, Goa-403 001, India Tel.: 0832 - 2434973 • Email : igplgoa@gmail.com • CIN : L51496GA1988PLC000915

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

RED/L.S.I (R57)
No:- Format1.0/CAC/UAN No.0000129419/CE/2207000117

Date: 02/07/2022

To,
M/s. I G petrochemicals Ltd
Plot No T-1 ,T-2,T-2/1,V-11-14 & V-45,
Taloja Industrial Area, MIDC Taloja, Tal Panvel, Dist-Raigad

Your Service is Our Duty

Sub: Grant of Consent to Establish (Expansion) under Red/LSI

Ref:
1. Consent to Operate granted vide No. Format 1.0/CC/UAN No. 0000101662/CO-210700003 dated 01/7/2021
2. Environmental Clearance accorded vide No. J-110117/73/2016-IA-II(I) dated 14/3/2022
3. Minutes of Consent Appraisal Committee Meeting held on 20/5/2022

Your application No.MPCB-CONSENT-0000129419 Dated 09.01.2022

For: grant of Consent to Establish under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to establish is granted for a period up to commissioning of the unit or up to 5 year whichever is earlier.**
2. **The capital investment of the project is Rs.325 Crs. (As per C.A Certificate submitted by industry Existing-Rs. 1167 Crs + Increase in C.I. – Rs. 2.8758 Crs, Total- 1494.8758 Cr)**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Phthalic Anhydride	53000	MT/A
2	Benzoic Acid	500	MT/A
3	Maleic Anhydride	1450	MT/A

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	60	As per Schedule-I	Recycle 100% to achieve ZLD

Sr No	Description	Permitted	Standards to	Disposal
2.	Domestic effluent	8	As per Schedule-I	Recycle 100% to achieve ZLD

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
1	S-1	Process Scrubber	1	As per Schedule -II
2	S-2	Thermic Fluid Heater	1	As per Schedule -II

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Plastic waste	100	Kg/M	--	Sale to Authorized recycler
2	Biological sludge from waste water treatment	5	MT/M	--	Landfill
3	Debris during maintenance activities like insulation/packing material / scrap iron etc	2.5	MT/M	--	By Sales/CHWTSDF

7. **Conditions under Hazardous & Other Wastes (M & T M) Rules 2016 for treatment and disposal of hazardous waste:**

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
1	1.2 Tarry residues and still bottoms from distillation	1316	MT/A	Incineration	Used as fuel in thermic fluid heater
2	33.1 Empty barrels /containers /liners contaminated with hazardous chemicals /wastes	50	Nos./Y	Recycle*	Sale to Authorized Party
3	33.2 Contaminated cotton rags or other cleaning materials	0.5	MT/A	Recycle	Washed & Reused
4	35.3 Chemical sludge from waste water treatment	04	MT/A	Landfill	CHWTSDF
5	36.2 Spent carbon or filter medium	05	MT/A	Incineration	CHWTSDF
6	37.2 Ash from incinerator and flue gas cleaning residue	05	MT/A	Landfill	CHWTSDF
7	1.6 Spent catalyst and molecular sieves	10	MT/A	Recycle	Send to manufactures
8	5.1 Used or spent oil	10	MT/A	Recycle	Sale to Authorized Party

Sr No	Category No./ Type	Quantity	UoM	Treatment	Disposal
9	37.3 Concentration or evaporation residues	200	MT/A	Landfill	CHWTSDF
10	1.4 Organic residues	40	MT/A	Incineration	CHWTSDF
11	37.1 Sludge from wet scrubbers	2.5	MT/A	Landfill after treatment	CHWTSDF

8. **Conditions under E-Waste Management:**

Sr No	Type of Waste	Quantity	UoM	Disposal Path
1	IT telecom/ Electrical, Electronic waste	100.00	Kg/M	Sale to Authorized E waste handler/ recycler

9. The Board reserves the right to review, amend, suspend, revoke this consent and the same shall be binding on the industry.
10. This consent should not be construed as exemption from obtaining necessary NOC/ permission from any other Government authorities.
11. This Consent is issued subject to an order passed or may be passed by Hon'ble National Green Tribunal
12. The applicant shall comply with the conditions of the Environmental Clearance granted vide letter No. J-110117/73/2016-IA-II(I) dated 14/3/2022
13. The applicant shall obtain Consent to Operate from Maharashtra Pollution Control Board before actual commencement of the Unit/Activity.
14. The applicant shall install/upgrade Effluent Treatment Plant of designed capacity to meet the consented norm and recycle entire treated effluent into the process to achieve ZLD
15. The applicant shall dispose the Hazardous Waste as per the provisions of H&OW Rule by adopting online manifest system
16. The applicant shall store all "A" Class Petroleum Products in floating roof with double seal
17. The applicant shall comply with part C- fugitive emission conditions of GSR 186 applicable for storage and handling of General Petroleum Products
18. This consent is issued as per the minutes of Consent Appraisal Committee meeting held on 20/5/2022

d706e945 a7aaf72a 2d611d51 0499733e c96a5287 85d16019 089ac738 9d74b07a

Signed by: Ashok Shingare
Member Secretary
For and on behalf of,
Maharashtra Pollution Control Board
ms@mpcb.gov.in
2022-07-02 23:30:46 IST

Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	1950000.00	MPCB-DR-9778	12/01/2022	NEFT

Balance amount of Rs. 1300000 will be considered at the time of next renewal of consent.

Copy to:

1. Regional Officer, MPCB, Navi Mumbai and Sub-Regional Officer, MPCB, Taloja
- They are directed to ensure the compliance of the consent conditions.
2. Chief Accounts Officer, MPCB,Sion, Mumbai

SCHEDULE-I

Terms & conditions for compliance of Water Pollution Control:

1) **A] As per application, you have proposed to segregate trade effluent into strong & weak stream and proposed/provided separate treatment system as: Strong stream- High COD (10 CMD) bearing effluent will be directly treated in existing Multi-Effect Evaporator (by upgrading) & ATFD and High TDS (50 CMD) bearing effluent will be treated by installing new Ultra Filtration & Reverse Osmosis followed by MEE.**

2) **A] As per your consent application, you have proposed to treat sewage along with trade effluent in existing Effluent Treatment Plant.**

3) **The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters, and other provisions as contained in the said act:**

Sr. No.	*Purpose for water consumed*	*Water consumption quantity (CMD)*
1.	Industrial Cooling, spraying in mine pits or boiler feed	750.00
2.	Domestic purpose	10.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	48.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	0.00
5.	Gardening	0

4) **The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters, and other provisions as contained in the said act:**

5) **Prior permission shall be obtained from CGWA / irrigation department if ground Water/surface water is being used for industrial/Domestic purpose.**

6) **The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 or through NABL accredited laboratories.**

SCHEDULE-II

Terms & conditions for compliance of Air Pollution Control:

1) As per your application, you have provided the Air pollution control (APC) system and erected following stack(s) and observe the following fuel pattern-

Stack No.	Stack Attached To	APC System	Height in Mtrs.	Type of Fuel	Quantity & UoM	S%	SO_2 (kg/day)
S-1	Process Scrubber	Wet Scrubber	50	---	--	--	--
S-2	Thermic Fluid Heater	Cyclone dust collector followed by Alkali Scrubber	38	LSHS	350Kg/Hr	1.20	201.60
				Distillation Residue	500Kg/Hr	0.00	0.00

2) The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.

3) The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards:

A. Emission from Chimney /stack

Sr No.	Parameters	Fuel Type	Limiting Concentration not to exceed
1	Sulphur Di Oxide (SO2)	Liquid	850
2	Oxides of Nitrogen (NOx)	Liquid	350
3	Particulate Matter	Liquid	50
4	Carbon Monoxide (CO)	Liquid	150

B. Process Emission (specific from Chimney /stack :

Sr No.	Parameters	Source	Limiting Concentration not to exceed
1	Organic Particulate	PA, MA and TDI Plants	25

C. Load Based Standards :

Sr No.	Parameters	Source	Quantum limit in gm/hour for New/ Expansion Plants (gm/hr)

4) Storage of Volatile Liquids : General Petroleum/Petrochem Products

1) Storage tanks with capacity between 4 to 75m3 and total vapour Pressure (TVP) of more than 10 kpa should have Fixed Roof Tank (FRT) with pressure valve vent.
2) Storage tank with the capacity between 75 to 500 m3 and total vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Root Tank (IFRT) or External Floating Root Tank (EFRT) or Fixed Roof Tank with vapour control or vapour balancing system.
3) Storage tanks with the capacity of more than 500 m3 and total vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Roof Tank or External Floating Roof Tank or Fixed Roof Tank with vapour control system.

4)	The tanks with the capacity of more than 75 m3 and total vapour Pressure (TVP) of more than 76 kpa should have Fixed Root Tank with vapour control system.	
5)	Requirement for seals in Floating Roof Tanks:	
i)	a)	IFRT and EFRT shall be provided with double seals with minimum vapour recovery of 96%.
	b)	Primary seal shall be liquid or shoe mounted for EFRT and vapour mounted for IFRT. Maximum seal gap width will be 4 cm and maximum gap area will be 200 cm2/m of tank diameter.
	c)	Secondary seal shall be rim mounted. Maximum seal gap width will be 1.3 cm and maximum gap area will be 20 cm2/m of tank diameter.
	d)	Material of seal and construction shall ensure high performance and durability
ii)	Fixed Roof Tanks shall have vapor control efficiency of 95% and vapour balancing efficiency of 90%	
iii)	Inspection and maintenance of storage tanks shall be carried out under strict control. For the inspection, API RP 575 may be adopted, In-service inspection with regard seal gap should be carried out once in every six months and repair to be implemented in short time. In future, possibility of on-stream repair of both seals shall be examined.	
iv)	Storage tanks shall be painted with white colour shade, except for derogation of visually sensitive area.	

5) Storage of Benzone, VCM and ACN

i. FRT with vapour for inceneration with 99.9% of removal efficiency for volatile organic compounds (VOCs) shall be provided, or

ii. IFRT/EFRT with double seals, emissio-reducing roof fitting and fitted with fixed roof with vapour removal efficiency of atleast 99% shall be provided, or

iii. Internal floating roof and nitrogen blanketing in between fixed and floating roofs shall be provided.

6)

Emission control for Road tank truck/Rail tank wagon loading		
Loading of Volatile Products	Gasoline and Naphtha: (i) VOC reduction, %. (ii) Emission, gm/m3	(i) 99.50 (ii) 5.00
	Benzene: (i) VOC reduction, % (ii) Emission, mg/m3	(i) 99.99 (ii) 20.00
	Toluene/Xylene: (i) VOC reduction, % (ii) Emission, mg/m3	(i) 99.98 ii) 150.00
Note: (i) It shall be applicable for Gasoline, Naphtha, Benzene, Toluene and Xylene loading. (ii) Road tank Truck shall have Bottom loading and Roll tank wagon shall have Top submerged loading. (iii) Annual leak testing for vapour collection shall be done.		

7) VOC Emission Controls: -

a) The Industry shall take all operational practices & implement control measures to limit VOC emission during breathing (tank evaporative emission) and during filling of storage tanks as mandated under storage tank provision of GSR 186 (E) Dt.18.03.2008.

b) Industry shall keep record indicating type of chemical stored in different tanks & submit the same to MPCB every month.

c) The tanks shall be maintained as per the API RP 575 Standards and provided with modern instrumentation to ensure that there shall be no leakage or spillage during handling.

d) The industry shall have preventive maintenance plan and keep records of preventative maintenance carried out. For IFR Tanks, this shall include regular inspection of seals, seal gap, condition of various sleeves, jackets etc.

e) The industry shall monitor vapor pressure in the tanks. The Industry shall spray water on tanks shells by water sprinklers installed, provided tank vapor pressure exceeds set norms. Industry shall maintain records of operation of fire water sprinkler & submit the same to MPCB every month.

f) The industry shall provide adequate arrangement for capturing VOC emission during tanker filling. This shall include providing compatible lids (with suitable openings for filling pipe and fume extraction vent) to close the manholes on the tanker top so that no VOC emissions leaks into the environment. Alternative bottom loading of tankers with leak proof vapour collection facilities at the manholes will be provided. Compatible loading arms with level gauge, metered flow to tanker to ensure control filling to be provided. Vapour capturing hoses shall be connected to central header and shall have extra provision for collecting VOC emissions from maintenance activities and during pigging of pipelines.

g) The collection header shall be connected to Air pollution control system consisting of brine chiller followed by activated carbon/charcoal to meet slandered as given in DSR -186 (E) Dt.18.03.2008

h) The industry shall explore possibility of collecting vapours from open manholes during tank washing and diverting the same to the air pollution control system provided.

i) Industry shall ensure that the nitrogen /air used during pigging operations shall be diverted to the air pollution control system provided.

j) The air blown from manifold to tanker filling point shall be diverted to air pollution control system provided.

k) High level alarm synchronized with cut off capacity shall be provided to the storage tanks.

l) The internal roads shall b cement concrete and shall be maintained with adequate green belt.

m) The industry shall monitor ambient air quality on a monthly basis and the emission of Volatile Organic Compound particularly Toluene, Xylene and non-methane Hydro Carbon from MoEF approved laboratory.

n) The industry shall not cause any nuisance in surrounding area.

8) Industry shall provide Air Pollution Control System for Paint Booth (Water contain) and leak detection system with alarm.

9) **Industry shall install 24*7 online continuous emission monitoring system at process stack to monitor stack emissions as per CPCB guidelines and it's connectivity to CPCB & MPCB Servers . PP shall Calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act , 1986 or NABL accredited laboratories.**

10) **Project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.**

11) **National Emissions standards for Organic chemicals manufacturing Industry Issued by MOEFCC vide G.S.R. No 608 E DATED 21 July 2010 and amended from time to time shall be followed.**

12) **The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R. 595 (E) dated 9th November, 2012 as amended time to time be followed.**

13) **The National Emission Standards for Petrochem (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.**

SCHEDULE-III

Details of Bank Guarantees:

Sr. No.	Consent (C2E/ C2O /C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C to E	25 Lakh	15 Days	Towards compliance of Consent Conditions	31/5/2027	30/11/2027

BG Forfeiture History

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission Period	Purpose of BG	Amount of BG Forfeiture	Reason of BG Forfeiture
NA						

BG Return details

Srno.	Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
NA				

SCHEDULE-IV

General Conditions:

1. Consumers or bulk consumers of electrical and electronic equipment listed in Schedule I shall ensure that e-waste generated by them is channelised through collection centre or dealer of authorised producer or dismantler or recycler or through the designated take back service provider of the producer to authorised dismantler or recycler
2. Bulk consumers of electrical and electronic equipment listed in Schedule I shall maintain records of e-waste generated by them in Form-2 and make such records available for scrutiny by the concerned State Pollution Control Board
3. Consumers or bulk consumers of electrical and electronic equipment listed in Schedule I shall ensure that such end-of-life electrical and electronic equipment are not admixed with e-waste containing radioactive material as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and rules made there under;
4. Bulk consumers of electrical and electronic equipment listed in Schedule I shall file annual returns in Form-3, to the concerned State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates. In case of the bulk consumer with multiple offices in a State, one annual return combining information from all the offices shall be filed to the concerned State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates.
5. Specific Conditions for storage, Handling and Disposal of Waste from Electrical & Electronic equipment (WEEE):
    1. **Collection of WEEE** - The applicant must provide appropriate and dedicated vehicles duly identified as per the norms for transportation of Hazardous Waste. The applicant shall obtain all the required permits for transportation of WEEE from competent authority. The applicant shall ensure the safe transport of the WEEE without any spillage during transportation.

       Storage for disassembled parts: The applicant must provide appropriate storage for disassembled spare parts from WEEE. Some spare parts (e.g. motors and compressors) will contain oil and/or other fluids. Such part must be appropriately segregated and stored in containers that are secured such that oil and other fluids cannot escape from them. These containers must be stored on an area with an area with an impermeable surface and a sealed drainage system.
    2. **Storage for other components and residues:**Other components and residues arising from the treatment of WEEE will need to be contained following their removal for disposal or recovery. Where they contain hazardous substances they should be stored on impermeable surface and in appropriate containers or bays with weatherproof covering. Containers should be clearly labelled to identify their contents and must be secured so that liquids, including rain water cannot enter them. Components should be segregated having regard to their eventual destinations and the compatibility of the component types. All batteries should be handled and stored having regard to the potential fire risk associated with team.

3. **Balances :** WEEE Guidelines also requires that sites for handling of WEEE have “balances to measure the weight of the segregated waste’. The objective is to ensure that a record of weights can be maintained of WEEE entering a facility and components and materials leaving each site (together with their destinations). The nature of the weighing equipment should be appropriate for the type and quantity of WEEE being processed.
4. Plastic, which cannot be recycled and is hazardous in nature, is recommended to be land filled in nearby CHWTSDF.
5. Ferrous and nonferrous metal recycling facilities fall under the purview of existing environmental regulations for air, water, noise, land and soil pollution and generation of hazardous waste and the same should be followed.
6. CFCS should be either reused or incinerated in common hazardous waste Incineration facilities at CHWTSDF.
7. Waste Oil should be either reused or incinerated in common hazardous waste incineration facilities.
8. PCB's containing capacitors shall be incinerated in common hazardous waste incineration facilities at CHWTSDF.
9. Mercury recovery and lead recycling facilities from batteries fall under the Hazardous & Other Wastes (M & TM) Rules, 2016.
10. Existing environmental regulations for air; water; noise, land and soil pollution and generation of hazardous waste and the same should be followed. In case Mercury or lead recovery is very low, they can be temporarily stored at e-waste recycling facility and later disposed in TSDF.
11. The industry shall maintain records of the e-waste purchased, processed in Form-2 and shall file annual returns of its activities of previous year in Form-3 as per Rules 11(9) & 13(3)(vii) of the E-Waste(M) Rules, 2016; on or before 30th day of June of every year.

6. The Energy source for lighting purpose shall preferably be LED based
7. The PP shall harvest rainwater from roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial applications within the plant
8. Conditions for D.G. Set
   a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
   b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
   c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.
   d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
   e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.
   f) D.G. Set shall be operated only in case of power failure.
   g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.

h) The applicant shall comply with the notification of MoEFCC, India on Environment (Protection) second Amendment Rules vide GSR 371(E) dated 17.05.2002 and its amendments regarding noise limit for generator sets run with diesel.

9. The applicant shall maintain good housekeeping.
10. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
11. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.
12. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.
13. The industry shall submit quarterly statement in respect of industries obligation towards consent and pollution control compliance's duly supported with documentary evidences (format can downloaded from MPCB official site).
14. The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
15. The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification No. B-29016/20/90/PCI-L dated. 18.11.2009 as amended.
16. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.
17. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
18. The PP shall provide personal protection equipment as per norms of Factory Act
19. Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
20. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
21. The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
22. The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the Hazardous and Other Wastes (M & TM) Rules 2016, which can be recycled /processed /reused /recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/reprocessed etc. should go for that purpose, in order to reduce load on incineration and landfill site/environment.
23. An inspection book shall be opened and made available to the Board’s officers during their visit to the applicant.

24. Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act, 1981 and Environmental Protection Act, 1986 and industry specific standard under EP Rules 1986 which are available on MPCB website (www.mpcb.gov.in).
25. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
26. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
27. The industry should not cause any nuisance in surrounding area.
28. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
29. The industry shall create the Environmental Cell by appointing an Environmental Engineer, Chemist and Agriculture expert for looking after day to day activities related to Environment and irrigation field where treated effluent is used for irrigation.
30. The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
31. The industry should comply with the Hazardous and Other Wastes (M & TM) Rules, 2016 and submit the Annual Returns as per Rule 6(5) & 20(2) of Hazardous and Other Wastes (M & TM) Rules, 2016 for the preceding year April to March in Form-IV by 30th June of every year.
32. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
33. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end.
34. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions.
35. The firm shall submit to this office, the 30th day of September every year, the Environment Statement Report for the financial year ending 31st March in the prescribed FORM-V as per the provisions of Rule 14 of the Environment (Protection) (second Amendment) Rules, 1992.
36. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.

37. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
38. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.

This certificate is digitally & electronically signed.

Annexure - VIII

Water Audit Report

At M/s IG Petrochemicals Limited, MIDC Taloja, Maharashtra

For

M/s. IG Petrochemicals Limited
Plot No T 2, Taloja Industrial Area, MIDC, Taloja,
Vashi, Navi Mumbai - 400703, Maharashtra, India

Prepared by

Pushkar Khanna
(BEE, Accredited Energy Auditor)
Eco Energy Solution

S2/B, 151, Vedant Commercial Complex
Vartak Nagar, Thane, Maharashtra – 400606

January 2023

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ACKNOWLEDGEMENT

We are sincerely thankful to M/s IG Petrochemicals Ltd. for giving us the opportunity to prepare this Water Audit report and present the analysis and findings. We are especially grateful to –

- Mr. J. K. Saboo – Executive Director
- Mr. P. M. Panchaksharaiah – President (Production & Technology)
- Mr. A S P Kumar – President (Engg & Maintenance)
- Mr. Srinivasan – G. M. (Electrical)
- Mr. Laxmikant Naik – Manager (Technical Service)

and other plant personnel for their guidance and support. We also express our gratitude to all other concerned site officials for their support during the conduct of this exercise.

DISCLAIMER

Eco Energy Solution, has prepared this report on 'Water Audit' and Conservation techniques, adopted at M/s, IG Petrochemicals Limited, Taloja, Dist. Raigad, Maharashtra, on a best judgment basis.

While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered & provided by M/s, IG Petrochemicals Limited.

It is further informed that the projections are the management's best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Eco Energy Solution and / or its affiliates and / or its Partners, employees / officers in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

Pushkar Khanna

Accredited Energy Auditor

(under Bureau of Energy Efficiency)

Reg. No. # 0260

1 EXECUTIVE SUMMARY

1.1 Introduction

- This water audit report of M/s IG Petrochemicals Ltd. provides a detailed overview of the water distribution system and water usage at their MIDC, Taloja plant premises located near Navi Mumbai, Dist. Raigad, in Maharashtra state. The report highlights the major water sources, consumption areas, wastewater treatment facilities and available water saving opportunities in the plant. A set of recommendations which will assist in improving water efficiency has also been highlighted in this report. This report has emerged after a detailed water audit conducted in plant from Dec '22 to Jan '23.

Table 1 : Water Audit Study and Audit Team Brief

Project Title:	Water Audit
Industry	**M/s IG Petrochemicals Ltd. MIDC, Taloja, Navi Mumbai, Maharashtra**
Contact Person	Mr. Laxmikant Naik
Audit Period	Dec 2022 – Jan 2023
Source of Water	MIDC Supply
Date of Report	17/01/2023
Work Carried out by: (Team Composition)	Pushkar Khanna - Team Leader Akshay Chavan - Team Member Anish Pandey - Team Member

- Currently, the plant has consent to receive and consume **5563 m^3/day** MIDC water in the premises of IG Petrochemicals Ltd. The plant does not consume any ground water at the plant premises. The audit team has conducted the measurement activity for flow, pressure, power and calculated per day actual water consumption and efficiency of circulation pumps.

- Plant receives an average of **3389 m^3/day** of fresh water at the plant. Out of 3389 m^3/day intake, almost 2475 m^3/day is used as makeup water at Cooling Towers, 851 m^3/day is used at DM plants and supplied to process, 35 m^3/day is used as Potable water, 20 m^3/day is estimated lost from surface water at reservoirs and around 8 m^3/day is gardening and very negligible quantity as losses.

- Average water consumption for FY 2021-22 is 1.027 lakh m^3/month while same for FY 2022-23 as on Dec '22 is 1.038 lakh m^3/month. Average per day consumption for year 2021-22 is 3377 m^3/day and for 2022-23 (as on Dec) is 3400 m^3/day and overall both years average at **3389 m^3/day**.

- Specific Water consumption for last year 2021-22 is **6.16 m³/T** of PA product while same in current year upto Dec '22 is **5.99 m³/T** of PA product. **Thus, there is a definitive reduction in specific water consumption at the plant.**

- The water consumption in both years is near similar even with increase in production in 2022-23 and hence overall specific water consumption ratio is lower in 2022-23.

- IGPL has installed water flow meters at almost all consumption and effluent generation points at the plant. ETP treated water is consumed for CT makeup.

- Data is considered for last year FY 2021-22 and current year 2022-23 as on Dec '23. Average values for these two years is considered for analysis and presented in the report.

Table 2 : Average Data For Water & Effluent Quantity, 2 Year Data

Particulars	**2021-22**	**2022-23**
		as on Dec '22
Annual values in m³	**m³**	**m³**
MIDC Water receipt	1226480	895760
Rain water harvesting	6073	13220
Outside Tanker water	--	26100
Used as CT Makeup	908659	676599
Used as DM Water incl. regeneration	301893	240332
Used as Domestic Potable water	11181	10753
Surface evaporation loss	7300	5500
Gardening use	3519	1895
Total effluent generated	130581	76374
Total effluent sent to CETP	76441	53520
Water recovered for recycle	53983	22715

- **ETP & STP Discharge**: IGPL has an Effluent Treatment Plant (ETP) of capacity 220 m³/day for the treatment of effluent from plant processes and domestic sewage is treated in aeration tank. The quantity of effluent and sewerage is within the permitted quantity.

- **Multiple Effect Evaporator (MEE):** Plant has installed an MEE comprising of 500 m³/day RO & 156 m³/day MEE followed by ATFD system. RO permeate & MEE condensate are being used in cooling towers as make up water. MEE recovered condensate & RO permeate are avg. **117 m³/day** (35% of total effluent generated) and is used as CT makeup.
  Balance @ 205 m³/day is treated process effluent water from ETP and is sent to a centralised common effluent treatment plant (CETP) as per norms for further treatment and disposal.

- **Rain Water Harvesting**: IGPL currently does not come under the compliance of implementing groundwater recharge measures. However, IGPL has successfully implemented & operates a Rainwater Harvesting system at its premises. Rooftop area and surface runoff water is collected from plant building structures and is systematically networked by down-take pipes and storm draining system for collection and use during monsoon season via its rainwater harvesting network. Water collected from this network during monsoon has been **6073 m³** in 2021-22 and has been further improved to **13220 m³** in year 2022 - 23.

- Given the scenario of prevailing resource challenges, depleting water resources the Progressive management of IGPL is keen to undertake water audit at plant premises. To account the present usage and also to identify potential areas for water saving projects, the management of IGPL entrusted Eco Energy Solution (EES) the task of water audit at its premises.

- Specific Water consumption for last year 2021-22 is **6.16 m³/T** of PA product while same in current year upto Dec '22 is **5.99 m³/T** of PA product. **Thus, there is a definitive reduction in specific water consumption at the plant.**

- The Audit is focused on improving water usage efficiency and identifying water Conservation opportunities. Accordingly, the field study and data collection for the said water audit is carried out by the EES Audit team. This report discusses the water balance and various water saving options derived on the basis of observation made, data collected and their analysis.

1.2 Implemented Water Saving Practices at Plant

a. Implemented Rain water harvesting system for rain water collection and use during monsoon season. Water collected from this network during monsoon has been **6073 m³ in 2021-22 and has been further improved to 13220 m³ in year 2022 - 23.**

b. Installed Electrolytic System for PA-2 & PA-3 Cooling Tower for reducing blow down water. The system is under monitoring and stabilization phase.

c. Regular monitoring of CT CoC for minimising water loss and reducing makeup share.

d. Implemented Line traps steam condensate for recycle.

e. Review of fire hydrant network system for water leakages and attending the same.

f. Regular practice of checking and attending to water leakages in process plant areas.

g. Regular practice of review of steam generation and condensate recovery system to check and identify condensate recovery in place and minimise DM plant makeup.

h. Turbine Condensate drain is recovered via drain lines.

2 BACKGROUND OF STUDY

2.1 Rationale For Water Audit

- Human activities consume and pollute large quantities of water. At a global scale, most of the water use occurs in agricultural sector, but there are also substantial water volumes consumed and polluted in the industrial and domestic sectors (WWAP, 2009).

- Global changes like population growth, climate variability, ever-expanding industrialization and urbanization — often combined with pollution — severely affect water availability and lead to chronic water shortages in a growing number of regions. India has been successful in the past to meet such water requirements for different usages with a phenomenal development of water resources. However, preserving the quality and availability of fresh water resources has now become a pressing environment challenge.

- Water is an essential precondition for life, and according to the UN it is a human right to have access to clean water. However, in India millions of people are living without direct access to safe water and based on the rapid population growth coupled with the fact that the water reserve is finite, it will be a very valuable and scarce resource within only a few years. In this light, there is an urgent need for decision makers to act in order to improve the conditions for effective use and supply of water to the Indian people now and in the future.

- Under the Indian Constitution and in our federal democratic set up drinking water comes within the domain of the State Governments (Provincial Governments). In fact, the 73rd Constitutional Amendment has gone a step forward. It mandates that responsibility for drinking water and sanitation services should be with Local Governments. Thus, various States in India are at different stages of giving effect to this Constitutional mandate.

- The Ministry of Urban Development has formulated Service Level Benchmarks (SLBs) in 2008 and circulated the same to the States for adoption. The SLBs include water conservation and management practices such as continuous water supply, 100% metering of water supply, sustainable tariffs and reduction in leakages to a level of 15% to 20%.

- The National Water Policy – 2012 focuses on the need for publishing water accounts and water audit reports indicating leakages and pilferages. The policy recommends

systems to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing to ensure efficient use of water.

- National Water Mission (NWM) has been established by the Government of India with the objective of "conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management".

- The Government of India has also launched a Centrally Sponsored Scheme for Repair, Renovation and Restoration (RRR) of water bodies, which has multiple objectives like comprehensive improvement and restoration of water bodies thereby increasing tank storage capacity, improved water use efficiency and increased availability of drinking water.

- With its continuously declining per capita water availability (from about 5,177 m3 in 1951 to 1,654 m3 in 2007), India stands water stressed and is close to being categorized 'water scarce'. Water demand in India is expected to grow annually by 2.8% to reach 1,500 bcm (by 2030) while the current supply is only about half (viz., 744 bcm). The Government of India, in its Intended Nationally Determined Contribution (INDC) submitted to UN Framework Convention on Climate Change (UNFCCC) in October, 2015, has committed to improve the water use efficiency by 20%, through regulatory mechanisms with differential entitlements and pricing. It further emphasizes the need to focus on integrated water resource management through water conservation, wastewater minimization, etc.

- In light of above and being a Progressive Management, M/s IGPL intends to use Water audit as an effective management tool for minimizing losses, optimizing various uses and thus enabling considerable conservation of water.

- This report discusses the existing water scenario at IGPL Taloja plant and its potential water savings and how the basic water audit approach has been applied to water conservation in line with the guidelines of CGWA.

2.2 SCOPE OF WORK FOR WATER AUDIT

- Objective - Conducting Water Audit in compliance to the Environmental Clearance conditions of PA-V Project.

- Scope of work includes,

a. Study water receipt, storage, distribution and utilization in the plant
b. Identify areas for conserving water usage, identify potential to replace water cooled heat exchangers with air cooled units, review temperature difference across heat exchangers to optimize flow.
c. Study DM-RO water treatment & sewage treatment plant for various parameters and process. Recommend suitable options to improve performance and energy efficiency.
d. Review potential for upgrading ETP treated water for use as make up.
e. Review potential for improving condensate recovery potential.
f. Study pump specifications and monthly outputs logged, hours of pump operation per month, data on break down maintenance and operating problems and emergencies envisaged, existing and future demand projections etc. for all the pump houses.
g. Review layout of water sources, distribution network, and service/delivery points to water users and return flow of waste or excess water.
h. Review layout to include locations and capacities of flow measurement devices installed at key points, dimensions of pipes and fittings in the water supply system, locations and particulars of flow control devices and history sheets of all measuring and control devices including pipes and fittings.
i. Study waste water generation sources and past consumption patterns for various areas to understand present water utilization and optimization potential if any.
j. Review implementation and working of rainwater harvesting and effluent plant.
k. Review installation and already installed Flow measurement devices at strategic points so that water losses from various components such as raw water source, conveyance system from raw water source to treatment plant, from treatment plant to treated water storage system, treated water storage system to distribution networks, individual users, etc. could be assessed at regular intervals.

- Outcome

a. Identify areas where water is wasted or where water could be reused

b. Identify additional water metering points

c. Identify water leakage points.

d. Identify scope of water minimisation and pumping efficiencies.

e. Optimise Pumping system & Power

2.3 Methodology For Water Audit

EES team visited plant between Dec '22 & Jan '23 for site visits. Following step by step methodology and approach were adopted while carrying out the Water Audit at M/s IG Petrochemicals. Ltd.

- Preliminary discussions with plant personnel and observations in all water consuming areas.
- Data collection through discussions, past records, specifications.
- Field studies in each of the areas involving:
  - Performance trials.
  - Measurement of flow parameters, pressure, power wherever possible using portable instruments such as ultrasonic flow meter, pressure gauge and power analyser.
- Identification of water conservation options on short, medium & long terms.
- Identification of Investment grade projects in the plant for detailed analysis towards implementation.
- Preparation, discussion and submission of report to the management.

- The study focused on improving water use efficiency and identifying water saving opportunities. The analysis included simple payback calculations where investments are required to be made to implement recommendations, to establish their economic viability.

- The audit study made use of various portable instruments for carrying out various measurements and analyses. EES has used portable, diagnostic and measuring instruments to support the water audit investigations and analyses. The instruments that were used during the water audit include:
  - Ultrasonic water flow meter
  - Thermo couples & Indicators
  - Pressure Gauge
  - Three Phase Power Analyser

- During the audit, there was continuous interaction between the audit team and facility personnel, to ensure that the suggestions made are realistic, practical and implementable to allow for possible concurrent implementation.

- Report reviewed the intake water sources, distribution network, and service/delivery points to water users and return flow of waste or excess water. The report reviewed locations of flow measurement devices installed at key points, measured flow at user points and reviewed month wise historic data of all metered values.
- EES has carried out the water usage study at IGPL to understand the present water utilization pattern. EES also reviewed rainwater harvesting system and possible wastewater recycling from MEE unit.

- Flow measurement is undertaken at all major use points to calculate the water consumption at IGPL in various process activities such as supply to process units, CT makeup, toilets and office buildings.

- IGPL regularly undertakes testing of water quality for Raw Water and ETP inlet and outlet. Audit team reviewed all test reports and found acceptable as the results are in compliance to various standards as required by PCB.

- EES has undertaken flow, pressure and power measurement at all Process Plants and Effluent Treatment Plant and Sewage treatment Plant inlet and outlet to calculate the total water supplied to the different areas of the plant to understand the quantity of water received from MIDC source and fed to the plant area. Accordingly, discharge from various process units, buildings and estimation of losses is also assessed.

- EES has undertaken physical inspection of water distribution network, supply to various areas of the Plant, Gardening, Effluent Treatment Plant, Process areas etc to estimate the per day water consumption at IGPL.

2.4 Brief Description about the Process Plant

- M/s IG Petrochemicals Ltd. (IGPL) is an established market leader in manufacture of **Phthalic Anhydride (PA)** and is one of the largest PA producers in India.

- Phthalic Anhydride is manufactured by partial oxidation of 'O'-Xylene in a fixed bed tubular reactor. The reaction is exothermic & 'heat of reaction' is controlled / taken away by continuous circulation of heat transfer salt in the shell side of the reactor. The necessary Oxygen for the reaction is obtained from air which also serves as dilutant and heat carrier.

- The crude PA vapors contained in the reaction gas are passed through U-type fin tube switch condenser bundles.

- To achieve de-sublimation of the PA, the gas mixture is further cooled down in the switch condensers to a temperature at which the PA is condensed almost completely as a solid whereas the by products remain predominantly in the gas.

- PA is separated and deposits on the finned tubes in the form of crystals while heat transfer oil at about 55-60°C flow through the finned tubes and remove the de-sublimation heat. Following the loading phase the PA is molten by switching over to hot heat transfer oil of about 180°C. The crude Phthalic Anhydride drains from the switch condenser to the crude PA run down tank

- The tail gas left over after de-sublimation contains small amounts of product and mainly by-products and is transferred to waste gas scrubbing tower. Here the remaining organic compound are removed from the tail gas before it is released to atmosphere in three stage scrubber where DM water is sprayed against the gas stream & the organics are dissolved in DM water. The off gas after scrubbing is let to atmosphere through the waste gas stack. After certain concentration of Maleic Acid in scrubbed water, scrubber water is transferred to Maleic Anhydride recovery plant.

- **Distillation section -** Purification of crude Phthalic Anhydride is carried out in three stages & the first stage is thermal treatment where crude Phthalic Anhydride temperature is raised close to its boiling point. In the second stage, low boilers are separated as over head product & in the third stage, high boilers are separated. All the condensers are connected to waste heat boilers for generating 6.0 kg/cm²g & 3.0 kg/cm²g steam which is used for process lines heating as well for other process. The heat energy required for distillation reboilers is supplied by thermic fluid heaters installed in all plants.

- **Heat Recovery :** For the production of PA, IG Petrochemicals uses Orthoxylene Oxidation method, which involves an exothermic reaction. In this process, both high & low-pressure steam is produced, from heat recovery of exothermic process waste heat, to make the plant self-sustaining in power and steam.

- The plant practices pinch technology for recovering heat from all potential hot process streams wherein high pressure & superheated temperature steam is generated for cogeneration of process steam needs and power. Part of the HP steam generated is directly supplied to process and partly to the cogeneration power plant. In addition, the exothermic process heat is also used for pre-heating air for process used for partial oxidation of O-Xylene. Heat is also recovered from the process distillation columns by way of Low pressure steam and used in process heating, line tracing, air heating etc.

- **Waste off gas recovery & residue recovery**: IG Petrochemicals is also an environment-friendly organization that works towards maintaining a clean environment. The effluent water from the scrubber, which is used for PA production for scrubbing off gases, is recycled further to recover Maleic Anhydride (by product) manufacturing. On the same line, the distillation residues from PA & Maleic Anhydride plant is used as a secondary fuel to fire in the heat transfer oil heater along with furnace oil.

Figure 1 : Process Block Diagram for Phthalic Anhydride Process

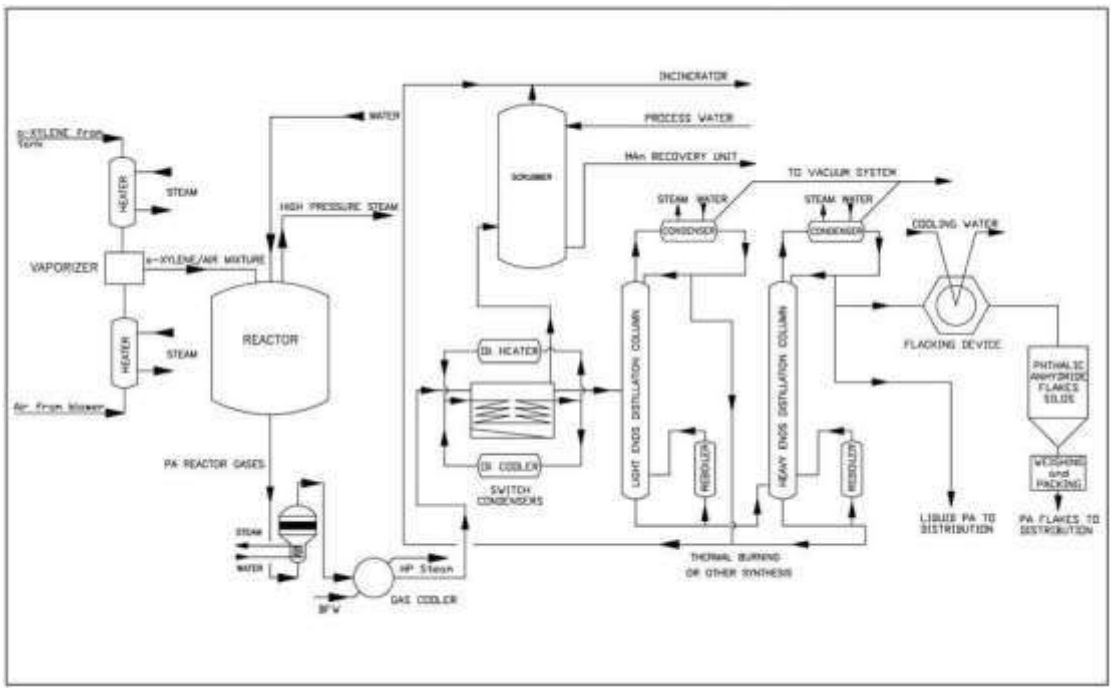
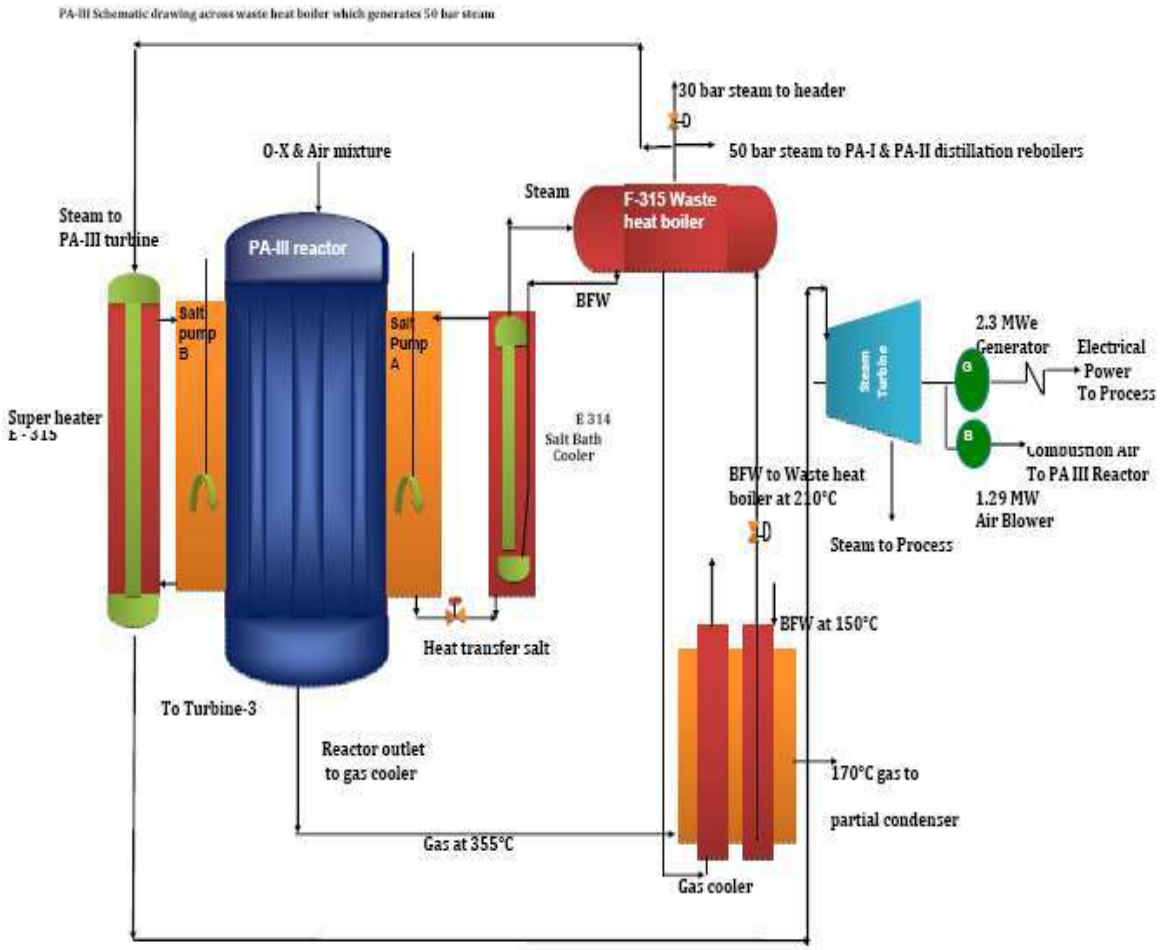


Figure 2 : Schematic of PA Reactor and WHRB Streams



3 ASSESSMENT OF WATER USAGE

3.1 Water Receipt and Storage

- Raw water is received from MIDC main pipeline system and stored in 8675 KL capacity RCC reservoir & 5000 KL MS tank at the plant. Water stored in tanks & reservoir is supplied by dedicated pumps to various Utility areas and Process plants.

- Monthwise Water received from MIDC for last 21 months and plant consumption quantity at all the consumption areas are presented in table below.

- From data available, it is noted that plant has received 12.325 lakh m^3 water in FY 2021-22 and 9.35 lakh m^3 (as on Dec '22) in FY 2022-23. The average water received per month is 1.027 lakh m^3/month and 1.038 lakh m^3/month resp for each year. Same is equal to receiving nearly say 3377 and 3400 m^3/day for year 2022 & 2023 resp. Average for both years is **3389 m^3/day**.

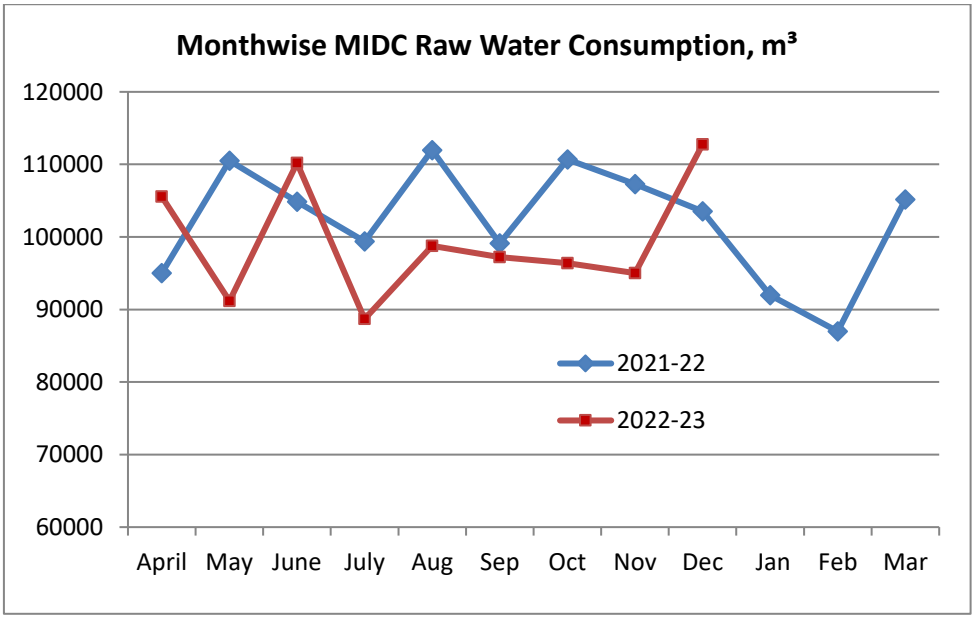
Table 3 : Month wise Water Quantity Received from MIDC & Other Sources

	SOURCE OF WATER		
Month	**MIDC Water Consumption (m3)**	**Tanker water**	**Rain water harvesting**
	m^3	m^3	m^3
Apr-21	95030	0	
May-21	110490	0	
Jun-21	104840	0	
Jul-21	99390	0	326
Aug-21	111980	0	1922
Sep-21	99130	0	2783
Oct-21	110670	0	1042
Nov-21	107300	0	
Dec-21	103530	0	
Jan-22	91970	0	
Feb-22	86980	0	
Mar-22	105170	0	
Average/month	**102207**	**0**	
Total	**1226480**	**0**	**6073**
Average m^3/day	**Total = 1232553 m^3 (3377 m^3/day)**		

Date	MIDC Water Consumption (m^3)	Tanker water (m^3)	Rain water harvesting (m^3)
Apr-22	105550	-	-
May-22	91180	16820	-
Jun-22	110200	9280	-
Jul-22	88690	-	6895
Aug-22	98770	-	1899
Sep-22	97200	-	4426
Oct-22	96390	-	-
Nov-22	95020	-	-
Dec-22	112760	-	-
Average/month	**99529**	**2900**	**1653**
Total	**895760**	**26100**	**13220**
Average m^3/day	**Total = 935080 m^3 (3400 m^3/day)**		

- From above data it is noted that fresh water consumption at the plant is nearly same but MIDC source is reducing and plant management is taking conscious efforts to reduce its water foot print and minimize waste water generation. **Average water consumption for FY 2021-22 is 1.027 lakh m^3/month while same for FY 2022-23 as on Dec '22 is 1.038 lakh m^3/month. Average per day consumption is 3387 m^3/day and 3400 m^3/day for year 2022 & 2023 resp.**

Figure 3 : Month wise MIDC Raw Water Consumption at Plant, m^3



3.2 Water Consumption

- Received & Stored water in reservoir is supplied by dedicated pumps to various Utility areas and Process plants. Maximum water consumption is noted for Cooling Tower as makeup water to meet the evaporation, drift & blow down losses. Plant has 4 nos. major Cooling Towers to meet the process cooling loads and heat duty dissipation. Cooling tower capacities are presented in table below.

- Of the total raw water intake / received at plant, the CT demand is nearly 2475 m^3/day viz. 73%.
- Other major consumer of fresh water intake is DM Plant and is around 851 m^3/day viz. 25.1%.
- Potable water usage is average 35 m^3/day viz. 1.0%.
- Surface water evaporation loss at the Reservoirs & fire water storage tanks is estimated at 20 m^3/day, viz. 0.6%
- Balance 8 m^3/day is attributed to Gardening and balance minor if any can be due to tally of various meter differences.
- Table below gives the Cooling Tower capacities, circulation rates and evaporation loss metered during audit duration. The evaporation & blow down loss at the CT's is average 0.88% of the circulation rates and is lower than industry practices and hence considered satisfactory for the water balance study.

Table 4 : Cooling Tower Data For Plant

Cooling Tower Particulars	Capacity	Circulation rate	Evaporation loss	Makeup as % of circ rate
	m^3/hr	m^3/hr	m^3/hr	%
CT-1	2800	1930	425	0.92%
CT-2	4200	3500	707	0.84%
CT-3	2800	1890	382	0.84%
CT-4	4800	2340	515	0.92%
Total	**14600**	**9660**	**2029**	**0.88%**

- (Average of last 12 days reading of Dec-22 month is taken for above evaporation loss values)

Table 5 : Summary of Raw Water Usage at Plant

Sr.	Major Use Areas	FY 2021-22	FY 2022-23	Average	
		m^3/day	**m^3/day**	**m^3/day**	**%**
1	Fresh Water Received	3377	3400	**3389**	100%
2	CT Makeup	2489	2460	**2475**	73.0%
3	DM Plant	827	874	**851**	25.1%
4	Domestic	31	39	**35**	1.0%
5	Reservoir Evaporation loss	20	20	**20**	0.6%
6	Gardening Use	9.6	6.9	**8**	0.24%

Figure 4 : Share of Fresh Raw Water Consumption

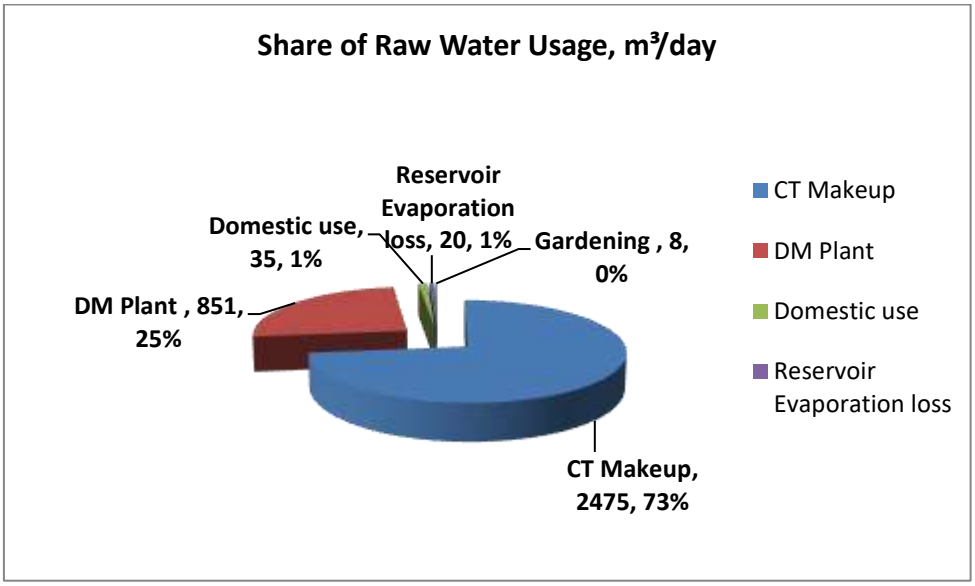


Table 6 : Monthwise Water Consumption at Plant

	WATER CONSUMERS							
	Cooling Tower				DM plant			
Month	**CT-1**	**CT-2**	**CT-3**	**CT-4**	**ODM**	**NDM**	**PA-4 DM**	**Potable water**
	m³	**m³**	**m³**	**m³**	**m³**	**m³**	**m³**	**m³**
Apr-21	18467	20221	19774	18028	2499	8976	12109	969
May-21	18797	17596	20433	20366	2041	10583	13574	1003
Jun-21	18714	23658	21998	16088	3057	12536	13091	732
Jul-21	17137	24164	23465	16569	260	13381	15123	795
Aug-21	16031	25070	23465	17031	931	12703	15087	930
Sep-21	14595	22952	16216	16067	226	11912	14196	900
Oct-21	14489	28236	18030	18885	166	12316	14870	930
Nov-21	16537	28166	17077	15660	125	10567	13905	900
Dec-21	17114	24352	17410	11653	848	11001	12951	737
Jan-22	8533	24482	16851	18748	925	8869	12148	1164
Feb-22	8539	21616	15855	17034	-	7686	11922	1033
Mar-22	18141	23904	18248	22199	-	7885	13424	**1088**
Average/ month	**15591**	**23701**	**19068**	**17361**	**1108**	**10701**	**13533**	**932**
Total	**187094**	**284415**	**228822**	**208329**	**11076.2**	**128416**	**162401**	**11181**
Average m³/day	520	790	636	579	37	357	451	31
Date	**CT-1**	**CT-2**	**CT-3**	**CT-4**	**ODM**	**NDM**	**PA-4 DM**	**Potable water**
Apr-22	16959	24119	17968	21985	-	9680	15758	1120
May-22	16429	23365	18080	21298	-	9378	16471	1085
Jun-22	16619	27234	17437	18811	4194	12012	11350	1389
Jul-22	17165	26126	13685	16201	674	13499	15005	1627

	WATER CONSUMERS							
Aug-22	17165	24465	17651	18106	868	12553	15167	1444
Sep-22	16611	25041	16974	14059	-	12344	14931	1214
Oct-22	17165	25353	15027	18421	-	13360	14469	1053
Nov-22	16634	20159	9682	17628	-	11741	13121	907
Dec-22	18939	18125	17272	18644	-	11900	11859	914
Average/ month	**17076**	**23776**	**15975**	**18350**	**1912**	**11829**	**14237**	**1195**
Total	**153685**	**213986**	**143776**	**165153**	**5735.4**	**106465.5**	**128131.5**	**10753**
Average m^3/day	569	793	533	612	64	394	475	40

3.3 Production Vs Specific Water Consumption Comparison

- Specific Water consumption for last year 2021-22 is **6.16 m³/T** of PA product while same in current year upto Dec '22 is **5.99 m³/T** of PA product. Thus, there is a definitive reduction in specific water consumption and monthwise data is presented in table below.

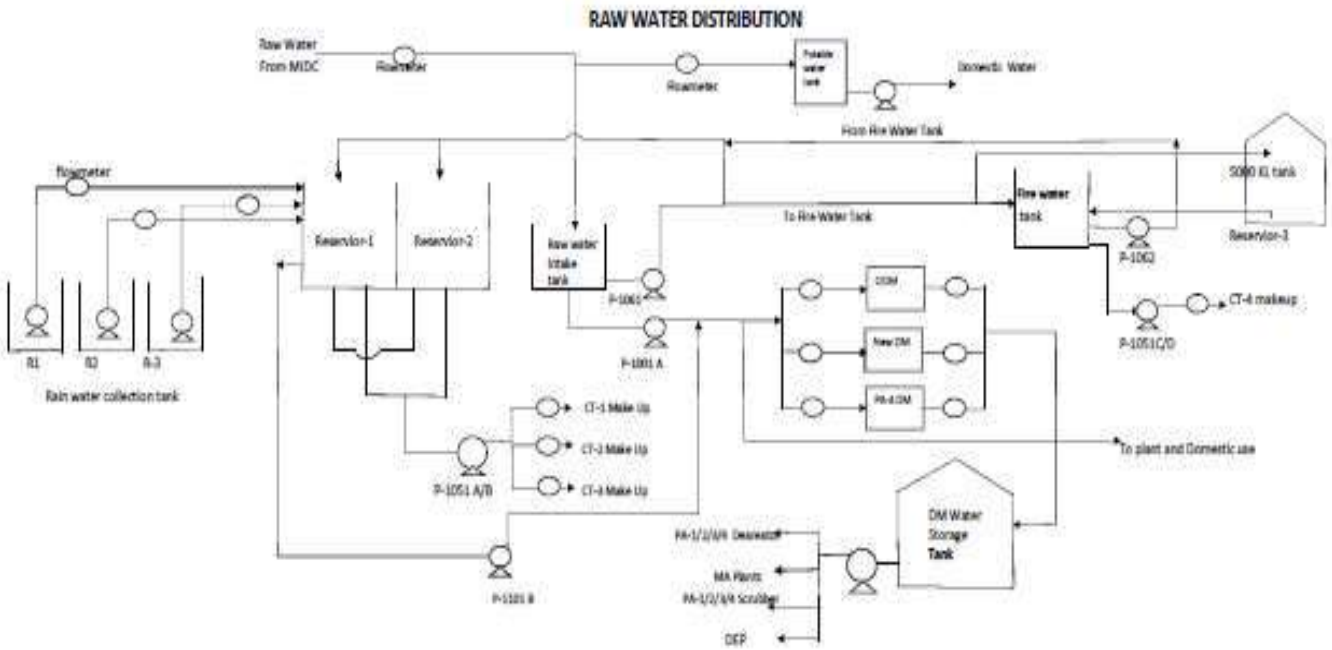
Table 7 : Year on Year Monthwise Production and Specific Water Consumption Comparison

PA PRODUCTION DATA FY-21-22					PA PRODUCTION DATA FY-22-23			
Month	**Raw Water (m³)**	**PA Production (MT)**	**Specific Water Ratio (m³/T)**		**Month**	**Raw Water (m³)**	**PA Production (MT)**	**Specific Water Ratio (m³/T)**
Apr-21	95030	15704.8	6.05		Apr-22	105550	17886.0	5.90
May-21	110490	14766.65	7.48		May-22	108000	18081.6	5.97
Jun-21	105166	16060.9	6.55		Jun-22	119480	17175.0	6.96
Jul-21	101312	18526.85	5.47		Jul-22	95585	17606.4	5.43
Aug-21	114763	18835.05	6.09		Aug-22	100669	18678.7	5.39
Sep-21	100172	18397.65	5.44		Sep-22	101626	16991.5	5.98
Oct-21	110670	17805.65	6.22		Oct-22	96390	17668.7	5.46
Nov-21	107300	17973.85	5.97		Nov-22	95020	14504.7	6.55
Dec-21	103530	16872.85	6.14		Dec-22	112760	17590.0	6.41
Jan-22	91970	16006.5	5.75					
Feb-22	86980	12680.25	6.86					
Mar-22	105170	16399.1	6.41					
TOTAL	**1232553**	**2,00,030.1**	6.16		**TOTAL**	**935,080.00**	**156,182.40**	5.99

3.4 Water Distribution Line Network

- Water is received from MIDC sources via main pipeline and is taken to reservoirs for storage and distribution. Following line diagram presents the distribution network at the plant. Based on the water balance data and pump capacity reviewed during the audit, the major water consuming areas are Cooling Tower makeup followed by DM Water for Utility Boiler, Process and Potable use.

Figure 5 : Water Distribution Network Diagram



Pump	Capacity	
1 P-1061	200	m3/hr
2 P-1051A/B	200	m3/hr
3 P-1001A/B	80	m3/hr
4 P-1062	200	m3/hr
5 P-1051C/D	80	m3/hr
Raw water capacity (reservior 1 and 2)	8675	KL
Reservior-3	5000	KL

3.5 Water Metering Systems

- Monitoring consumption is the most important prerequisite for efficient water management. Thus, in the water supply network, it is necessary to have a robust system of monitoring consumption. During the audit, the available flow meters were identified, and their working conditions reviewed.

Table 8 : List Of Water Flow Meters

Sr.	Location	Reviewed for workings
1	MIDC inlet	Satisfactory
2	CT-1 makeup	Satisfactory
3	CT-2 makeup	Satisfactory
4	CT-3 makeup	Satisfactory
5	CT-4 makeup	Satisfactory
6	New DM inlet	Satisfactory
7	PA-4 DM inlet	Satisfactory
8	Old DM inlet	Satisfactory
9	Potable water inlet	Satisfactory

- IGPL has installed Turbine type Flow Meter at the MIDC intake line and records water receipt on daily and monthly basis. Audit team has noted that the water meter is in working condition and verifies the meter reading with a portable ultrasonic meter reading during field measurement.

- IGPL undertakes calibration of MIDC flow meter every year from a NABL certified lab.

Table 9 : Calibration Details of Water Flow Meters

Water Source	Meter Sr. No.	Date of Calibration
MIDC	3000358	13-09-2019
CT-1	1502184	24-08-2022
CT-1	1502185	24-08-2022
CT-3	1016	09-05-2022
CT-4	1027	09-05-2022
NDM inlet	1289	09-05-2022
Potable inlet	1209	09-05-2022

4 WASTE WATER TREATMENT & RECYCLE

4.1 Waste Water Generation

- Waste water is generated from process operations as well as from Utility sources. Process waste water generation typically averages around 74 m^3/day. Major source of waste water generation is CT Blowdown and is average 160 m^3/day. Other major effluent source is DM plant regeneration water and is 65 m^3/day. Process effluent is avg 74 m^3/day and Sewage effluent is balance at 34 m^3/day. **Total effluent generated is average 332 m^3/day.** Of this, the Inorganic effluent quantity (CT B/d 160 m^3/d & DM 65 m^3/d) is 225 m^3/day and is processed in RO plant. RO plant reject is 69 m^3/day and other process effluent is taken to MEE/ATFD.
- Table below gives the Summary as well as month wise effluent water generated at plant premises from all sources.

Table 10 : Summary of Waste Water Generation From All Sources

Sr.	Effluent Generation Source	FY 2021-22	FY 2022-23	Average	%
		m^3/day	m^3/day	m^3/day	
1	Process plant Eff.	79	69	74	22.3%
2	DM plant Eff.	65	64	65	19.5%
3	Sewage Eff.	32	36	34	10.2%
4	Utility CT blowdown	206	114	160	48.1%
	Total	**382**	**283**	**332**	100.0%

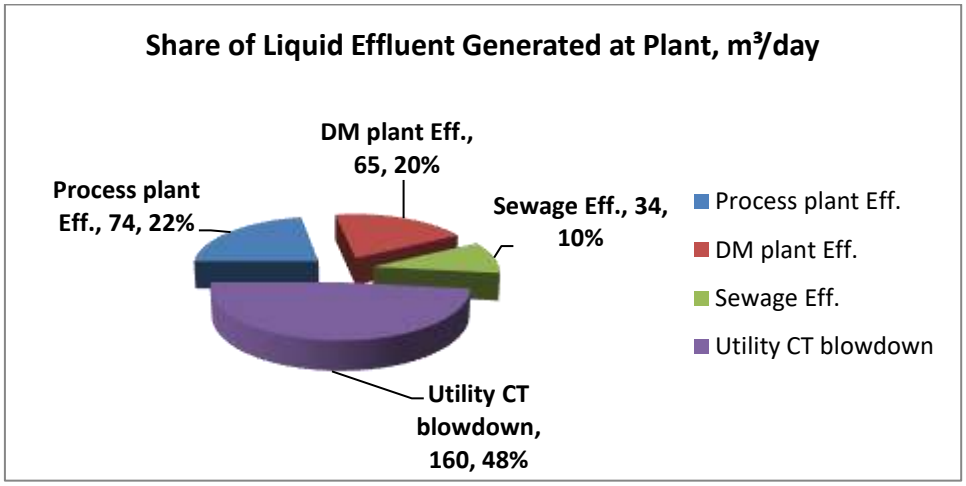
Table 11 : Monthwise Waste Water Generation From All Sources

Month	Process Effluent, m^3	DM Effluent, m^3	Sewage, m^3	CT Blowdown, m^3	Total Effluent, m^3
Apr-21	890	1478	900	1351	4619.3
May-21	1097	1818	930	4701	8546.2
Jun-21	1272	2369	870	5744	10255.4
Jul-21	869	2449	930	10364	14611.7
Aug-21	828	2067	930	5658	9482.7
Sep-21	960	2354	900	15321	19535.2
Oct-21	1966	1626	930	5355	9877.1
Nov-21	2835	2003	900	7732	13469.1
Dec-21	4030	2350	1070	6527	13977.6
Jan-22	2667	1844	1240	3650	9401.6
Feb-22	1625	1812	1120	3020	7576.6
Mar-22	2531	1261	840	4597	9228.8
Average	**2365**	**1953**	**963**	**6168**	**11449**
Total	**21569**	**23431**	**11560**	**74020**	**130581**
m^3/day	**79**	**65**	**32**	**206**	**382**

Month	Process Effluent, m³	DM Effluent, m³	Sewage, m³	CT Blowdown, m³	Total Effluent, m³
Apr-22	1950	1609	900	3414	7873.1
May-22	1661	1791	940	4087	8478.9
Jun-22	2157	1876	900	2768	7700.2
Jul-22	2409	2269	1140	2990	10429.3
Aug-22	2589	2240	1160	2422	8411.0
Sep-22	2115	2069	900	3392	8475.4
Oct-22	2247	2117	1250	3725	9339.0
Nov-22	1833	1576	1200	3795	8404.6
Dec-22	1711	1816	1250	4107	8884.9
Average	**2075**	**1929**	**1071**	**3411**	**8486**
Total	**18672**	**17362**	**9640**	**30701**	**76374**
m³/day	**69**	**64**	**36**	**114**	283

Plant management has installed electrolytic system for reduction of cooling tower blow down in PA-2 & PA-3 Cooling Towers.

Figure 6 : Share of Liquid Effluent Generated at Plant



4.2 Waste Water Treatment Facility & Process

- IGPL has installed an Effluent Treatment Plant (ETP) of 220 m^3/day capacity to treat the wastewater generated from plant process and utility areas effluent. ETP Process in brief is presented below.

- **Primary Treatment:** The incoming process effluents from the plant are subjected to oil removal in an oil & grease trap. The trap is provided with a slotted pipe for skimming the oil collected at the surface of the tank. The oils are directed near the oil drainpipe collected in drums.

- The effluent devoid of oils flows by gravity to the Equalization cum Neutralization tanks. Here hydraulic & organic fluctuations are taken care by mixing of effluents via air blowers. The effluent from the DM plant is collected in a separate equalization cum neutralization tank. For neutralization of effluents, acid and caustic dosing tanks are provided. For settling of suspended solids, Polyelectrolyte/alum is added. The pH of the effluent is adjusted to be around 6.5 – 8.0 in equalization/neutralization tanks.

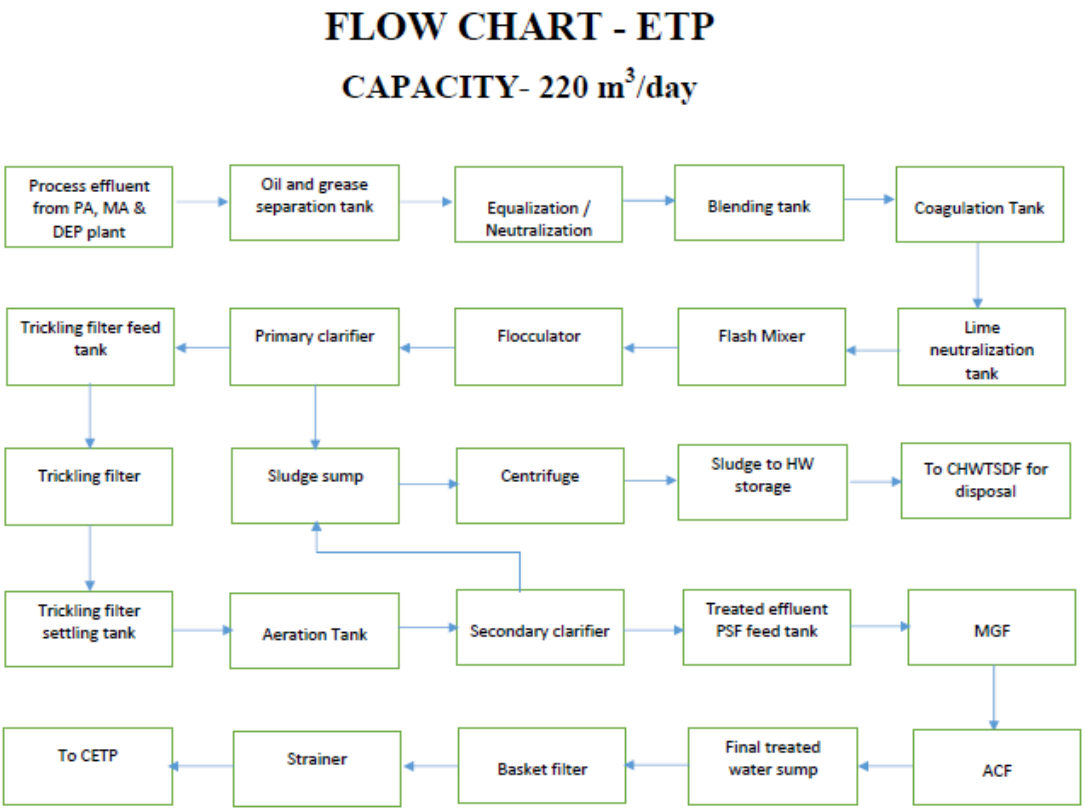
- When COD of incoming effluents is high, it can be taken in emergency holding tank. The effluent after neutralization is pumped to flash mixer by centrifugal pumps. Required solution of alum as coagulant and Polyelectrolyte as flocculent is dosed in the flash mixer. The effluent along with the flocculent flows to the primary clarifier for separation of solids. The solids settle at the bottom of the Primary clarifier as primary sludge, it is then pumped to sludge collection tank.

- **Secondary Treatment :** The supernatant from primary clarifier flows via gravity to Trickling Filter Sump. The effluent is pumped to trickling filter with the help of re-circulation pumps at a specified rate. The effluent is spread over filter media with the help of rotary distributor. The effluent percolates down through the media bed. The effluent is diverted to two compartments of the tricking filter sump. Effluent from one compartment of the sump is continuously re-circulated along with the primary treated effluent. Effluent from second section is pumped to Aeration tank for biodegradation of effluents along with addition of nutrients. Oxygen required for the bio mass is provided by the retrievable diffuser system. The effluent along with the bio mass flows by gravity to secondary clarifier. Settled sludge is re-circulated back to the aeration tank to maintain a required concentration of sludge in the Aeration tank. Excess sludge generated is pumped to Sludge Sump to feed the centrifuge.

- **Tertiary Treatment:** Tertiary treatment includes pumping the effluent through Multi Grade Filter and Activated Carbon Filter for removal of suspended solids & dissolved organic. The final treated effluent is collected in a final collection sump. From the final treated effluent sump the treated effluent is pumped to MIDC underground line & is carried to CETP.

- **Sludge Handling:** Sludge is being handled in centrifuge and in filter press. Filtrate is sent to backwash sump for re-treatment. Sludge is disposed to disposal site CHWTSDF, Taloja.

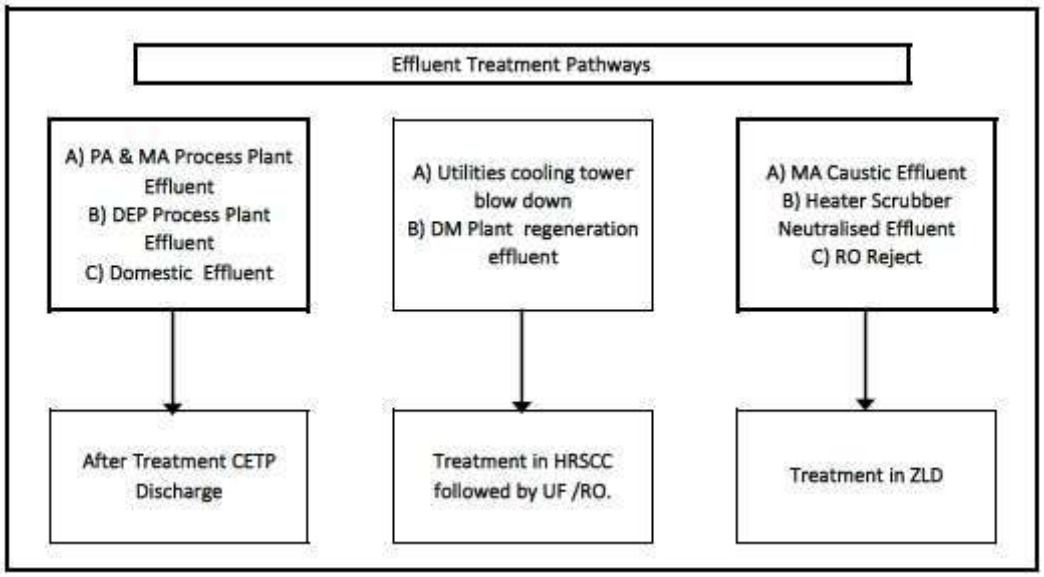
Figure 7 : ETP Plant Schematic Flow Diagram



4.3 Multiple Effect Evaporator Unit

- Based on the waste water source, following schematic describes the effluent treatment pathway. Process effluent from PA/MA plant, DEP & domestic effluent is treated at ETP and subsequently sent to CETP as per norms. CT blow down and DM plant effluent back wash are treated at ETP in HRSCC followed by UF & RO process steps for part recovery and recycle use. Process effluent from MA plant, scrubber effluent and RO plant rejects are treated at MEE unit. All the MEE condensate is recovered and transferred to CT as makeup thus reducing equivalent raw water usage.

Figure 8 : ETP Pathways Schematic Flow Diagram



- Waste water generated at the plant premises is entirely collected and received at the in-house Effluent Treatment Plant (ETP) unit. ETP capacity at the plant for handling & treating liquid effluent is 220 m^3/day. Normal process (Weak Stream) effluent generated during FY 2021-22 is average 382 m^3/day and for year 2022-23 is 283 m^3/day. Average for both years is 332 m^3/day. A major part of the effluent generated is processed in ETP and RO section for recovery and the RO reject along with Organic effluent (Strong stream) is pumped to a Multiple Effect Evaporator (MEE) Unit, the condensate is used in CT Makeup.

- <u>The MEE – unit comprises of the following,</u>
- The MEE unit is a Quadruple Effect Forced Circulation type Evaporator. Rated MEE capacity is 130 KLD water evaporation rate. Unit is Steam heated with LP steam at 1.5 kg/cm^2g.

- Normal effluent Feed Rate is 6.5 T/hr having solids concentration of 2.5% (w/w) and COD content of 900 ppm.
- Product rate achieved is 0.36 T/hr at a concentration of 45%.
- Evaporation rate achieved is thus nearly 6.139 T/hr water, which is recovered for use as CT makeup.

- The treated effluent (average 205 m^3/day, viz, 62%) is sent to a Common ETP system operated by MIDC for final disposal and is as per present norms.

4.4 Effluent Stream's Generation & Recovery Data

- Table below gives the statement for month wise data for waste water treated and water recovery achieved for recycle. Recycled & treated effluent water is reused as CT makeup.
- **Average recycled water quantity is around 127 m^3/day and is 37% of the total effluent generated (332 m^3/day).**

Table 12 : Monthwise Waste Water Treated & Recovery

Month	Total Inlet effluent (m^3)		ETP to CETP Quantity (m^3)		RO permeate and MEE condensate transferred to CT (m^3)
Apr-21	4619		6035		4243
May-21	8546		6383		5321
Jun-21	10255		6128		5627
Jul-21	14612		6019		4616
Aug-21	9483		5982		5134
Sep-21	19535		6211		4668
Oct-21	9877		6243		4891
Nov-21	13469		6209		5067
Dec-21	13978		6726		3489
Jan-22	9402		8919		4744
Feb-22	7577		5647		3878
Mar-22	9229		5938		2306
Average	**11449**		**6370**		**4499**
Total	**130581**		**76441**		**53983**
m^3/day	**382**		**212**		**150**
Apr-22	7873		5977		2943
May-22	8479		5933		2547
Jun-22	7700		5882		3231
Jul-22	10429		6115		2750
Aug-22	8411		6095		1958

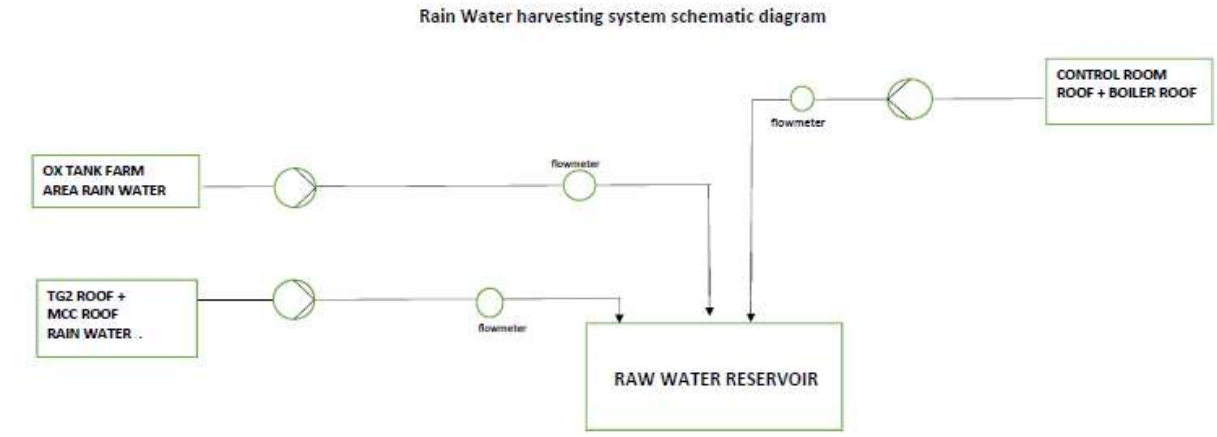
Sep-22	8475		5198		2097
Oct-22	9339		5869		2429
Nov-22	8405		6114		1519
Dec-22	8885		6337		3241
Average	**8486**		**5947**		**2524**
Total	**76374**		**53520**		**22715**
m^3/day	**283**		**198**		**84**

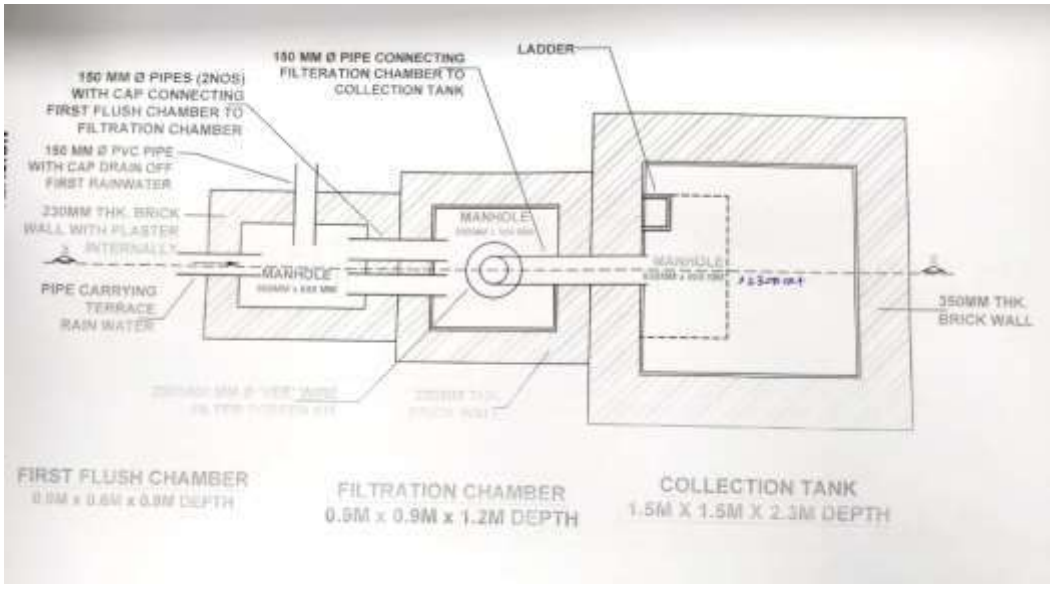
4.5 Rain Water Harvesting

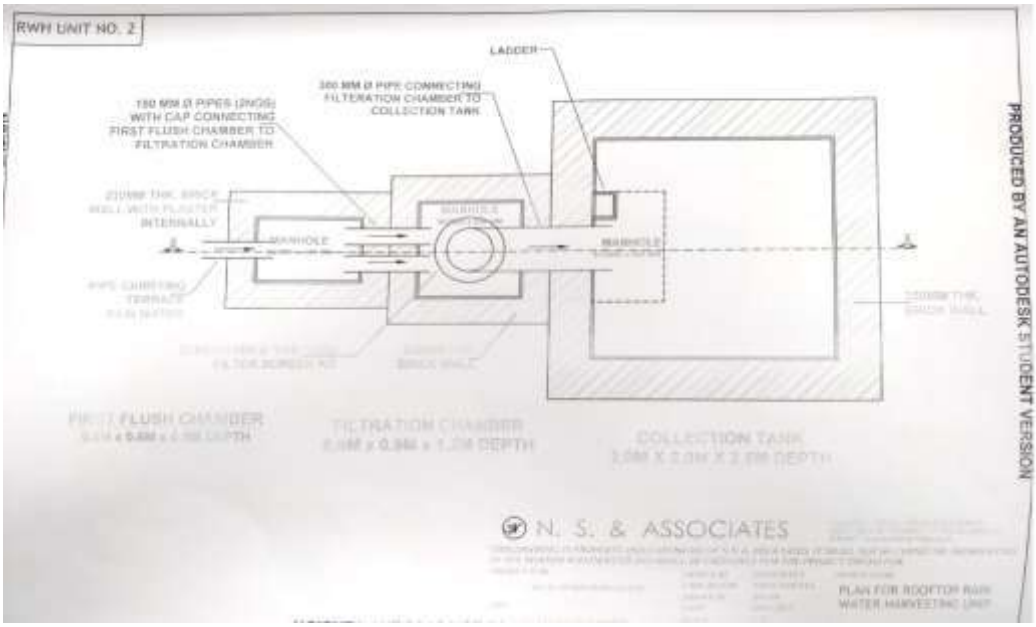
- Plant has implemented surface run off and available roof top based rain water harvesting system. Harvesting rainwater from roof-tops is an easy and eco-friendly method of augmenting plant level water availability. Roof-top rainwater harvesting involves diverting and recharging rainwater that falls on the building roofs / terraces to respective collection tanks on ground. Rain water harvesting system includes plant building roofs / terraces, paved flooring, water channels and collection tanks with level based pumping units. The rainfall runoff has been diverted to the artificial recharge system through the drain system constructed. This method has proved very effective for the plant and has assisted in reducing fresh water intake and also augmenting the ground water level of the area.

- Plant has collected **6073 m^3 of rain water in FY 2022 and 13220 m^3 in FY 2023** and **has improved** it from **0.56% to 1.431%** of the total raw water usage. Although quantity is small, plant management is undertaking additional efforts to augment the same through better collection efficiency, maintaining clean water channels and minimizing over flow from collection tanks.

Figure 9 : Rain Water Harvesting System Schematic Diagram







5 WATER CONSERVATION OPPORTUNITIES

5.0 Water Conservation

- Water savings can be achieved in industry through a combination of changing behavior, modifying and/or replacing equipment with water saving equipment to reduce overall water consumption and increase internal reuse.
- Water savings starts with,
  - Assessing the current water usage and identifying waste streams.
  - Build understanding among employees and co-workers about importance of water conservation.
  - Make them aware of water scarcity issues and impact of water conservation practices.
  - Educate employees so that they will be able to identify problems and generate solutions to reduce water use within the company.
  - Engage employees in problem-solving to reduce water usage.
  - Apply sub metering to determine use by location or equipment.
  - Calculate average water use by department or process. Rank processes/departments by water use to determine where to focus conservation goals.
  - Survey plant operations to determine areas where water is wasted or could be reused.
  - Check piping regularly and identify leaks.
- Based on the information collected and observations, the following can be recommended at IGPL to reduce water use and increase its efficiency.

5.1 Separate Regeneration Backwash Water at MGF + ACF and SAC + SBA at DM Plant

- Regeneration backwash water at DM plant from all media filters, ACF and also from SAC & SBA is collected in common Neutralizing pit and then taken for treatment at ETP. This makes the entire waste water prone to acidic – alkaline nature. It is proposed to separate the MGF + ACF backwash water which is neutral and collect in separate N – pit and thus making it suitable for use directly as CT makeup without requiring any treatment. This will also reduce the ETP load and further minimize chemical use for treatment.
- Estimated average quantity of backwash water generated at MGF+ACF is 30 m^3/day and can thus help minimize fresh water makeup at CT.

5.2 Improving Condensate Recovery & Minimise DM Water Use at Boilers

- **Plant Comments :** Already being practiced at plant level.

5.3 Improving Cooling Tower CoC for Minimising Make Up Water Use

- **Plant Comments** : Already being practiced at plant level.
- Plant is operating at maximum possible CoC limits and in addition **has installed an electrolytic system for two towers to augment CoC and reduce blowdown & makeup requirement. Same is under review and stabilization.**

5.4 Review potential for Water Recovery from Boiler blow down

- Boilers are not operated continuously and are in banking condition only, hence blow down quantity is negligible.

5.5 Water Saving Faucets

- Water efficient faucets and fixtures are available in the market now days to reduce water consumptions in wash basins by reducing flow without compromising comfort level of user. The audit team has conducted the flow sample base measurement on existing taps installed in wash basin to identify the water saving potential at faucets. It is observed that flow of existing tap/faucets is 12 lt/min (LPM). Plant can install such flow regulator's for these fixtures. This results in impressive savings of around 50% of faucets water use. Flow regulators, especially the aerators are inexpensive and are easy to install and maintain. This is why they are often considered as the low hanging fruits of water saving programs.

- The daily water consumption for wash basins in IGPL is estimated at 10 m^3/day at 100 nos. Faucets of Washbasins. It is estimated that by installing water efficient faucets atleast 50% (i.e. 5 m^3/day) of water can be saved from the faucets which can give savings of Rs. 0.75 lakh p.a. through water conservation (with water cost Rs 40 / m^3). The total investment required for installing water efficient faucets is Rs. 0.50 (considering 100 Faucets to be replaced at Rs. 500/Faucet). Thus, the simple payback period for replacing 100 Faucets is 8 months.

5.6 Water Saving At Urinals

- Waterless urinals are used at most of the locations where significant number of people visit such as public rest rooms, malls, airports etc to enable to reduce water consumption. In addition, there are few urinal screen mats also available in the market which help to reduce the water use. These urinal screen mats not only create fragrance but also act as a screen guard for any other solid waste thrown thus preventing blocking of drain pipes and chokes.

6 Annexure's

6.0 Reference Documents

6.1 MPCB Consent to Operate Renewal

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: cac-cell@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

RED/L.S.I (R57)
No:- Format1.0/CAC/UAN No.MPCB-CONSENT-0000115836/CR/2207000116

Date: 02/07/2022

To,
M/s I G Petrochemicals Ltd.,
Plot Nos. T-1, T-2, T-2/1, V-11, V-12, V-13, V-14 & V-45 Taloja Industrial Area,
MIDC,Taloja, Tal. Panvel, Dist. Raigad - 410 208.

Your Service is Our Duty

Sub: Grant of Renewal of Consent to Operate under Red/LSI

Ref:
1. Environment Clearance accorded vide No. F. No. J-11011/ 73/ 2016-IAII(I) dtd. 18/07/2017.
2. Environment Clearance amendment accorded vide No. F. No. J-11011/ 73/ 2016-IAII(I) dtd. 20/02/2018.
3. Consent to Operate granted vide No. Format 1.0/ CC/ UAN No. 0000101662/ CO-2107000003 dtd. 01/7/2021
4. Minutes of Consent Appraisal Committee meeting held on 20/5/2022

Your application No.MPCB-CONSENT-0000115836 Dated 15.06.2021

For: grant of Consent to Renewal under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to renewal is granted for a period up to 31/08/2026**
2. **The capital investment of the project is Rs.1169.8758 Crs. (As per C.A Certificate submitted by industry Existing C.I. Rs. 1167 Crs + Increase in C.I. Rs. 2.8758 Crs)**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Di Ethyl Phthalate/ Di Methyl Phthalate	12600	MT/A
2	Maleic Anhydride	7660	MT/A
3	Phthalic Anhydride	222110	MT/A
4	Benzoic Acid	1500	MT/A
5	Power (Transmitted to Grid)	2.5	MW

I G PETROCHEMICALS LTD/CR/UAN No.MPCB-CONSENT-0000115836 (02-07-2022 11:28:07 pm) /QMS.PO6 F02/00

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4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	791	As per Schedule-I	Recycle 607 CMD treated effluent into process, for cooling tower make up, fire-fighting, utility purposes etc. and discharge 220 CMD treated effluent into CETP
2.	Domestic effluent	36	As per Schedule-I	As above

5. **Conditions under Air (P& CP) Act, 1981 for air emissions:**

Sr No.	Stack No.	Description of stack / source	Number of Stack	Standards to be achieved
1	S-1	Boilers (3 Nos.)	1	As per Schedule -II
2	S-2 (A&B)	PA- I & II -Hot Oil Heaters	1	As per Schedule -II
3	S-3	PA-I Scrubber	1	As per Schedule -II
4	S-4	PA-II Scrubber	1	As per Schedule -II
5	S-5	PA-III Scrubber	1	As per Schedule -II
6	S-6	PA De-Dusting-1	1	As per Schedule -II
7	S-7	PA De-Dusting 2	1	As per Schedule -II
8	S-8	PA De-Dusting 3	1	As per Schedule -II
9	S-9	MA Bagging	1	As per Schedule -II
10	S-10	MA Flaker	1	As per Schedule -II
11	S-11	DG Set (2000 KVA)	1	As per Schedule -II
12	S-12	PA-IV Scrubber	1	As per Schedule -II
13	S-13	PA-IV Scrubber	1	As per Schedule -II
14	S-14	PA De-Dusting 4	1	As per Schedule -II
15	S-15	D.G. Set (2500 KVA)	1	As per Schedule -II

6. **Non-Hazardous Wastes:**

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	Debris during maintenance activities like insulation/ packing material/ scrap iron etc.	9.0	MT/M	NA	Sale to Auth. Party/ CHWTSDF
2	Biological sludge from waste water treatment	35	MT/M	Drying	Used as manure for gardening

6.2 Cooling Tower Blowdown Water Analysis Report

CT-1 Cooling Tower Parameter								
Analysis Date	Unit	C. Hardness	Chloride	Conductivity	pH	T. Hardness	TDS	Turbidity
19-12-2022	PA1	322	324	1759	7.5	660	1045	7.1
20-12-2022	PA1	308		1702	7.7	628	1018	12.3
21-12-2022	PA1	286		1793	7.4	588	1075	8.3
22-12-2022	PA1	288		1796	7.6	596	1072	9.1
23-12-2022	PA1	289	318	1787	7.7	604	1072	9.4
24-12-2022	PA1	312		1777	7.7	628	1062	5.2
26-12-2022	PA1	316	348	1743	7.8	648	1045	8.5
27-12-2022	PA1	338		1797	7.8	684	1072	3.3
28-12-2022	PA1	298		1706	7.7	604	1018	4.2
29-12-2022	PA1	322		1731	7.9	648	1032	4.6
30-12-2022	PA1	296	332	1665	7.9	608	996	2.6
31-12-2022	PA1	284		1795	7.8	572	1076	7.8
	AVG							
CT-2 Cooling Tower Parameter								
Analysis Date	Unit	C. Hardness	Chloride	Conductivity	pH	T. Hardness	TDS	Turbidity
19-12-2022	PA2	270	486	2053	7.3	544	1231	15.4
20-12-2022	PA2	322	0	2113	7.3	548	1264	6.8
21-12-2022	PA2	252	0	2045	7.4	512	1227	1.09
22-12-2022	PA2	264	0	2092	7.3	548	1254	1.7
23-12-2022	PA2	252	495	2065	7.1	536	1238	7.3
24-12-2022	PA2	272	0	2035	7	560	1218	7.4
26-12-2022	PA2	258	466	1787	7.3	532	1072	21.8
27-12-2022	PA2	254	0	1582	7.4	512	948	5.9
28-12-2022	PA2	222	0	1554	7.1	440	926	13.3
29-12-2022	PA2	224	0	1676	7.1	456	998	14.8
30-12-2022	PA2	228	425	1641	7.5	464	978	18.3
31-12-2022	PA2	234	0	1614	7.5	468	966	15.3
CT-3 Cooling Tower Parameter								
Analysis Date	Unit	C. Hardness	Chloride	Conductivity	pH	T. Hardness	TDS	Turbidity
19-12-2022	PA3	234	284	1432	7.5	472	856	9.8
20-12-2022	PA3	246		1487	7.5	508	892	6.6
21-12-2022	PA3	238		1484	7.4	480	884	6.2
22-12-2022	PA3	272		1487	7.5	456	892	5.8
23-12-2022	PA3	236	316	1465	7.5	476	875	3.4

24-12-2022	PA3	254		1454	7.5	528	868	2.6
26-12-2022	PA3	242	328	1418	7.6	488	848	16.2
27-12-2022	PA3	242		1476	7.6	488	885	2.3
28-12-2022	PA3	262		1479	7.5	528	884	5.3
29-12-2022	PA3	246		1487	7.5	502	886	9.6
30-12-2022	PA3	262	351	1504	7.6	536	901	8.4
31-12-2022	PA3	252		1497	7.5	512	892	10.4

CT-4 Cooling Tower Parameter

Analysis Date	Unit	C. Hardness	Chloride	Conductivity	pH	T. Hardness	TDS	Turbidity
19-12-2022	PA4	294	372	1146	7.4	594	685	14.1
20-12-2022	PA4	296		2002	7.5	604	1194	1.3
21-12-2022	PA4	274		1697	7.5	552	1018	2.4
22-12-2022	PA4	252		1793	7.5	504	1072	2.7
23-12-2022	PA4	258	287	1629	7.5	520	977	6.2
24-12-2022	PA4	268		1695	7.6	544	1014	6.1
26-12-2022	PA4	266	333	1533	7.7	548	918	8.8
27-12-2022	PA4	266		1620	7.5	548	968	3.8
28-12-2022	PA4	246		1624	7.6	504	968	4.6
29-12-2022	PA4	242		1494	7.8	492	892	6.7
30-12-2022	PA4	248	320	1517	7.7	504	910	3.4
31-12-2022	PA4	272		2062	7.7	556	1234	8.8

RAW WATER PARAMETERS

Analysis Date	Unit	C. Hardness	Chloride	Conductivity	pH	T. Hardness	TDS	Turbidity
19-12-2022	Raw water	32	18	119	7.1	58	70	7.8
21-12-2022	Raw water	28	0	120	7.1	62	72	10.8
23-12-2022	Raw water	26	21	122	7.8	60	58	9.1
26-12-2022	Raw water	24	16	106	7.1	56	62	10.4
28-12-2022	Raw water	24	0	121	7.2	48	71	3.6
30-12-2022	Raw water	30	28	123	7.3	64	74	9.7

6.3 ETP Inlet Effluent Sample Analysis Report

ADITYA ENVIRONMENTAL SERVICES PVT. LTD.
Testing Laboratory is certified by **ISO 9001:2015& ISO 45001:2018**
Recognized by **MoEFCC** as **"Environmental Laboratory"** valid up to 24.04.2024
Laboratory: P-1, MIDC Mohopada, P.O. Rasayani, Dist. Raigad Pin 410222
Tel: 02192 252008, **CIN**: U74999MH2001PTC132091

TC-7085

Effluent Quality Test Report

Ref. No.: AESPL/LAB/W-22/03/34 **Issue Date:** 14/03/2022

Name of Client	:	I.G. Petrochemicals Ltd Plot No. T-2, Taloja MIDC Industrial Area Dist.: Raigad
Name of site	:	Taloja
Nature of sample	:	Effluent
Location of sample	:	Untreated – Inlet sample
Sample identification number	:	W-22/03/34
Sample Quantity & Container	:	**A**-1lit; PF, **F**-1lit; PF & **B**-500 ml; G
Environmental Condition	:	**Area**: Clean, **Water Temp**: 27°C, **Amb. Temp**: 31°C
Date of sample drawn	:	07/03/2022
Date of sample receipt	:	08/03/2022
Date of sample analysis	:	08/03/2022 – 12/03/2022
Sample drawn by	:	Client
Sample transported by	:	AESPL
Project/ Job number	:	IG-J-LPO/2019050086, dated 03.06.2019
Reference of sampling	:	AESPL/LAB/QR/7.3.3/R-02
Method of sampling & preservation	:	AESPL/LAB/SOP/7.3.1/W-01

Sr. No.	Parameter	Result	Method of analysis
1.	pH @ 25°C	6.20	APHA-2017(4500H^+-B)
2.	SS, mg/l	1250	APHA-2017(2540-D)
3.	COD, mg/l	3200	APHA-2017(5220-B)
4.	BOD @ 27°C for 3 days, mg/l	1066	IS-3025 (Part 44) RA2019
5.	TDS, mg/l	1510	APHA-2017(2540-C)
6.	Chloride, mg/l	59	APHA-2017(4500Cl^--B)
7.	Sulphate, mg/l	191	APHA-2017(4500SO_4^{2-}-E)
8.	TAN, mg/l	0.84	APHA-2017(4500NH_3-B)
9.	Oil & Grease, mg/l	< 2.0	IS-3025 (Part 39) RA2019

Note:

1. The test report shall not be reproduced except in full, without written approval of laboratory.
2. Results relate only to the items tested.
3. Any query related to this report will be entertained within 15 days of the report issue date only and the sample will also be retained for the same period.
4. The results apply to the sample as received.

Reshma S. Patil
(Authorized Signatory – Pollution & Environment)
-End of Test Report-

We Are Listening & Want to Improve - Complaint Register is Available with us Page 1 of 1
Reg. Office: 107, Hiren Light Industrial Estate, Mogul Lane, Mahim, **Mumbai - 400016Tel:** 022 42127500 **E-mail:** contact@aespl.co.in

6.4 ETP Outlet Effluent Sample Analysis Report

ADITYA ENVIRONMENTAL SERVICES PVT. LTD.
Testing Laboratory is certified by **ISO 9001:2015& ISO 45001:2018**
Recognized by **MoEFCC** as **"Environmental Laboratory"** valid up to 24.04.2024
Laboratory: P-1, MIDC Mohopada, P.O. Rasayani, Dist. Raigad Pin 410222
Tel: 02192 252008, **CIN**: U74999MH2001PTC132091

TC-7085

Effluent Quality Test Report

Ref. No.: AESPL/LAB/W-22/03/35 **Issue Date:** 14/03/2022

Name of Client	:	I.G. Petrochemicals Ltd Plot No. T-2, Taloja MIDC Industrial Area Dist.: Raigad
Name of site	:	Taloja
Nature of sample	:	Effluent
Location of sample	:	Treated – Outlet sample
Sample identification number	:	W-22/03/35
Sample Quantity & Container	:	**A**-1lit; PF, **F**-1lit; PF & **B**-500 ml; G
Environmental Condition	:	**Area**: Clean, **Water Temp**: 27°C, **Amb. Temp**: 31°C
Date of sample drawn	:	07/03/2022
Date of sample receipt	:	08/03/2022
Date of sample analysis	:	08/03/2022 – 12/03/2022
Sample drawn by	:	Client
Sample transported by	:	AESPL
Project/ Job number	:	IG-I-LPO/2019050086, dated 03.06.2019
Reference of sampling	:	AESPL/LAB/QR/7.3.3/R-02
Method of sampling & preservation	:	AESPL/LAB/SOP/7.3.1/W-01

Sr. No.	Parameter	Result	MPCB Consent Limit	Method of analysis
1.	pH@ 25°C	7.35	6.0-8.5	APHA-2017(4500H^+-B)
2.	SS, mg/l	20	< 100	APHA-2017(2540-D)
3.	COD, mg/l	90	< 250	APHA-2017(5220-B)
4.	BOD@ 27°C for 3 days, mg/l	32	< 100	IS-3025 (Part 44) RA2019
5.	TDS, mg/l	850	< 2100	APHA-2017(2540-C)
6.	Chloride, mg/l	221	< 600	APHA-2017(4500Cl^--B)
7.	Sulphate, mg/l	138	< 1000	APHA-2017(4500SO_4^{2-}-E)
8.	TAN, mg/l	< 0.56	< 50	APHA-2017(4500NH_3-B)
9.	Oil & Grease, mg/l	< 2.0	< 10	IS-3025 (Part 39) RA2019

Conformity Statement: Water sample is within permissible limits prescribed by MPCB w.r.t. above mentioned tests.

Note:

1. The test report shall not be reproduced except in full, without written approval of laboratory.
2. Results relate only to the items tested.
3. Any query related to this report will be entertained within 15 days of the report issue date only and the sample will also be retained for the same period.
4. The results apply to the sample as received.
5. Decision Rule is applied.

Reshma S. Patil
(Authorized Signatory – Pollution & Environment)

We Are Listening & Want to Improve - Complaint Register is Available with us Page 1 of 2
Reg. Office: 107, Hiren Light Industrial Estate, Mogul Lane, Mahim, **Mumbai - 400016Tel:** 022 42127500 **E-mail:** contact@aespl.co.in

ADITYA ENVIRONMENTAL SERVICES PVT. LTD.
Testing Laboratory is certified by **ISO 9001:2015& ISO 45001:2018**
Recognized by **MoEFCC** as **"Environmental Laboratory"** valid up to 24.04.2024
Laboratory: P-1, MIDC Mohopada, P.O. Rasayani, Dist. Raigad Pin 410222
Tel: 02192 252008, **CIN**: U74999MH2001PTC132091

Effluent Quality Test Report

Ref. No.: AESPL/LAB/W-22/03/35 **Issue Date:** 14/03/2022

Name of Client	:	I.G. Petrochemicals Ltd Plot No. T-2, Taloja MIDC Industrial Area Dist.: Raigad
Name of site	:	Taloja
Nature of sample	:	Effluent
Location of sample	:	Treated – Outlet sample
Sample identification number	:	W-22/03/35
Sample Quantity & Container	:	**A**-1lit; PF, **F**-1lit; PF & **B**-500 ml; G
Environmental Condition	:	**Area**: Clean, **Water Temp**: 27°C, **Amb. Temp**: 31°C
Date of sample drawn	:	07/03/2022
Date of sample receipt	:	08/03/2022
Date of sample analysis	:	08/03/2022 – 12/03/2022
Sample drawn by	:	Client
Sample transported by	:	AESPL
Project/ Job number	:	IG-I-LPO/2019050086, dated 03.06.2019
Reference of sampling	:	AESPL/LAB/QR/7.3.3/R-02
Method of sampling & preservation	:	AESPL/LAB/SOP/7.3.1/W-01

Sr. No.	Parameter	Result	MPCB Consent Limit	Method of analysis
10.	Bioassay, %	100% survival	90%survival of fish after 96 hr in 100% effluent	IS-6582(Part 2) 2001
11.	Bioassay, %	5 out of 5 fishes survived @ T_F=1 after 48 hrs	--	IS-6582(Part 2) RA 2019 Amendment- 01 Dec 2002

Conformity Statement: Sample is within permissible limit prescribed by MPCB consent w.r.t. above mentioned test.

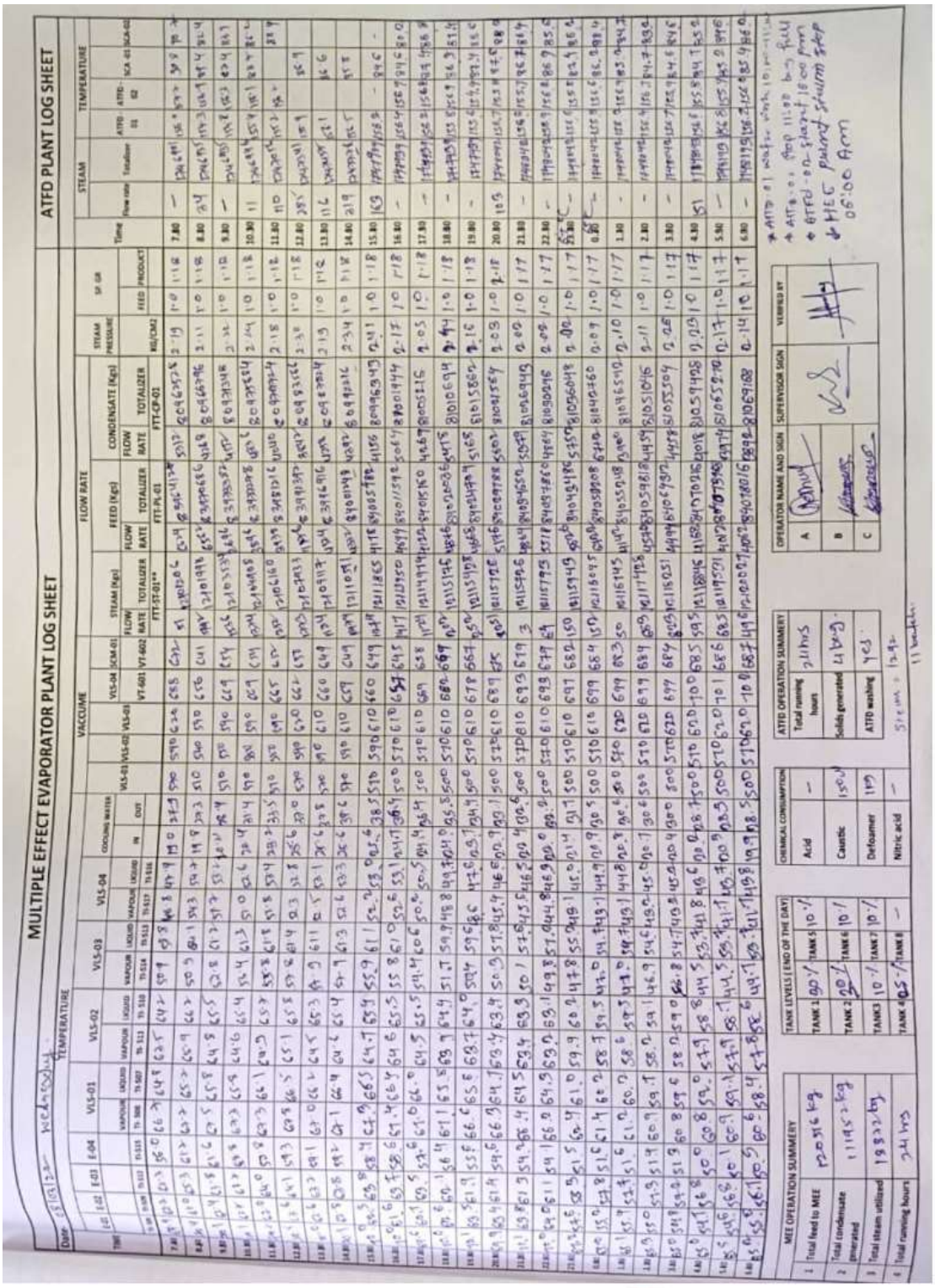
Note:

1. T_F=1 denotes Toxicity factor which is equivalent to 100 % effluent.
2. The test report shall not be reproduced except in full, without written approval of laboratory.
3. Results relate only to the items tested.
4. Any query related to this report will be entertained within 15 days of the report issue date only and the sample will also be retained for the same period.
5. The results apply to the sample as received.

Reshma S. Patil
(Authorized Signatory – Pollution & Environment)

-End of Test Report-

6.5 MEE Operating Log Sheet Sample Copy



-- End of report --

ANNEXURE -IX

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IG Petrochemicals Limi
MIYAWAKI PLANTATION
Akira Miyawaki is a Japanese botanist and specialist
ecology who focused on seeds and natural forests U
technique, two to four trees are planted per squar
Miyawaki plantations become self-sufficient after two
years of growth. They aid in lowering the temper
concrete heat islands, reducing air and noise pollution,
local birds and insects, and produce carbo
The method is intended to guarantee that plant gro
times faster and that the resulting plantation is
denser than usual.By using the Miyawaki method, a fore
developed in 20 to 30 years as compared to traditional
which takes about 200 to 300 years for fully development
IGPL has planted 2000 number of varieties of trees using
method within their land premises at Taloj
Tree list that's have been planted by IGPL are as follow:-
Ghulmohar
Satwin
Neem
Badam
Arjun
Thaman
Rain Tree
Saru
Largestomia
Chickoo
Peltopharum
Thabibiya
Kanchan
Peru
Jamun
Karanj
Kaju
Sonchafa

ANNEXURE -IX

ANNEXURE -IX

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ANNEXURE -IX

Annexure - X

Awareness Campaign

Awareness on 'Ban of Single use Plastic' and Distribution of Eco-friendly alternatives

by

M/s IG PETROCHEMICALS LTD

T-2 MIDC TALOJA, DIST: RAIGAD

PIN-410208

Introduction

Single use Plastic is one of the biggest issue that impacts our daily lives and also cause enormous damage to the environment. It has a much bigger social footprint and Ban of single use plastics has to be evaluated from 3 fronts:

1. The impact on Environment
2. The impact on the lives of Flora and Fauna
3. The impact on Society

While various governments across different countries and even in India have tried to ban the sale and consumption of single use plastics, these attempts have only been partially successful as the approach has not been holistic with environment friendly alternatives to replace this cheap option not made available.

Not withstanding the success ratio, it is imperative that organizations and the government should continue to emphasize the importance of this initiative using different approaches to educate, enlighten and bring about a psychological change in the attitude of society towards this critical task.

M/s IG Petrochemicals Ltd, a socially and environmental conscious organization, had decided to undertake such an initiative in 3 villages; Pale, Kolwadi and Valap, which are situated close to their location at Taloja to educate and to try and mitigate the serious damage to environment caused by single use plastics. Oriearth Nature Foundation was identified to take forward this message to the villagers in the 3 identified villages and to bring about a change in the mindset of the villagers.

The Plan

Oriearth Nature Foundation, identified various methodologies that could be adopted to uniquely spread the message and succeed in this mission of involving villagers in bring about the change that we desire in society.

The plan included the following initiatives:

1. Involving the senior authorities in each village including the Sarpanch
2. Involving female residents as they are instrumental in bringing about the change in each family
3. Conducting Street plays to convey the message
4. A rally within the village using posters to spread the message
5. Show them the way by collecting single use plastics lying around the villages
6. Distribute Cloth bags which are an eco-friendly option. Using heavy duty cloth bags will eliminate the need to seek plastic bags to carry vegetables and provisions
7. Distribute reusable steel bottles to eliminate the need for buying plastic bottles for drinking water

The action undertaken

On 26th of February 2023, volunteers, and staff of both IGPL and Oriearth Nature Foundation headed towards Panvel from Pune. Along with 41 volunteers, which included 3 coordinators and a few staff members from Fergusson College and H.V. Desai college, Pune gathered at a fixed pick-up location at 7-30 AM and started the journey from Pune.

VILLAGE 1 – PALE

Upon arrival at 11 AM, all the local villagers led by the Sarpanch, welcomed the IGPL team as well as all the others. Breakfast was served in the temple's courtyard which is situated in front of Pale Gram panchayat. The inauguration was followed by a brief felicitation of all the representative members by the Grampanchayat valuing the importance of the initiative.

Shir J.K Saboo, Executive Director of IGPL, along with his colleagues Shri Pinto and Shri Hariharan were welcomed by Sarpanch and other members of gram panchayat, along with student representatives, volunteers and the team from Oriearth were also welcomed.


IGPL

After inauguration distribution of eco-friendly products to villagers, products such as cloth bags, and metal bottles were distributed.

After distribution by company staff, volunteers presented a street play focusing on the issue of single use plastic among the general population, highlighted points were –

1. Importance of break on single use plastic
2. Problems caused due to use of single use plastic
3. Solutions to be applied at the local level by villagers

The street play met with very encouraging response from the villagers and they undertook a pledge to put in their best efforts to eliminate single use plastics from their village

Continuing after the play, the volunteers and everyone along with locals started a plastic waste collection drive throughout the village with delivering awareness about threats and solutions about single use plastic use in daily life. After collection of substantial amounts of plastic waste from all over the village, the collected waste was later given and/or disposed of through proper authority.

Continuing with the drill to the next village, all the volunteers and staff of Oriearth Nature foundation headed to the next village

VILLAGE 2 – KOLWADI

Upon arriving at village Kolwadi, the volunteers gathered the local village crowd by conducting the street play once again. Awareness speech in local language with inspiring quotes was spread among the crowd. Followed by the play, plastic cleanliness drive in biodegradable bin bag was carried out by everyone preset.

Distribution of eco-friendly products was again carried out among the village locals who participated in the cleanliness drive. Distribution was conducted by Oriearth Nature Foundation members, & also gram panchayat members to all the participating villagers. Here too, the response from local villagers, especially the women, were phenomenal. They were very keen to take forward the knowledge that they received on the easy methods that they can adopt in their daily lives to prevent the use of plastics which has a direct impact on their lives and the health

of their family.

The Sarpanch of the Kolwadi arranged lunch & refreshments for everyone & following the lunch a place for relaxation for all the students and everyone else. After lunch the group went to the next village.

VILLAGE 3 – VALAP

The initiative at Village Vallap also started with the street play which brought out the villagers form their home, The street play was met with encouraging claps from all the villagers present

Next an awareness rally with plastic collection drive was conducted with the villagers. Subsequently, the distribution of eco-friendly bags and metal bottles was carried out

The staff of Valap village primary school provided excellent support in conducting the distribution and conducting the awareness program. The locals were very inspired because of the awareness campaign and understood its importance. They too undertook a pledge to keep their village clean and green and requested us to come again to explain what more can be done to ensure sustainable practices can be followed in future

Certificates for participation for all the present villagers were distributed by Oriearth Nature Foundation in all the 3 villages.

CONCLUSION

Our observations from the initiatives are as under:

1. Villagers in general are very receptive to the idea of environmental protection and following of sustainable practices.
2. The villagers need constant guidance for atleast couple of years after which Ban of single use plastics will become a habit
3. Cheaper but environmental friendly options for daily use items to be devised which can bring about a faster adoption of sustainable practices within the villages
4. Street plays reflecting the daily challenges faced by villagers and smart options to eliminate the difficulties are much more receptive and well understood by villagers. Simply putting up advertisements and banners will not bring about the desired change in the mindset of the people
5. Villagers like to be understood and authorities should not try the option of 'One size fit's all'. Each village has a different set of challenge and we must help them find the suitable solution that best meets with their geography and social culture

After a very enlightening day with the 3 villagers, the volunteers left back for Pune with a great sense of achievement and a much deeper understanding of the daily life challenges faced by villagers. Environmental issues need to addressed at a local level and smart solutions can be found if we try and find a mid-path. We are travelling on the village road and not on an expressway. Solutions must be cheap to be accepted. We must try to understand the villagers and help them find the solution that best suits their need

We @ Oriearth Nature Foundation would like to express our sincere thanks to the management of M/s IG Petrochemicals Ltd for believing in us and giving us an opportunity to work on the critical initiative of '**Ban of Single Use Plastics'.**For us it was an eye-opener to reflect on why change is always believed to be difficult. The problem lies in our understanding of the challenge at a grass root level.

Dr. Vinayak Chavan
Director
ORIEARTH NATURE FOUNDATION

Mr. Jeevan Shewale
Director
ORIEARTH NATURE FOUNDATION

ORIEARTH NATURE FOUNDATION ★ PUNE 411033

ORIEARTH
NATURE FOUNDATION

Connect – Contribute - Conserve

SKILL DEVELOPMENT

Skill Development Initiative at Ghot Camp (Koyana Vele)

M/s IG PETROCHEMICALS LTD

T-2 MIDC TALOJA, DIST: RAIGAD

PIN-410208

By

SKILL DEVELOPMENT PROGRAM IN GHOT CAMP BY I G PETROCHEMICAL LTD.

INTRODUCTION -

In this report, highlights various skill development activities undertaken for various age groups such as dry snacks, dairy products, paper bags, Bandhani materials and solar panel installation maintenance etc. The rural community has a lot of potential to become self-sufficient and improve their quality of life by utilizing the resources they have available. By using the skills and knowledge gained through these skill development training, trainees can make the most of what they have and develop new skills to help you thrive. We explored the various ways in which they can use **dry snacks** and homemade **dairy products** to not only provide healthy and nutritious food for their family but also generate income through the sale of these products. Training also looked for how to create sustainable and environmentally eco-friendly **paper bags** as a viable business opportunity. Moreover, we dived into the art of **Bandhani** material, a traditional fabric dyeing technique that is unique to India. Trainees learned how to create beautiful patterns and designs, and how to turn your creations into a profitable business venture. Finally. we explored the potential of **solar energy** and how it can be used to power home and business, reduce your electricity bills, and create a sustainable and eco-friendly future. By the end of this workshop, trainees gained valuable knowledge of these resources to create a better future for themselves and local communities.

The program was held on 30th April 2023, in Ghot Camp area, which was funded by M/s IG Petrochemical Ltd and executed by M/s Oriearth Nature Foundation, with help of by Shree Kedar Nath Krida Mandal, Shree Kedar Nath Koyanavele Gram Vikas Mandal, Shree Waghjayi Mahila Mandal, Koyanavele in presence of authorities of IGPL namely Mr. Ronald Pinto, Mr. Hariharan and Mr. More. For the rural localities this program was held to provide the knowledge of those various factors. The local social group “MAHILA BACHAT GAT” women were also present for this workshop. The purpose of this program is to provide the various skills to the locals for.

Skill Development Training:

Following training were conducted at Ghot Camp (Koyana Vele) and total of 74 local people participated in this skill development initiative.

1. Dry Snacks Food:

A total of 24 women trainees were participated. Dry snacks, also known as shelf-stable snacks, are food products that have a longer shelf life than fresh snacks due to their low moisture content. These snacks are typically pre-packed and can be easily transported, making them popular in rural areas where access to fresh food may be limited. The usage of dry snacks in rural areas can have several benefits for skill development. First, it can promote entrepreneurship by providing an opportunity for individuals to start small businesses selling these snacks. This can help to develop skills in marketing, sales, and finance.

Second, dry snacks can be used in cooking and meal preparation, which can help to develop culinary skills. In addition, these snacks can be stored through food preservation techniques such as pickling and dehydrating, which can help to develop knowledge and skills in food preservation. Finally, the consumption of dry snacks can

provide a convenient and nutritious source of energy for individuals who may not have access to fresh produce or other perishable foods. This can help to promote good health and well being, which is essential for skill development and productivity. Overall, the usage of dry snacks in rural areas can have a positive impact on skill development by promoting entrepreneurship, developing culinary skills, and providing a convenient and nutritious source of energy.

List of Dry Snacks food items prepared during the training session list-

- Popcorn
- Shegdana Chikki
- Bhadang Chiwda
- Alepak
- Spicy Penuts, Spicy Chana
- Rajgira ladoo
- Potato Chips
- Macca Chivda

2. Dairy Products:

A total of 15 women trainees were participated**.** Dairy products are a vital component of a healthy and balanced diet. They are rich in essential nutrients such as calcium, vitamin D, protein, and other minerals that are important for the growth and development of our body. Dairy products have been a part of the human diet for centuries, and they have proven to be an important source of nutrition, especially for rural communities.

Dairy products can play an important role in meeting their nutritional needs. Additionally, dairy products are a good source of income for rural communities, as they can be easily produced and sold in local markets. To promote the usage and benefits of dairy products for health and nutrition in rural communities, a skill development workshop was organized. This workshop was designed to provide participants with the knowledge and skills needed to produce and market high-quality dairy products. The workshop covered topics such as the importance of dairy products in a balanced diet, the basics of dairy production, quality control, and marketing

strategies. Participants could learn how to produce dairy products such as milk, yogurt, cheese, and butter, using locally available resources. By attending this workshop, local population can benefit from this knowledge and skills gained, which can help improve their health and economic well-being. With proper training and support, rural communities can produce high-quality dairy products that meet the demands of local markets, and generate income for themselves and their families.

In conclusion, the usage and benefits of dairy products for health and nutrition are numerous, especially in rural communities. Organizing skill development workshops to teach the production and marketing of quality dairy products can help improve the overall health and economic well-being of rural communities.

List of dairy products/food items prepared during the training session list-

- Milk based sweets
- Butter
- Curd derived products

3. Paper Bags:

A total of 10 women trainees participated in this training. Paper bags are a popular and eco-friendly alternative to plastic bags for carrying items such as groceries, clothing, and gifts. Here are some of the benefits of using paper bags:

Biodegradable and recyclable: Unlike plastic bags, paper bags are biodegradable and can be easily recycled, reducing the amount of waste that ends up in landfills.

Renewable resource: Paper bags are made from wood pulp, a renewable resource that can be grown and harvested sustainably.

Strength and durability: Paper bags are strong and durable, and can hold heavy items without tearing.

Cost-effective: Paper bags are often less expensive than reusable bags, making them an affordable option for businesses and consumers.

Customization: Paper bags can be customized with logos, designs, and colors, making them a great branding tool for businesses.

Versatile: Paper bags come in a variety of sizes and styles, making them suitable for a wide range of applications.

Aesthetic appeal: Many people prefer the look and feel of paper bags over plastic bags, as they can be more aesthetically pleasing and have a more natural, organic appearance.

Overall, paper bags are a sustainable and practical choice for carrying items, and can help reduce the environmental impact of plastic bags.

4. Bandhani:

A total of 15 women trainees participated in this workshop. Bandhani is a traditional textile art form that is commonly practiced in the rural areas of India, particularly in the state of Gujarat and Rajasthan. It involves tie-dyeing fabric with small, intricate patterns using a resist dyeing technique. Bandhani fabrics are often used to create sarees, dupattas, and other traditional Indian garments.

Teaching the knowledge of Bandhani culture and materials to people in rural areas can be an effective way to promote skill development and economic empowerment.

The history and Significance of Bandhani: Bandhani is a traditional tie-dye textile art that has its roots in the culture and history of India. It is believed to have originated in the state of Gujarat, which has a rich history of textile production and trade. The word "Bandhani" comes from the Sanskrit word "bandh" which means to tie or bind. Bandhani involves tying small portions of the fabric with thread or string before dyeing it to create intricate patterns and designs. The tied areas resist the dye and create a beautiful pattern when the fabric is untied. The history of Bandhani dates back to over 5000 years when the Indus Valley Civilization flourished in the region. The discovery of terracotta figures wearing Bandhani-style clothes suggests that the technique was prevalent during that period. Bandhani has also been mentioned in ancient texts such as the Rigveda and the Jataka Tales.

Over time, Bandhani became an integral part of the cultural identity of the people of Gujarat and Rajasthan. It was used to create a wide range of textiles, from saris and dupattas to turbans and men's shirts. Bandhani also became an important part of the bridal trousseau and was considered a symbol of status and wealth. Today, Bandhani is still widely produced and worn in India and has also gained popularity globally. It is celebrated as a symbol of India's rich cultural heritage and has been recognized as an

intangible cultural heritage by UNESCO. Bandhani is an integral part of the culture and heritage of India, particularly in the regions of Gujarat and Rajasthan. It holds significant cultural and social significance for the people who create and wear it.

Bandhani is considered a symbol of good luck and prosperity. It is often worn on special occasions such as weddings, festivals, and religious ceremonies. It is believed that wearing Bandhani brings good fortune and blessings. Bandhani is an important part of the cultural identity of the people of Gujarat and Rajasthan. The intricate patterns and designs created using the tie-dye technique are unique to the region and are recognized as a hallmark of their cultural heritage. Bandhani has been passed down from generation to generation, and the knowledge and skills required to create this textile art are closely guarded and protected. Many families in Gujarat and Rajasthan have been involved in the production of Bandhani for generations, and it is an important part of their cultural legacy. The production of Bandhani provides a source of livelihood for many artisans and weavers in the region. It is a labour-intensive process that requires skilled hands and attention to detail. By supporting the

production and sale of Bandhani, we can help sustain the livelihoods of these artisans and preserve the tradition of this beautiful art form.

5. Solar installation and Maintainace:

A total of 10 trainees actively participated in this workshop. Solar energy is a renewable and sustainable source of energy that is generated from the sun's rays. It is becoming increasingly popular as a source of electricity and has numerous benefits, some of which are listed below:

Clean and renewable: Solar energy is a clean and renewable source of energy. It does not produce any harmful emissions or pollutants that can harm the environment or contribute to climate change.

Cost-effective: The cost of solar panels has decreased significantly over the years, making it a cost-effective source of electricity in many parts of the world. Once installed, solar panels require very little maintenance and can generate electricity for decades.

Energy independence: Solar energy can provide energy independence, especially for remote locations that are not connected to the grid. This can be especially beneficial for developing countries and rural areas.

Reduces carbon footprint: Using solar energy reduces our reliance on fossil fuels, which are finite and contribute to climate change. By using solar energy, we can reduce our carbon footprint and help mitigate the effects of climate change.

Salable: Solar energy is salable, which means it can be used to power small homes or even large cities. It can also be used to power transportation, such as electric cars and buses.

Job creation: The solar energy industry has created millions of jobs worldwide, ranging from manufacturing and installation to maintenance and research. Increased property value: Installing solar panels on a home or business can increase the property value and make it more attractive to potential buyers or renters. Overall, solar energy is a clean, renewable, and cost-effective source of energy that has numerous benefits for the environment, economy and society.

Conclusion

The skill development activities conducted in the rural community have the potential to bring about significant positive changes in the lives of the participants. The workshops focused on various areas, including dry snacks, dairy products, paper bags, Bandhani materials, and solar panel installation maintenance. The usage of **dry snacks** in rural areas not only provides a convenient and nutritious source of energy but also promotes entrepreneurship and develops

culinary skills. By producing and selling dry snacks, individuals can generate income and enhance their marketing, sales, and financial skills.

Dairy products, rich in essential nutrients, were emphasized as a vital component of a healthy diet. The workshops provided participants with the knowledge and skills to produce high-quality dairy products, such as milk-based sweets, butter, and curd-derived products. This not only promotes health and nutrition in rural communities but also offers income-generating opportunities through local markets. The promotion of **eco-friendly paper bags** as an alternative to plastic bags is an essential step towards sustainability. Paper bags, being biodegradable and recyclable, contribute to reducing waste in landfills. They also serve as a cost-effective branding tool for businesses while providing aesthetic appeal to consumers.

The Bandhani workshop focused on preserving and promoting the traditional textile art form, which has cultural and historical significance in India. By imparting the knowledge and skills of Bandhani to the participants, the workshop aimed to empower rural communities economically and preserve this unique art form.

Lastly, the training on **solar panel installation** and **maintenance** introduced the participants to the benefits of solar energy, such as its renewable nature, cost-effectiveness, energy independence, and reduced carbon footprint. By embracing solar energy, rural communities can reduce their reliance on fossil fuels, create job opportunities, and contribute to a sustainable future.

Overall, these skill development activities have the potential to transform the lives of the rural population by equipping them with valuable skills, promoting entrepreneurship, enhancing nutrition, fostering sustainability, and empowering them economically. By harnessing their

resources and knowledge, the participants can create a better future for themselves and their communities.

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