Reliance
Industries Limited

CIN: L17110MH1973PLC019786

Dated: 28th Nov '2023

To,
The Regional Officer,
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office,
A Wing – 407 & 409, Aranya Bhawan,
Near CH - 3 Circle, Sector - 10A,
Gandhinagar, Gujarat – 382 010

Sub: EC Compliance Status Reports and Six-Monthly Monitoring Reports of RIL Refinery cum Petrochemical Complexes for the period ending 30th September '2023.

Dear Sir,

Please find herewith the EC compliance status reports (Annexure I) and Six-monthly monitoring reports (Annexure II) of **RIL Refinery cum Petrochemical Complexes which includes CRZ /Environment clearance** for the period **01st April '2023 to 30th September '2023.**

The compliance and monitoring reports are being submitted as per the requirements of EIA Notification 2006.

Thanking you,

Yours truly,
For **Reliance Industries Limited**

Authorized Signatory

CC : The Regional Officer, Gujarat Pollution Control Board. Sardar Patel Bhawan, Rameshwar Nagar, JAMNAGAR.

ENVIRONMENT CLEARANCE COMPLIANCE & MONITORING REPORT

Six Monthly Report
(01st April'2023 to 30th September'2023)

Reliance Industries Ltd.
Jamnagar

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of Environment Clearance granted by MoEF vide letter no.: J-11011/25/94-IA-II(I), Dt. 15-9-1995, for Refinery complex at Jamnagar, for six months ending 30th September '2023.

Project Status: The project is completed and commissioned in 1999. It is in operation since then with consent to operate from GPCB.

Sr. No.	Stipulations		Compliance status
1	The project Authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board and the State Government.	:	Being complied with. The **summary monitoring report, Annexure II**, is based on reports submitted to GPCB on a monthly basis.
2	Any expansion of the Plant or storage facilities either with the existing / proposed products mix or new products or change in the pipeline route / location of SPM site etc. can be taken up only with the prior approval of this Ministry.	:	Complied with.
3	The total emissions of SO_2 from the refinery complex should not exceed 24 TPD after the refinery has been fully established.	:	Regular monitoring & measurement are carried out for measuring SO2 emission from the refinery complex which is below the limit prescribed. Please refer **Annexure I-A** showing average daily emission quantity of SO2. The Daily SO2 emission during 1st Half of FY2024 varied between 21.36 MT to 23.46MT.
4	The gaseous emission from various process units should conform to the standards prescribed by the concerned authorities, from time to time. At no time the emission level should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit the respective unit should be shut down immediately and should not be restarted until the control measures are rectified to achieve the desired efficiency.	:	The limits for gaseous emissions are prescribed by Gujarat Pollution Control Board (GPCB). The emission parameters are within the standards prescribed at all times. The recommended procedure for ensuring compliance to emission limits is followed. Please refer the monitoring reports annexed as **Annexure 2-A**
5	Sulphur recovery unit having efficiency of not less than 99% should be provided.	:	Sulphur recovery unit efficiency are in compliance. Please refer **Annexure 4-A** for SRU Efficiency.
6	Low NOx burners to avoid excessive formation of NOx should be provided	:	Low NOx burners are provided for reduction of NOx.
7	At least six ambient air quality monitoring stations should be set up in the refinery area in the down wind direction as well as where maximum ground level concentrations of SO2, NOx, HC and SPM are anticipated. The monitoring network should be decided based on the modelling exercise to represent the short term GLCs.	:	Complied with. Stipulated number of AAQM stations have been setup. Please refer **Annexure 5-A** for AAQMs results.
	A mobile van with adequate facilities to monitor ambient air quality outside the refinery premises should also be planned.	:	Mobile Ambient Air Quality Van has been established & operated at locations outside the refinery. Please refer **Annexure 6**
8	Fugitive emissions of HC from storage tanks, crude oil tanks etc. should be minimized by adopting necessary measure such as double seal floating roof tanks.	:	Complied with. All the storage tanks with emission control measures are provided. They are compliant to the Refinery standards Notified on dtd 18.03.2008.

Sr. No.	Stipulations		Compliance status
	The emission should be controlled so as to ensure that the NMHC levels outside the refinery premises does not exceed 160 ug / M3.	:	Complied
9	Adequate facilities for monitoring the fugitive emission should be provided and data recorded should be submitted every three months to CIF / SPCB and every six months to the Ministry of Environment and Forests	:	Procedure and facilities for Fugitive emission monitoring is established and the results of monitoring are recorded and submitted to GPCB .
10	The stacks should be of appropriate design and height and should be attached to pollution control systems wherever necessary. Height of Stacks attached to FCCU/HCU, CPP etc. should be decided in consultation with the State Government (SPCB).	:	All the stacks are attached to necessary control systems and are of appropriate height as per the guidelines.
11	Designing of LPG spheres including the exclusion zone should be finalized in consultation and approval of the Chief Inspector of Explosives, Nagpur and the State Pollution Control Board.	:	Designing of the Sphere has been done including the exclusion zone of storage tanks & spheres and are approved by the Chief Inspector of Explosives, Nagpur.
	The impact of fire and explosion should not cross the plant boundaries.	:	The impact of fire and explosion have been quantified in the Risk Assessment carried out and does not cross the plant boundaries.
12	Ground water should not be tapped for industrial as well as domestic uses including the township. Alternate source has to be finalized keeping in view its impact on other competent users.	:	Groundwater is not tapped for domestic or industrial use. Desalination plants have been installed to meet the total water demand of the refinery complex. Narmada water is received through approval accorded by Gujarat Water Infrastructure Ltd (GWIL).
13	Liquid effluents should be treated to conform to the standards stipulated by State Pollution Control Board / Ministry of Environment and Forests under EPA, 1986. Recycling / reuse of the treated effluent to the maximum extent possible should be planned.	:	State-of-art Effluent Treatment Plant (ETP) is provided with Primary, Secondary and Tertiary facilities to maximize the recycle and reuse of the treated water. The treated water meets all the prescribed standards.
14	Adequate number of influent and effluent quality monitoring stations have to be planned with adequate facilities specially for parameters like phenols, sulphides, oil and grease, suspended solids, BOD, COD, pH and flow.	:	All the influent and effluent parameters are monitored in the central laboratory (NABL approved) set up. The effluent parameters are monitored at source of generation and at outlet of effluent treatment plant. Please refer **Annexure 7-A.**
	The effluent discharge point should be decided in consultation with NIO and the State Pollution Control Board	:	Discharge of effluent from the complex is at a point decided in consultation with NIO & through a well-designed diffuser. The consent from GPCB has been granted for this discharge.
15	System to recover oil from the oily sludge and incineration of the residues should be provided.	:	The Oily sludge recovered from ETP is re-processed in Delayed Coker unit. The sludge from the heavy oil storage tanks generated during maintenance is sent to common incineration facility & or Co-processing in Cement Industry.
16	Hazardous substances and solid wastes handling, storage and disposal should be as per the Solid Wastes (Management and Handling) Rules, 1989 of EPA, 1986.	:	Complied with. Authorisation for Storage, Handling & disposal of HW is obtained from GPCB.

Sr. No.	Stipulations		Compliance status
17	A solid waste management plan should be submitted to the Ministry for approval within a period of six months. In case of land-fill the site should be approved by the State Govt.	:	The solid waste management plan has been submitted to the Ministry as per the requirement.
18	Cutting of trees from the project sites should be kept to minimum while developing the site and planning the infrastructural facilities.	:	The project is constructed on barren land where green belt has been established.
19	The industrial township should not be located in the down wind direction with respect to the refinery	:	Complied with.
20	Adequate sanitation facilities and cooking fuel should be provided to the labourers to avoid tree cutting and nuisance in the area.	:	Complied with. The project is already completed.
21	Affected persons due to acquisition of agricultural land or houses should be properly compensated as per the State Government norms	:	Complied with. The project is already completed.
22	The labourers or contractor should leave the place after completion of the work at site to avoid creation of slum in the adjoining areas of the projects	:	Complied with. The project is already completed.
23	The overall noise levels in and around the plant area should be kept well within the standards (85 DBA) by providing acoustic hoods, silencers etc. around the noise generating sources	:	Appropriate Engineering control measures are provided to identified sources of noise generation including provision of acoustic hoods, silencers, enclosures etc. wherever necessary The overall noise levels in and around the plant area are kept well within the standards. Please refer **Annexure 8-A.**
24	A green belt plan with adequate width and density all around the Refinery by selecting the native plant species should be developed in consultation with the local DFO. A norm of about 1500 - 2000 plants per ha. may be adopted for raising the Green Belt.	:	About 3,109 acres of the total area has been covered by tree plantation. Over 400 species have been planted conforming to the recommended density. Including, 875 acres of mangrove plantation has been carried out.
25	A long term study to assess the impacts due to emission of pollutants from the refinery on the mangroves should be undertaken and report submitted after the refinery becomes operational. The study should be conducted by a reputed institution or body approved by the Department of Environment, Government of Gujarat.	:	Periodic monitoring by NIO of entire marine ecology and mangroves is carried out.
26	Necessary approvals from Chief Explosives Directorate, Inspector of Factories, Fire Safety Inspector, etc. should be obtained and copies of the approval letters be made available to this Ministry.	:	Complied with
	On-site and off-site Emergency Preparedness Plans under Rule 13 & 14 of the Hazardous Chemical Rule, 1989 should also be prepared and approved by the Nodal Agency	:	Comprehensive On-site Emergency Preparedness Plans have been developed and approved by the nodal agencies. These are updated at regular intervals. Off-site Emergency Preparedness Plans have been developed by District Authorities. Oil Spill Contingency Plans and Marine

Sr. No.	Stipulations		Compliance status
			Disaster Management Plan prepared & approved by Indian Coast Guard.
27	The project authority should set up laboratory facilities for collection and analysis of samples under the supervision of competent technical personnel, who will directly report to the Chief Executives.	:	All monitoring, sampling and analysis of environmental parameters is outsourced to MoEF approved laboratory.
28	An Environmental Management Cell should be established with suitably qualified people to carry out various functions and should be set up under the control of a senior executive who will report directly to the Head of the organization	:	A full-fledged Environmental Cell headed by Vice President who reports to the Chief Executive and is assisted by suitably qualified engineers is set-up. The environment cell is responsible for all aspects of environmental management in the complex. Refer Departmental Organogram **Annexure 14**.
29	Medical surveillance of workers should be done regularly to avoid the possibility of contracting occupational diseases and record maintained	:	Occupational Health Department carries out regular medial surveillance of all employees annually and records are maintained. During last Six Months ending September'23, 100% PME scheduled employees have undergone medical examination.
30	The project authorities should ensure their activities conform to the recent Supreme Court Order dated 12/12/94 with respect to the Writ Petition No. 664/93 and 551/94 filed by the India Council for Enviro Legal Action Vs. Union of India. Provisions of CRZ should be complied with in respect of installations to be provided within 500 m. of HTL	:	Noted and complied.
31	The funds earmarked for the environmental protection measures should not be diverted for other purposes and yearwise expenditure should be reported to this Ministry	:	Complied with. The total expenditure for the environmental protection measures are provided in **Annexure 12.**
	A. SPM and Sub-Sea Pipeline	:	
1	The tank farms should be designed in such a way that the residual flow including floor washings do not percolate the marine areas including the nearby salt pans.	:	Appropriate design measures have been considered and implemented so that the marine areas including the nearby salt pans are not affected by the tank farm operations.
	Location of SPM / SBM and submarine pipeline should be selected in consultation with NIO, State Pollution Control Board, and Government of Gujarat (National Marine Park Authority) in such a way that the corals and mangroves are not affected.	:	Complied with.
2	Necessary approvals from the Chief Wild Life Warden, Government of Gujarat should be obtained prior to laying of SBM / COT / Sub-Marine / On-shore pipeline and necessary details in this regard should be submitted to the Ministry.	:	Complied with.
3	The flexible hoses should be periodically tested and in case of deterioration of condition, hoses should be replaced. Safety breakaway couplings should be provided in the system.	:	The flexible hoses installed are of Double carcass type with safety breakaway couplings. These hoses are inspected periodically. If any signs of deterioration or damage to the hoses is noticed, immediate measures are taken to replace the hoses.

Sr. No.	Stipulations		Compliance status
4	The marine environment should be regularly monitored for the water quality (temperature, petroleum hydrocarbons, phenols, sulphides, total organic carbon); sediment quality (trace elements, petroleum hydrocarbons, TOC and sediment size) and biological parameters (primary productivity, benthos, fish quality and growth, bio-mass, phytoplankton and zooplankton).	:	A marine environment study is conducted by NIO regularly. For monitoring all physical, chemical & biological parameters in the marine environment. Regular analysis is carried out of the seawater both upstream & downstream of the diffuser, for monitoring parameters temperature, petroleum hydrocarbons, phenols, sulphides, total organic carbon, salinity etc Please refer **Annexure 9.**
5	A Disaster Management Plan should be prepared to take care of any oil leakage in the Gulf in consultation with the Coast Guards and the Marine Park Authorities. Oil Spill contingency plan should be drawn and adequate facilities provided for combating the oil spills.	:	Complied with. The Disaster Management Plan and Oil Spill Contingency Plan are prepared. Indian Coast Guard has approved the Oil Spill Contingency Plan. Marine National Park authorities are also a signatory to the Mutual Aid Agreement between Oil Handling Agencies of the Gulf of Kutch region.
6	The project proponents should also formulate a management plan for coral reefs and mangrove afforestation in the inter-tidal region of Vadinar Sikka in consultation with the Marine Park Authorities.	:	RIL has already submitted a coral management plan to the MNP Authorities. The same has been acknowledged by them. However, there is no action recommended to RIL against the plan submitted. Mangrove plantation of 875 acres has been carried out along with MNP authorities. Management Plan for mangroves plantation is drawn up by Marine Park Authorities & RIL participates by involvement in its execution.
7	No discharge of crude oil washings should be done in the Gulf. In case washing is done, adequate ballasting facilities with proper treatment should be provided.	:	No discharge of crude oil washings is permitted at the marine facilities, as a procedure set up for marine operations.
8	Necessary approval for acquisition of forest land should also be obtained from the concerned authorities.	:	Complied with.
9	No dredging in the sea should be undertaken except where unavoidable during construction phase after providing full details and obtaining the approval of Chief Wild Life Warden, Gujarat.	:	Complied with.
	B. <u>CRUDE OIL TERMINAL (COT)</u>	:	
1	The location of COT should be decided in consultation with Government of Gujarat (National Marine Park), NIO, ZSI (Madras Office) and SPCB.	:	Complied with.
	Submerged filling in all storage facilities should be provided to minimize fugitive emissions.	:	Complied with.
2	Hydrocarbon leaks should be detected at regular intervals including the pipelines, at the joints, valves, blinds, caps, plugs and pressure relief devices using portable hydrocarbon monitor and corrective measures should be taken immediately to stop fugitive emissions.	:	LDAR programs for fugitive emissions are followed regularly in accordance with MoEF&CC notifications for minimizing and corrective actions undertaken immediately. Please refer **Annexure 13** (LDAR sample report of single unit)
3	Effluent treatment facilities for the oil based effluent should be provided so that the treated water meets the MINAS.	:	ETP that has been set up to treat oil-based effluent and the treated effluent meets the norms prescribed by GPCB.

Sr. No.	Stipulations		Compliance status
	Regular monitoring should also be carried out for pH, Oil, Phenol, sulphate and BOD and record maintained.	:	Regular monitoring of the treated effluent is carried out. The treated effluent parameters are well within the prescribed norms. Please Refer **Annexure 10.**
4	Hazardous material and wastes should be handled as per the Hazardous Waste (Management and Handling) Rules, 1989.	:	Authorisation for Storage, Handling & disposal of HW is obtained from SPCB. The handling of HW is as per the HW Rules 1989 and its subsequent amendments.
5	Melting pits of suitable design should be provided for recovery of oil from oily sludge (crude oil tanks bottom). The possibility of using chemicals/bio-surfactant for oil recovery may be explored and report submitted to this Ministry.	:	Operations endeavours to minimise sludge from tank bottom by adopting BAT. Melting pits have thus not been effective due to low oil content of oil in the sludge. The sludge generated is collected, stored and sent for Co-processing in cement kiln/incineration.
6	Raw sludge should be stored in lagoons having impervious lining with suitable run off / run on control facilities.	:	No lagoons are required as quantity of sludge generation is low and is collected in drums. The drums are sent to Common Incineration facility/ for Co-processing in cement kiln.
7	Treated sludge should be either incinerated or used for land fill purposes within the COT premises in consultation with the Gujarat Pollution Control Board.	:	Complied with. The Oily sludge is sent either for Co-processing in Cement Kiln or Common Incineration facility for disposal.
8	The ground water monitoring should be carried out around sludge lagoons and land fill sites.	:	Not applicable due to above pt. 5 and.6.
9	A green belt of adequate width (at least 50 m) and density should be developed all around the crude oil terminal site.	:	Complied with. A green belt/green cover of adequate width has been developed and is maintained all around the tank farm.
	C. CRUDE OIL & PRODUCTS PIPELINE		
1	Necessary approvals for acquiring forest land (ROW) should be obtained from the concerned authorities. The route of the pipelines should be selected so as to avoid the corals, mangroves, forest lands, etc., and ensure that the sensitive areas are not adversely affected.		Complied with.
2	The project authorities should ensure minimum cutting of trees, damage to the native vegetation, soil erosion and minimum disturbance to the existing services during laying of pipeline and construction of booster pump stations.		Complied with. The refinery complex is established on Barren Land.
3	A program of re-vegetation should be undertaken to compensate for loss of vegetation cover.		Complied with. No re-vegetation required as refinery is established on barren land. However, a robust green has been established.
4	All around the booster pump site, adequate green belt should be developed.		Not applicable.
5	Floor washings and oil spills should be collected and treated properly before disposal.		Complied with.
6	Risk assessment report along with the on-site and off-site emergency preparedness plans should be submitted to this Ministry within one year for approval.		Complied with.

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of Environment Clearance granted by MoEF vide letter no.: J-11011/25/93-IA.II(I) dt 6-9-2000, for Expansion Refinery complex at Jamnagar, for six months ending 30th September '2023.

Project Status: The project is completed. It is in operation with consent to operate from GPCB.

Sr. No.	Details of Stipulations		Compliance Status
1	The refinery is permitted to operate at the expanded capacity without exceeding the earlier stipulated pollution load of 24 TPD of SO2 emissions.	:	Regular monitoring & measurement are carried out for measuring total SO2 emission from the refinery complex which is below the limits prescribed. SO2 emission monitoring report is included in **Annexure I-A**.
	SO2 emission report may be made on a daily basis for all the stacks (fuel burning and process emissions) through the computerized monitoring mechanism as per the format attached.	:	The refinery now has continuous online emission monitoring system in which the SO2 emissions are captured in real time.
	Further, regular monitoring of stacks every fortnight must also be carried out to cross check the data obtained from computerized monitoring by engaging a reputed organization such as NEERI.	:	Each stack is manually monitored on a monthly basis to cross check the computerised monitoring. A MoEF&CC approved agency has been engaged for the monitoring. Please refer **Annexure 2-A.**
	In addition, a monthly S-balance statement indicating type of crude, its S-content, product S-content, SO2 emission etc. may be made.	:	Monthly Sulphur balance statements are prepared as stipulated. Please refer **Annexure I-A**.
	Daily, fortnightly and monthly reports generated as above should be sent to the GPCB, CPCB & MEF.	:	Complied With.
2	The project authorities should come out with a fresh post-project EIA report within 6 months which should also take into account the impact of 250 MW X 4 petro-coke based power plant for review.	:	Post-project EIA was carried out by NEERI The Report has been submitted to MoEF in November 2001. The 4X250 MW coke-based plant has not been established.
3	All Conditions stipulated by MoEF in the environmental clearance for 18 MMTPA Crude processing vide ministry letter of even number dated 15th September 1995 and NOC granted by GPCB to the 27 MMTPA capacity must be strictly adhered to.	:	All conditions are compiled.
4	The company must give an undertaking to implement the recommendations of the "carrying capacity study for management of gulf of Kutch" being undertaken by the Govt of Gujarat	:	We have enquired from GoG regarding a report of the study on "carrying capacity of Gulf of Kutch" or its recommendations. They do not have such study report.
5	Pressurized storage of LPG should be reduced, and company must shift to either cryogenic/mounded storage within a period of 1 year.	:	The pressurised storage of LPG has been reduced as per the condition.

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of Environment Clearance granted by MoEF vide letter no.: J.11011/232/2005 - IA (II) - I Dt. 3rd Aug. 2005, for Expansion and Modernisation of Petrochemical Refinery complex at Jamnagar, for six months ending 30th September '2023.

Project Status: The project is completed and commissioned in 2008. It is in operation since then with consent to operate from GPCB.

Sr. No.	Stipulations	Status of compliance
1	The company shall ensure strict implementation of compliance to the stipulations made by MOEF vide OM no. *J-11011/25/1994-IA~1* dated 15th September 1995 and 6th September, 2000.	Being Complied with.
2	The gaseous emissions (SO_2, NOx, CO, NMHC & Benzene) from the various process units shall conform to the standards prescribed under the Environment (Protection) Rules, 1986 or norms stipulated by the SPCB, whichever is more stringent. At no time, the emission level shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied with. The gaseous emissions (SO_2, NOx, CO etc) from the various process units comply to the requirement prescribed by GPCB and of Refinery Standards as notified on 18th March '2008.
3	Ambient air quality monitoring stations, [SPM, SO_2, NOx and NMHC, Benzene] shall be set up in the refinery complex in consultation with SPCB, based on occurrence of maximum ground level concentration and downwind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.	Complied with. AAQM stations have been setup based on the modelling reports of NEERI. The monitoring parameters are as per the NAAQS 18th November '2009. Please Refer **Annexure 5-B**.
	Continuous on-line stack monitoring equipment shall be installed for measurement of SO_2 and NOx.	Complied with. Continuous on-line stack monitoring for all the stacks is provided.
	Data on VOC shall be monitored and submitted to the SPCB / Ministry.	Complied. Ambient HC monitoring at the plant periphery is carried out and submitted. Regular LDAR programs are conducted for fugitive emissions in accordance with the MoEF notification- Refinery Standards as notified on 18th March '2008. Please refer **Annexure 13**.
4	The total SO_2 emission from the refinery complex shall not exceed 49TPD after fully stabilizing of the expansion and modernization of the refinery complex and upgrading the existing facilities.	Complied with. Regular monitoring & measurement are carried out for measuring total SO2 emission from the refinery complex which is below the limits prescribed. The total SO2 emission as reported in the annexure is between 43.72 and 47.03 MT/day at the lowest and highest levels. Monitoring is included in **Annexure I-A & I-B**.
	SO_2 emission report may be made on daily basis for all the stacks (fuel burning and process emissions through the computerized mechanism).	Complied with. The refinery now has continuous online emission monitoring system in which the SO2 emissions are captured.

Sr. No.	Stipulations	Status of compliance
	Further, regular monitoring of stacks every fortnight must also be carried out to cross check the data obtained from computerized monitoring by engaging a reputed organization.	Each stack is monitored monthly by MoEF recognized laboratory/consultant to cross check computerized monitoring.
	In addition a monthly Sulphur balance statement indicating type of fluid, its S content, product s-content. SO_2 emission etc. may be made. Daily, fortnightly and monthly reports generated as above shall be sent to the GPCB, SPCB and MoEF.	Complied with.
5	All the Sulphur Recovery Units shall have tail gas treatment (TGT) facilities and the overall efficiency of the SRU with TGT unit shall be 99.9%.	Complied with. Please refer **Annexure 4-B** for SRU Efficiency.
6	Ultra Low-NOx burners shall be provided in the new furnaces to avoid excessive formation of NOx. The existing low NOx burners are also to be phased out and replaced with Ultra low-NOx burners.	Complied with. The emission levels are well below the prescribed norms of GPCB.
7	Fugitive emissions of HC from product storage tank farms etc. must be regularly monitored.	Complied.
	Sensors for detecting HC leakage shall be provided at strategic locations.	Complied. More than 46,290 gas detectors and alarms are installed in the jamnagar complex at strategic locations for detecting toxic gas & HC leakage.
	Necessary measures shall be adopted so as to ensure that the NMHC levels outside the refinery complex premises does not exceed 160 µg/m^3.	Complied. Necessary measures like LDAR, gas detectors and monitors etc are in place along with corresponding procedures for ensuring control of HC emissions. Regular monitoring of NMHC levels around the boundary of the plant is conducted.
	Monitored data shall be submitted to the GPCB / CPCB every three months and to Ministry of Environment & Forests every six months.	Complied with.
8	For control of fugitive emissions, the company shall augment the existing flare system and route all unsaturated hydrocarbons to the flare system in addition to the existing flare system.	The safety and emergency discharge of hydrocarbons are routed to adequate flare systems which are provided.
	All the pumps and other equipment where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage.	Complied.
	The company shall adopt Leak Detection and Repair (LDAR) program for quantification and control of fugitive emissions.	Complied. Procedures are developed & implemented for LDAR programs and are in accordance with the MoEF notification-Refinery Standards as notified on 18th March '2008. Please refer **Annexure 13**.
9	All new stacks shall be of appropriate design and height and shall be attached to pollution control systems, wherever necessary. All stacks in the complex must meet the	All the stacks are provided in accordance to the CPCB guidelines for stack height and as prescribed in the Environmental Protection Rules.

Sr. No.	Stipulations	Status of compliance
	minimum stack height criteria as prescribed in the Environment Protection Rules.	
10	All new standards / norms which are being proposed by CPCB for refinery projects / petrochemical units shall be applicable for the proposed expansion and modernization of the petrochemical refinery complex. These standards shall be incorporated into the detail designs for the proposed expansion and modernization. The existing refinery complex shall also be upgraded to the new above-mentioned emission standards.	Complied with.
11	The Central Pollution Control Board shall carry out independent monitoring of all the stacks for SO_2 and NOx.	Noted.
12	Ground water shall not be tapped for construction, industrial or domestic uses including the township. All the water requirements of the refinery complex shall be met by desalination of seawater.	Desalination plants have been installed to meet the total water demand of the refinery complex.
13	A new effluent treatment plant with primary, secondary and tertiary treatment facility shall be constructed to cater to the additional effluent load. Liquid effluents shall be treated to conform to the standards stipulated by the GPCB / Ministry of Environment & Forests under EPA 1986 and also the new norms being specified.	State-of-art Effluent Treatment Plant (ETP) is provided with Primary, Secondary and Tertiary facilities to maximize the recycle and reuse of the treated water. The treated water meets all the standards mentioned. Please refer **Annexure 7-A & 7-B.**
	Treated effluent be recycled and reused to achieve zero discharge of effluent. The domestic effluent after treatment and conforming to the prescribed standards shall be used for greenbelt development.	Complied with.
14	The return seawater (brine from desalination plant, cooling tower blow down etc.) shall be discharged to the sea through a properly designed diffuser system. The existing diffuser system shall be augmented to cater to the additional discharge volume. The augmentation of the existing diffuser system/any other diffuser system in terms of dispersion in the sea shall meet the standards and certified by M/s National Institute of Oceanography. The company shall take the approval of the GPCB for the discharge of the return sea water.	The existing diffuser system has been augmented to cater to the additional discharge volume. The augmented diffuser system and the location of discharge has been decided in consultation with M/s National Institute of Oceanography (NIO). GPCB has granted approval for the discharge.
15	The requisite numbers of effluent quality monitoring stations shall be planned with adequate facilities especially for parameters like phenols, sulphides, oil and grease, suspended solids, BOD, COD, pH and flow.	All the effluent parameters are monitored in the central laboratory that is NABL approved. The effluent parameters are monitored at source of generation and at the outlet of the effluent treatment plant. Please refer **Annexure 7-A & 7–B.**
	The salinity and temperature of the return seawater shall be monitored periodically and monitored data submitted to the GPCB and Ministry of Environment & Forests on a periodic basis.	The return seawater before discharge to outfall is monitored for salinity and temperature & submitted to authorities. Please refer **Annexure 9** for Sea Water return analysis report**.**

Sr. No.	Stipulations	Status of compliance
16	M/s RIL shall monitor the groundwater quality at the locations as suggested by the Central Ground Water Board. Monitoring results of the same shall be submitted to the GPCB/CPCB and MOEF.	The groundwater quality is monitored in nearby villages at locations suggested by Central Ground Water Board. The monitoring results are submitted periodically to authorities. Please refer **Annexure 11.** Ground water quality in nearby locations**.**
17	M/s RIL shall undertake rainwater harvesting measures to recharge the ground water in the area in consultation with Central Ground Water Board and Gujarat Pollution Control Board.	Rainwater Harvesting: A network of storm water ponds is developed having capacity around 1.56 million cum and the rainwater is reused. The storm water run-off is collected in the ponds. Two recharge wells have also been established in the green belt for ground water recharge.
18	M/s RIL shall undertake measures to recover oil from oily sludge and to charge into the feed of Delayed Coker Unit.	The Oily sludge recovered from ETP is re-processed in Delayed Coker unit.
	An incinerator has to be provided for the oily rags as per the guidelines of CPCB.	Oily rags from SEZ area are incinerated (at the approved Common Hazardous Waste Incinerator (CHWI) facility) or sent for Co-processing in Cement Industry.
19	Occupational Health Surveillance of the employees and workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied with. Occupational Health Surveillance of the employees and workers are conducted regularly, and the records are maintained as per the Factories Act. The periodical Medical Surveillance of all employees is carried out annually.
20	The extension of the existing tank farm shall be designed in such a way that the residual flow including floor washing do not percolate to the marine areas.	There is no floor washing at the tank farm area. Appropriate design measures have been considered and implemented so that the marine areas are not affected by the tank farm operations.
	The augmentation and expansion of the marine facilities like product berths, Crude and product SPMs, seawater intake channel and outfall shall be done in consultation with the National Institute of Oceanography.	The augmentation and expansion of the marine facilities has been carried out in consultation with NIO.
21	The marine water quality shall be regularly monitored for the water quality (temperature, petroleum hydrocarbons, phenols, sulphides, and total organic carbon), sediment quality (trace elements, petroleum hydrocarbons, TOC and sediment size) and biological parameters (primary productivity, benthos, fish quality and growth, biomass, phytoplankton and zooplankton). The present monitoring program shall be continued and upgraded for the expansion and modernization of the refinery complex.	A marine environment study is conducted by NIO periodically for monitoring all physical, chemical, ecological & biological parameters in the marine environment. Regular analysis is carried out of the seawater both upstream & downstream of the diffuser, for monitoring parameters temperature, petroleum hydrocarbons, phenols, sulphides, total organic carbon, salinity etc Please refer **Annexure 9** for Seawater quality at outfall.
22	No discharge of crude oil / products washings shall be done in the Gulf.	Complied with. No crude oil washings are permitted in the Gulf as a part of marine operations.
	No dredging in the sea should be undertaken except where unavoidable during construction and operation while augmenting and expansion of the marine facilities. Details of the same shall be provided to the	Complied with.

Sr. No.	Stipulations	Status of compliance
	Director, Marine Park & Sanctuary, Jamnagar, and Gujarat Pollution Control Board.	
23	The Company shall also comply with all the conditions and safeguards prescribed in the EIA & Risk Assessment Reports prepared by NEERI. Pressurized storage of LPG shall be reduced and company must shift to either cryogenic/mounded storage.	Complied with. Pressurized storages of LPG have been reduced
24	The On-site and Off-site Emergency Preparedness Plans, Oil Spill Contingency Plans, Marine Disaster Management Plan shall be updated for the expansion and modernization for the enhanced refinery throughput and submitted to the Ministry before commissioning at the enhanced capacity.	Comprehensive On-site Emergency Preparedness Plans have been developed. These are updated at regular intervals. Off-site Emergency Preparedness Plans have been developed by District Authorities. Oil Spill Contingency Plans is approved by Indian Coast Guard.
25	The Environmental Management Cell and laboratory facilities for the collection of the samples shall be augmented with suitable facilities and qualified personnel and directly report to the chief executive of the refinery complex.	A full-fledged Environmental Cell headed by Vice President who reports to the Chief Executive and is assisted by suitably qualified engineers is set-up.
	B. GENERAL CONDITIONS:	
1	The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board and the State Government.	Complied with.
2	No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Noted
3	At no time, the emissions shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved. .	Complied with. Emissions are within the standards prescribed by the concerned authorities. In case of any likelihood of exceedance corrective actions are laid down.
4	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.	Appropriate Engineering control measures are provided to identified sources of noise generation including acoustic hoods, silencers, enclosures etc. The overall noise levels in and around the plant area are kept well within the standards.
	The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Regular monitoring of the ambient noise levels is conducted and conforms to the standards prescribed. The monitoring data are submitted to the authorities. Please refer **Annexure 8-A & 8–B.**
5	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of	Complied with. Obtained the necessary approvals from Chief Controller of Explosives.

Sr. No.	Stipulations	Status of compliance
	Explosives must be obtained before commission of the project.	
6	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	Complied with. Authorization for collections; treatment; storage and disposal of HW is obtained from SPCB.
7	The project authorities will provide requisite funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Complied with. The total expenditure for the environmental protection measures is provided in **Annexure 12.**
8	The stipulated conditions will be monitored by the Regional of this Ministry at Bhopal/Central Pollution Control Board/State Pollution Control Board.	Noted.
	A six-monthly compliance report and the monitored data should be submitted to them regularly.	A six-monthly compliance report and the monitored data are submitted to MoEF&CC regional office on regular basis and Monthly monitoring reports to GPCB.
9	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board! Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in.This should 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 should be forwarded to the Regional office.	The advertisement regarding Information to the public that the project has been accorded environmental clearance by the Ministry and Copies of the clearance letter were made available with the State Pollution Control Board, has been published within the stipulated period in two local newspaper that are widely circulated in the region. The copy of the same has been submitted.
10	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied with.

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of Environment Clearance granted by MoEF vide letter no.: J-11011/149/2007-IA II (I) dtd: 30th March 2010, extended vide letter no.: J-11011/149/2007-IA II (I) dtd: 14th May 2015 up to 19th July 2019 for Petroleum and petrochemical complex in Multi products Special Economic Zone on six months ending 30th September '2023.

Project Status:

The SEZ refinery (JERP) granted EC in J-11011/232/2005-IA II (I) dtd: 3rd August '2005, which was also included in the Environmental Clearance, granted in 2010, has been implemented. The additional refining capacity of 8.5 MMTPA granted in J-11011/149/2007-IA II (I) dtd: 30th March 2010, & further added 5.8 MMTPA granted in J-11011/351/2018-IA II (I) dtd. 13th March '2020, is also implemented, thereby taking the overall refining capacity at the Jamnagar complex, to 74 MMTPA.

The projects of Butyl and Halo-Butyl rubber and the projects of Petcoke Gasification have been implemented and have been split from the above EC by MoEF&CC. Fresh separate respective ECs dtd 03.06.2020 and dtd. 06.07.2022 are obtained and the remainder projects have been granted. There is no change in the original conditions for the projects.

The projects related to C2 based Units (Multifeed Cracker, Ethylene Oxide Derivatives and ethylene Polymers) and Paraxylene, Power plants, and Utilities are operational & CTO is obtained.

The balance projects, granted approval under this Environmental Clearance, are in the design stage.

Sr. No.	Stipulations	Status of Compliance
B.	**Specific Conditions:**	
(i)	The centralized ETP and standalone ETP shall be designed based on the raw water and wastewater quality. Design details of ETP shall be submitted to the Ministry. The effluent shall be segregated into low TDS and High TDS stream which shall after primary, secondary and tertiary treatment shall be used and recycled for green belt development, cooling tower make up etc. The treated effluent shall comply with the prescribed standards. The return sea water shall be discharged into the sea through a multi-port diffuser at a point identified by NIO.	For the complex, the process wastewater is treated in the ETP. The wastewater generated are segregated at source based on its stream characteristics & Total Dissolved Solids (TDS) levels. State-of-art Effluent Treatment Plants (ETP's) are provided with Primary, Secondary and Tertiary facilities for the recycle and reuse of the treated water. The effluents are treated to comply with the prescribed standards. **Refer Annexure 7C** The return seawater is discharged into the Gulf through the existing multiport diffuser at the location identified by NIO.
(ii)	The Company shall provide details of the model used for the diffuser for discharge of saline water into sea and the efficacy of the existing diffuser which is based on the HYDRODYN model and also compare with CORMIX model. The depth of discharge of diffuser shall be determined as per the above model.	During commencement of implementation of the projects CRZ clearance for augmentation of seawater intake facilities, desalination plants and discharge of return seawater was obtained from MoEF for the projects being implemented in 2015. This included numerical modelling for the discharge by NIO. The numerical modelling was found to be in order and accepted by the Ministry.
(iii)	The hot water effluent and outfall shall be discharged as per the prescribed standards.	Complied with.
(iv)	The company shall comply with effluent and emission standards for Petrochemical Plants of CPCB/MoEF.	The treated effluent quality is well within the prescribed standards for refineries and petrochemical plants.
(v)	Ambient air quality data for one season other than monsoon within 10km radius of the complex particularly one station shall be	Additional adequate numbers of AAQMs stations are set up and monitored as per

Sr. No.	Stipulations	Status of Compliance
	established where maximum GLC is anticipated with respect to SO_2, NO_x, PM_{10}, Ozone, CO, Benzene and Benzo (a) pyrene and data submitted to MoEF/CPCB/SPCB.	the standards and the data submitted to MoEF&CC and GPCB. Pl. Refer **Annexure 5-C.**
(vi)	Action plan for reduction of SO_2 and NO_x emissions from the present level shall be submitted to the Ministry.	Maximized usage of gaseous fuel and use of syngas as fuel have reduced SO2 & NOx emissions to the extent possible.
(vii)	The company shall install low NOx burner to mitigate the NOx emission and cyclone, venturi scrubbers, sulphur recovery unit and tail gas treatment for mitigating SO_2 emission.	The best available technology is incorporated in FEED of the project for reduction and control measures for mitigating emissions viz; SO_2, PM, NO_x etc.
(viii)	The company shall install detectors for phosgene and specific steps shall be taken for phosgene management.	Phosgene plant is not set up and thus Not Applicable.
(ix)	The gaseous emissions (SO_2, PM_{10}, NO_x, CO and NMHC) from the various process units shall conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB, whichever is more stringent. At no time, the emission level shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective units should not be restarted until the control measures are rectified to achieve the desired efficiency.	Gaseous emissions in the Refinery complex are within the stricter standards prescribed by the authorities. In case of any likelihood of exceedance corrective actions are laid down to avoid it.
(x)	The proponent shall upload the status of compliance of the stipulated EC conditions, including monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal office of CPCB and the SPCB. The criteria pollutant namely; Particulate matter (PM_{10}, SO_2, NOx, VOC and HC (Ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at the convenient location near the main gate of the company in the public domain.	Compliance reports are submitted to authorities regularly. The criteria parameters namely Particulate matter $(PM)_{10}$, SO_2, NOx, VOC and HC (Ambient levels) and critical sectorial parameters, indicated for the complex are monitored and displayed at the convenient location near the main gate of the company in the public domain. The status of compliance is uploaded on the company's website in a summarized form.
(xi)	Process emissions shall be controlled by scrubbers. Flue gas emissions from the various stacks attached to the boilers, furnace/heaters shall conform to the prescribed standards.	The best available technology is incorporated & established in FEED for the units to conform to the prescribed standards. Pl. Refer **Annexure 2C**.
(xii)	The gaseous emissions from the DG sets shall be dispersed through stack of adequate height as per CPCB/State Pollution Control Board standards. Acoustic enclosures shall be provided to mitigate the noise.	Suitable stack height as per the prescribed standards and acoustic enclosures are provided for all the DG sets.
(xiii)	The company shall use low sulphur fuel to minimize SO_2 emission. Stacks which are contributing to more SO_2 emissions shall be identified and SO_2 emissions shall be reduced by changing the fuel or by increasing the height of major stacks to bring GLC within the prescribed limits.	The best available technology is incorporated & established in the Front-End Engineering Design (FEED) for the units for reduction & minimization of GLC. All stack heights are in accordance to standards and there is no exceedance on the GLCs monitored.

Sr. No.	Stipulations	Status of Compliance
(xiv)	To control the fugitive emissions, the unit shall have provision for internal floating roof tanks with flexible double seal for MS and intermediate products; mechanical seals in pumps; regular inspection of floating roof seals and proper maintenance of floating roof seals for storage tanks; preventive maintenance of valves and other equipment; regular skimming of oil from separators/equalization basin in ETP. The units shall assess and minimize the fugitive VOC emission wherever possible.	The best available technology is incorporated & established in the (FEED for reduction & minimization of VOC emissions. The mitigation measures for minimizing the fugitive VOC emission during the operational phase is assessed and wherever actions required to control emissions, measures are taken.
(xv)	Fugitive emissions of HC from product storage tank yards etc must be regularly monitored. Sensors for detecting HC leakage shall also be provided at strategic locations.	Complied with.
(xvi)	M/s RIL shall implement Leak Detection and Repair (LDAR) programme using a portable VOC detection instrument shall be done on distribution lines and tanks.	LDAR programs are conducted in accordance with the MoEF notifications 2008 and 2012 for the complex.
(xvii)	Measures shall be undertaken for odour control and inventory of odours compounds shall be maintained.	Complied.
(xviii)	The product loading gantry shall be connected to the product sphere in closed circuit through the vapour arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records maintained.	Complied for the complex. The fugitive emissions in the product loading gantry are regularly monitored and records are maintained.
(xix)	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.	The safety and emergency discharges of HC are routed to the flare system & the HC is recovered to the extent possible, however, the safety and emergency discharges are routed to the flare. No halogenated organics are routed to the flare.
(xx)	The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 for management of Hazardous wastes and prior permission from GPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. Details of regarding type of catalyst to be used and plan for disposal of spent catalyst shall be submitted. The company shall incinerate the oil cotton ragas only. The design of the incinerator and secured landfill facility shall be as per the CPCB guidelines.	Authorization for collection, storage and disposal of hazardous waste generated from the units is obtained from GPCB.
(xxi)	M/s RIL shall undertake measures for firefighting facilities in case of emergency.	Firefighting facilities including dedicated fire stations are operational so as to cover all the units.
(xxii)	The company shall submit time bound action plan for brine management. Further, possibility of setting up of salt manufacturing facility for management of huge volume of brine shall be	Noted. This possibility has been explored. However, it is not found feasible.

Sr. No.	Stipulations	Status of Compliance
	explored or tie up with the salt manufacturing units in the area for brine disposal.	
(xxiii)	The company shall prepare integrated risk assessment report considering domino effect which shall be done after freezing overall layout of the Petrochemical Complex with precise location of all individual plants as well as all offsite and battery limit storage areas of the Petrochemical Complex and after all storage capacities and tank sizes are decided.	The integrated risk assessment considering domino effect has been carried out while freezing the layout of the units and storages.
(xxiv)	The Quantitative Risk Assessment (QRA) shall be done in comprehensive manner by taking into all consideration listed below but not limited to, a) Report to consider two mega size refineries in the same industrial area and shall deal with the risk arising out of major incident (VCE, Flash fire) in either the existing refineries or proposed petrochemical complex and its domino effect on the each other b) Report to consider precise layout of particular units, bulk storages and storage quantities determined, details of safety system, safeguard provided against domino effect	The Comprehensive Quantitative Risk Assessment study has been done once the overall layout of the project including the two refineries and the projects was frozen along with the final layout of the particular units and bulk storages. The report includes the safeguards to be provided under domino effect.
(xxv)	All pressure vessels shall be of SIL-3 level product at par with existing refineries.	Complied
(xxvi)	Any relief system for major hazardous releases shall have at least double or triple backup system against the possibility of human error.	Included in the FEED for the project.
(xxvii)	Risk assessment shall include BLEVE for propane and shall be considered in the lay out plan.	Complied.
(xxviii)	The company shall submit reports of last 2-3 years regarding external safety audit.	Safety audits are being conducted and the audit reports submitted to concerned authorities.
(xxix)	Since some of the design parameters have not been frozen at this stage of project, once the Front End Engineering Design Document (FEED) is firmed up, necessary details for integrated QRA study are available particularly with respect to lay out including, the bulk storages with storage quantities determined, details of safety system, safeguard provided against domino effect and other details as prescribed in the specific conditions stipulated above regarding catalyst and the mode of their disposal, steps for mitigation of SO_2 and NOx releases details of phosgene management and model used for diffuser for discharged of saline water into the sea shall be submitted to the Ministry. The information provided shall be place before the Committee so that the Committee suggests mid-course correction, and if considered necessary additional	Part of the projects are implemented & operational and the rest in the design phase. The projects implemented are as per the assessed impacts and risks. The execution of the remainder projects is unlikely. Any further expansion will be put up to the Ministry for a fresh approval.

Sr. No.	Stipulations	Status of Compliance
	environmental safeguards are stipulated for compliance by M/s RIL.	
(xxx)	M/s RIL shall undertake rainwater harvesting measures, to recharge the ground water and also to minimize the water drawl from the weir.	Rainwater harvesting through a network of storm water ponds is developed. The storm water runoffs are collected in the ponds. The water is recycled & reused.
(xxxi)	Green belt in 33% of the plant area shall be provided to mitigate the effects of fugitive emissions all around the plant as per CPCB guidelines in consultation with local DFO.	Complied with.
(xxxii)	Occupational health surveillance programme shall be undertaken as regular exercise for all the employees. The first aid facilities in the occupational health centre shall be strengthened and the medical records of each employees shall be maintained separately.	Occupation health surveillance is implemented for the personnel working in the complex. The medical records are being maintained. The first aid facilities in the OHC have been strengthened. During the last six months ending 30th Sept'23 100% scheduled employee's medical surveillance checkup were conducted.
(xxxiii)	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile sewage treatment plant, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.	During the project stage, the labour camps had been set up with all necessary infrastructure facilities such as fuel for cooking, toilets, sewage treatment plant, safe drinking water, medical health care etc. The labour camps for projects are being demobilized. The generation of construction waste was kept to the minimum extent possible by proper planning. It has been managed to ensure no impact to the surrounding environment.
(xxxiv)	The Company shall comply with all the conditions stipulated vide ministry's clearance letter no. J-111011/232/2005-IA.II(I) dated 3rd August,2005 for expansion and modernization of petrochemical refinery complex.	Being complied with.
B	**GENERAL CONDITION:**	
i.	The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board and the State Government.	The standards stipulated by GPCB for the complex are being complied with.
ii.	No further expansion or modernization in the plant should be carried out without prior approval of the ministry of Environment and Forests.	Noted
iii.	At no time, the emission should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Noted.

Sr. No.	Stipulations	Status of Compliance
iv.	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 should confirm to the standards prescribed under EPA Rules.	All the units in the complex have been so designed by providing noise abatement and control measures such that the ambient noise levels conform to the standards prescribed.
v.	The project authorities must strictly comply with the provisions made in Manufacture, Storage and import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from chief controller of explosives must be obtained before commission of the project.	Complied.
vi.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the ministry of Environment and Forest as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	The funds (recurring and non-recurring) allocated are used only for the implementation of the environmental conditions and are not diverted for any other purpose. **Refer Annexure 12**
vii.	The stipulated conditions will be monitored by the Regional of this Ministry at Bhopal/Central Pollution Control Board / State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.	The six-monthly EC compliance and monitoring report are submitted.
viii	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copy as well as by e-mail) to the respective Regional office of MoEF, the respective zonal office of CPCB and the State Pollution Control Board.	The six-monthly EC compliance and monitoring report are being submitted.
ix.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from who suggestions/ representations, if any were received while processing the proposal.	Complied with.
x.	The Environmental statement for each financial years 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 by e-mail.	Complied. Form V are submitted for operationalized plants and have been granted Consent to operate by GPCB.
xi.	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 Ministry at http://envfor.nic.in This shall be advertised within seven days from the	Complied.

Sr. No.	Stipulations	Status of Compliance
	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 concerned the Regional Office of the Ministry.	
xii.	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closures and final approval of the project by the concerned authorities and the date of start of the project.	Will be complied with
10.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted
11.	The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.	The additional conditions if stipulated will be complied with.
12.	Any appeal against this environmental clearance shall lie with the National Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Authority Act, 1997.	---
13.	The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air, (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986 Hazardous Wastes (Management and Handling) Rules, 2003/ 2008 and the Public Liability Insurance Act,1991 along with their amendments and rules.	---

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of CRZ Clearance granted by MoEF vide letter no.: F.No.11-63/2013-IA.III Dt. 13th March 2015, for Augmentation of Seawater Intake and Desalination facilities at Sikka, Jamnagar, Gujarat, for six months ending 30th September '2023.

Project Status: The sea water intake and Desalination facilities are commissioned & operational.

Sr. No.	Condition	Compliance Status
	SPECIFIC CONDITIONS:	
i	All the conditions/recommendations stipulated by Gujarat Coastal Zone Management Authority (GCZMA) vide letter no. ENV-10-213-37-E dated 05.06.2013, shall be strictly complied with.	Complied with.
ii	The depth of the stilling basins shall not exceed – 12 m. The GMB shall monitor the dredging activity so as to check that the depth of stilling basin does not exceed – 12 m.	GMB has certified & established the depth of the stilling basin with a depth of -12 m CD.
iii	The maintenance dredge material shall be used for low level raising in the plant area	Complied with.
iv	a) The water quality especially for the salinity shall be monitored around the stilling basin & the outfall once in six months & report should be submitted to Regional Office, MoEF&CC.	Periodic monitoring around the outfall is carried out. Refer **Annexure 9.** Monitoring around the stilling basin is included in the report by NCSCM.
	b) The NCSCM, Chennai at the cost of the project proponent, shall submit to the MoEF&CC the annual inspection report on the functioning of the system & comparative level of pollution, every year takin the year of approval as the base year.	The first monitoring report by NCSCM submitted vide compliance report submitted on 01/12/2019.
iv	The project proponent shall no engage in any trenching, digging or dredging either for water intake into the sea.	Being complied with.
v	The project proponent shall take the clearance the concern ground water authority for undertaking construction of stilling basin for the desire depth of 12 m.	Being complied.
vi	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for the each mitigation plan shall be submitted to MoEF&CC along with half yearly compliance report to MoEF&CC-RO.	Included in design and complied with and included as **Annexure AA**.
vii	Screens & trash bars shall be provided to avoid entry of fishes and fish larvae into the system.	Being included in design and complied.
viii	The outfall shall be 1 km from shore at 12 m CD.	The existing diffuser is installed at a location suggested by NIO and approved GPCB. The discharge from the proposed unit is through existing diffuser in compliance with the conditions as stipulated in the clearance.
ix	There shall be no disturbance to the sand dunes.	Complied.
x	Periodic monitoring of coastal water shall be carried out at outfall location.	Being carried out at regular intervals
xi	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Being complied with.
xii	The project proponent shall set up separate environment management cell for effective	Complied. The Environmental Management Cell is in place.

Sr. No.	Condition	Compliance Status
	implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	
	GENERAL CONDITIONS:	
i	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied with.
ii	Full support shall be extended to the officers of this Ministry/Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purpose by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted
iii	A six-Monthly report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Complied.
iv	Ministry of Environment, Forests & Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted.
v	The Ministry reserves the right to revoke this clearance if any of the condition stipulated are not complied with the satisfaction of the Ministry.	Noted
vi	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest & Climate Change.	Noted.
vii	The project proponents shall inform the Reginal Office as well as the Ministry, the date of financial closure & final approval of the project by the concerned authorities and the date of start of land development work.	Noted.
vii	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's office for 30 days.	Complied.
viii	The funds earmarked for the environmental protection measures shall be kept in separate account shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	Complied.

Annexure: AA

Environmental Management Plan

Sr. No.	Title	Suggested Mitigation Measures	Compliance Status	Target Date
1	Desilting and its Disposal	Desilted material should be stacked properly before being transported for utilization in the RIL complex for filling the low lying areas.	Complied	Completed
2	Intake water channel	Impingement and entrainment of marine organisms, due to large quantity of intake, should be avoided by placing suitable moving screen at the intake.	Complied. Included in the design and implemented	Completed
3	Miscellaneous	• The area of construction should be confined to the minimum required and spillages of activities outside the project site should be avoided. Care is warranted not to disturb the mangroves in the vicinity. • Major pre-fabrication jobs should be undertaken in a yard on land located sufficiently away from the HTL. • Good sanitation and water supply facilities should be made available to the work force. Adequate fuel also should be provided to them to prevent cutting of mangroves for fuel. • Labour colonies should be set-up away from sea and away from mangroves. • The operational noise level should be kept to a minimum particularly in the nearshore region through proper lubrication, muffling and modernization of equipment.	Complied. Complied. Major Prefabrication jobs were done in yard on land located away from the HTL. Complied. Workmen accommodation is far away from the site with necessary infrastructures facilities Complied Complied	Completed

Sr. No.	Title	Suggested Mitigation Measures	Compliance Status	Target Date
		• Regular preventive maintenance of equipment used for construction should be practiced.	Complied	
		• General clean-up along the corridor, adjacent areas and subtidal regions should be taken-up and extraneous materials such as equipment's, pipes, drums, sacks, metal scrap, ropes, excess sediment, make shift huts and cabins should be cleared from the site.	Complied	
		• All structures should be designed for specific seismic loads.		
		• Construction time window shall be small to the extent possible and time-overrun should be avoided.	Complied. Structures are designed to with stand seismic load (Class IV)	
		• Confine the area of construction to the minimum required and spillages of activities outside this boundary should be avoided.	Complied	
		• Bunding of excavated material shall be done to avoid contamination and release in to nearby marine environment.	Complied	
		• The discharge from Desalination facilities seawater should be monitored for salinity prior to its release through marine outfall.	Complied	
		• Vehicles moving in project area shall have compulsory PUC (Pollution under control) certificate	Being complied. Complied	
4	Marine Environment Management	Regular periodic marine environmental monitoring will be carried out to identify any changes in the ecological status.	Periodic monitoring by NIO of entire marine ecology and mangroves is carried out.	On-going

Reliance Industries Limited, Jamnagar

Compliance Report for the conditions of Expansion of existing jetty by setting a new berth at Gulf of Kutch, Jamnagar, Gujarat, - CRZ / Environment Clearance granted by MoEF&CC vide letter no.: F. No. 11-34/2014-IA-III, Dt. 19-July-2017, for six months ending 30th September '2023.

Project Status: The additional new Berth as expansion of existing Jetty facilities is under construction.

Sr. No.	Condition	Compliance Status
	A. Specific Conditions:	
1	Consent to Establish' shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act 1974.	CTE received.
2	Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Noted
3	As proposed, the Company shall not carry out any construction activity in the Eco- Sensitive area	Ensured.
4	The Project proponent shall ensure that there shall be no damage to the existing mangroves patches near site and also ensure the free flow of water to avoid damage to the mangroves.	Existing mangroves are about 4Kms from the proposed project location.
5	As proposed, the Company shall undertake additional mangrove plantation in area of 100 ha.	The Forest Dept. Jamnagar has carried out 100 Ha of mangrove plantation. The letter confirming the same is submitted along with compliance reports vide dts:01/12/2019.
6	The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.	Noted, however the location will not cause any such disturbance.
7	Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report.	Already established in EIA. No dumping is envisaged. There will be no shoreline changes due to dumping. The shoreline changes are studied by NIO regularly.
8	The commitments made during the Public Hearing and recorded in the Minutes shall be complied with letter and spirit. A hard copy of the action taken shall be submitted to the Ministry.	There were no actionable points raised during the PH.
9	As proposed, no capital and maintenance dredging shall be carried out.	Not proposed.
10	While constructing berth/piles, an independent monitoring shall be carried out by Government Agency/Institute to check the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.	Is being complied with. NIO has monitored the marine environmental parameters during construction.
11	All the conditions stipulated in the earlier Clearance including the recommendations of Environment	Will be complied with

Sr. No.	Condition	Compliance Status
	Management Plan, Disaster management Plan shall be strictly complied with.	
12	The ground water shall not be tapped within the CRZ areas by the PP to meet with the water requirement in any case.	Noted.
13	Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986	Will be complied with
14	All the operational areas will be connected with the network of liquid waste collection corridor comprising of storm water, oily waste and sewage collection pipelines.	Will be implemented as applicable.
15	Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components as part of the management plan. Marine ecology shall be monitored regularly also in terms of all micro, macro and mega floral and faunal components of marine biodiversity.	Being done regularly by NIO.
16	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.	Present Oil Spill Response Plan will be extended to new berth
17	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF&CC along with half yearly compliance report.	Will be complied with
18	Ships/barges shall not be allowed to release any oily bilge waste in the sea. Any effluents from the Jetty which have leachable characteristics shall be segregated and recycled/disposed as per SPCB guidelines.	Noted
19	Location of DG sets and other emission generating equipment shall be decided keeping in view the predominant wind direction so that emissions do not effect nearby residential areas. Installation and operation of DG sets shall comply with the guidelines of CPCB.	Will be complied with
20	No product other than permitted under the CRZ Notification, 2011 shall be stored in the CRZ area.	No storage in CRZ area is envisaged
21	Municipal solid wastes and hazardous wastes shall be managed as per Municipal Solid Waste Rule, 2016 and Hazardous Waste Management Rule, 2016.	Will be complied with
22	The Project Proponent shall take up and earmark adequate fund for socio-economic development and welfare measures as proposed under the CSR Programme. This shall be taken up on priority.	CSR plan is already being implemented

Sr. No.	Condition	Compliance Status
23	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Already the cell is established
24	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Noted
25	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Will be complied with
26	Company shall prepare operating manual in respect of all activities. It shall cover all safety & environment related issues and system. Measures to be taken for protection. One set of environmental manual shall be made available at the project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office.	Being complied and present set of SOPs will be applicable to the new berth.
27	**Corporate Social Responsibility:**	
a	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	Pl. refer **Annexure 15.**
b	The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/ conditions.	Noted
c	The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.	Organogram for the Environment department is attached as **Annexure 14.**
d	To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/ violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	On commissioning all facilities are certified with EMS ISO 14001:2015 which covers this required reporting. The same will be done for the berth also.
B. GENERAL CONDITIONS:		
i	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	No digging is involved.
ii	Full support shall be extended to the officers of this Ministry/ Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Will be complied with
iii	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Will be complied with

Sr. No.	Condition	Compliance Status
iv	Ministry of Environment, Forest and Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted
v	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted
vi	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest and Climate Change.	Noted
vii	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Will be complied with
viii	A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	Complied.
ix	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries center and Collector's Office/ Tehsildar's office for 30 days.	Complied.
15	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.	Noted
16	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Noted
17	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at http://vvvvw.envfornic.in. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.	Complied.

Sr. No.	Condition	Compliance Status
18	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	Noted
19	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Will be complied with
20	Any appeal against this Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted
21	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.
22	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEFCC,the respective Zonal Office of CPCB and the SPCB.	Will be complied with
23	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 EC conditions and shall also be sent to the respective Regional Offices of MoEFCC by e-mail.	Noted

RELIANCE INDUSTRIS LIMITED, JAMNAGAR

Compliance Report for the conditions of Environment Clearance (EC) granted by MoEF&CC vide letter no.: J-11011/351/2018-IA-II (I) dated 13.03.2020 for expansion of production capacity of SEZ refinery from 35.2 MMTPA to 41 MMTPA, for six months ending 30th September '2023.

Project Status: CTO is obtained.

Sr. No.	Stipulation	Compliance Status
	The project proponent shall strictly comply the sector specific conditions as mentioned in the Ministry's Office Memorandum No. 22-34/2019-IA.III dated 9th August, 2018. The grant of Environmental Clearance is further subject to compliance of other generic conditions as under:-	Noted. Pl. refer attachment **Annexure BB**
1.	The project proponent shall obtain all other statutory/necessary permissions/recommendations/ NOCs prior to start construction/operation of the project, which inter alia include, permission/approvals under the Forest (Conservation) Act, 1980; the Wildlife (Protection) Act, 1972; the Coastal Regulation Zone Notification, 2019, as amended from time to time, and other office memoranda/circular issued by the Ministry of Environment, Forest and Climate Change from time to time, as applicable to the project.	There is no construction activity involved in the project as the increase in the processing capacity is due to increase in number of working hours. The CTO is obtained from GPCB. No other approvals are applicable.
2.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and/or any other statutory authority.	Being complied with. There is no change in the present conditions envisaged.
3.	No further expansion or modifications in the plant shall be carried out without prior approval of the MoEF&CC. In case of deviation or alteration in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental pollution control measures required, if any.	Noted.
4.	The location of ambient air quality monitoring stations shall be decided in consultation with SPCB and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Complied with. AAQM stations have been setup based on the EIA findings of 2005. The monitoring parameters are as per the NAAQS dtd.18th November '2009. Please Refer **Annexure 5B**.
5.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.	Being complied with
6.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control	Appropriate Engineering control measures are provided to identified sources of noise generation including acoustic hoods,

Sr. No.	Stipulation	Compliance Status
	measures including acoustic hoods, silencers, enclosures, etc. on all sources of noise generation. The ambient noise level shall confirm to the standards prescribed under Environmental (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) 70 dBA (night time).	silencers, enclosures etc. The overall noise levels in and around the plant area are kept well within the standards. Regular monitoring of the ambient noise levels is conducted and it conforms to the standards prescribed. The monitoring data are submitted to the authorities. Please refer **Annexure 8–B.**
7.	The company shall harvest rainwater from the roof tops of the buildings to recharge ground water, and to utilize the same for different industrial operations within the plant.	Rainwater Harvesting through a network of storm water ponds are developed having capacity around 1.56 million cum and is reused. The storm water run-off is collected in the ponds. Two recharge wells have also been established in the green belt for ground water recharge
8.	Training shall be imparted to all employees on safety and health aspects of chemical handling. Pre-employment and routine periodic medical examination for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	A dedicated Learning Center with state of Art infrastructure is established and well-structured training modules are developed which includes HSEF procedures. As per the training procedure every New Joiner has to undergo mandatory training modules which includes safe handling; safe operations, safety management systems etc for hazardous chemicals. Occupational Health Department carries out regular medical checkups of all employees and records are maintained.
9.	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 EIA/EMP in respect of environment management, risk mitigation measures and public hearing shall be implemented.	Noted & complied with.
10.	The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.	CSR activities are planned as per the needs of the surrounding villagers aimed at socio-economic improvement and overall development of the area.
11.	A separate Environmental Management Cell equipped with full-fledged laboratory facility shall be set up to carry out the Environmental Management and Monitoring functions.	Already the cell is established. Refer Departmental Organogram **Annexure 14**.
12.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by MoEF&CC well as state government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for Environmental Management/ pollution control measures shall not be diverted to any other purpose.	The capital expenditure towards environmental management is already used up for establishing the necessary controls. The recurring expenditure will be continued to be committed as outlined in **Annexure 12**.

Sr. No.	Stipulation	Compliance Status
13.	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.	Complied with. There was no PH conducted and no suggestions / representations were received during the processing of the application.
14.	The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including results of monitored data (both hard copy as well as by E-mail) to the respective Regional Office, Moef&CC, the respective zonal office of CPCB & SPCB. A copy of EC and six monthly compliance status report shall be posted on the website of the company.	The six-monthly EC compliance and monitoring report are being submitted.
15.	The Environmental Statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned SPCB as prescribed under the Environment (Protection) Act, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to respective Regional Office of MoEF&CC by e-mail.	Being complied with.
16.	The project proponent shall inform the public that the project has been accorded EC by the ministry and copies of the clearance letter are available with SPCB/Committee and may also be seen at website of the Ministry at http://moef.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.	Complied with. The copy of advertisement of the same has been submitted in the earlier Six-monthly report dated 29/06/2020.

ATTACHEMENT

Sr. No.	Stipulation	Compliance Status
I.	**Statutory Compliance**	
1.	The project proponent (PP) shall obtain forest clearance under the provision of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	Not Applicable.
2.	The PP shall obtain clearance from the National Board of Wildlife, if applicable.	Not Applicable.
3.	The PP shall prepare a site-specific Conservation Plan & Wildlife Management Plan and approved by Chief Wildlife Warden. The recommendations of the approved site-specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (In case of presence of schedule-I species in the study area)	Not Applicable.
4.	The PP shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/Committee.	Noted. CTO is obtained from GPCB.
5.	The PP shall obtain the necessary permission from Central Ground Water Authority, in case of drawl of ground water/ from the competent authority concerned in case of drawl of surface water required for the project.	Groundwater is not tapped for domestic or industrial use.
6.	The PP shall obtain authorization under the Hazardous and Other Waste Management Role, 2016 as amended from time to time.	Noted, GPCB has granted Authorisation as a part of the CTO/ Consolidated Consent & Authorisation (CCA).
7.	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rule, 1989 as amended time to time. All transportation of hazardous chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Being Complied with.
II.	**Air Quality Monitoring and Preservation**	
1.	The PP shall install 24*7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rule, 1986 and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specifications through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Complied with. Continuous on-line stack monitoring for all the stacks are provided and connected to CPCB. The periodic calibration of these instruments is carried out in house by trained staff as per the OEM's procedures. Pl. refer **Annexure 3-B**.

Sr. No.	Stipulation	Compliance Status
2.	The PP shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.	Fugitive emissions are monitored regularly in the plant premises and reports are submitted regularly.
3.	The PP shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NO_X emissions) within and outside of plant area at least at four locations (one with and three outside the plant area at an angle of 120° each) covering upwind and downwind directions. (case to case basis small plants: Manual; Large Plants: Continuous)	Noted. This refinery is a part of the Jamnagar Manufacturing Division (JMD) of Reliance Industries Limited. The complex has other units established as per the approvals granted by the Ministry. A program for AAQ monitoring is implemented covering all the units. The necessary budgeting is being done so as to cover all units by establishing continuous AAQ monitoring stations. The continuous stations will be located, based on an independent study that has been undertaken for siting them.
4.	The PP shall submit monthly summary report of continuous stack monitoring and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality/ fugitive emission to Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	A six-monthly compliance report and the monitored data are submitted to MoEF&CC regional office on regular basis and Monthly monitoring reports to GPCB. Pl. refer **Annexure 3-B**.
5.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	The refinery is equipped with all necessary APC systems.
6.	Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Coal is not used as a fuel. All the stacks are provided in accordance to the applicable guidelines for stack height and as prescribed in the Environmental Protection Rules.
7.	The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regards.	Suitable stack height as per the prescribed standards and necessary acoustic enclosures are provided for all the DG sets.
8.	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 21st August, 2009 as amended from time to time shall be followed.	Noted. Being complied with.
9.	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.	Noted. Being complied with.
10.	Storage of raw materials, coal etc. shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.	Noted. Being complied with

Sr. No.	Stipulation	Compliance Status
III.	**Water Quality Monitoring and Preservation**	
1.	The PP shall provide online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD).	Being complied with. On-line continuous monitoring of effluent is installed as per CPCB guidelines. The treated water is reused/recycled within the refinery complex. Pl. refer **Annexure 3-B**.
2.	The PP shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometer/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.	Being complied with. The groundwater quality is monitored in plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited. The monitoring results are submitted along with these reports. Please refer **Annexure 11.**
3.	The PP shall submit monthly summary report of continuous effluent monitoring and results of manual effluent monitoring and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	A six-monthly compliance report and the monitored data are submitted to MoEF&CC regional office on regularly basis and Monthly monitoring reports to GPCB.
4.	The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986 or as specified by the SPCB while granting Consent under Air/Water Act, whichever is more stringent.	Complied with.
5.	As already committed by the PP, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises. (applicable in case of projects achieving ZLD)	Not applicable.
6.	Total fresh water requirement shall not exceed the proposed quantity or as specified by the committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.	Complied with.
7.	Process effluent/any wastewater shall not be allowed to mix storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.	Complied with.
8.	The PP shall practice rainwater harvesting to maximum possible extent.	Complied with.
9.	The PP shall practice make efforts to minimise water consumption in the complex by segregation of used water, practicing cascade use and by recycling treated water.	Complied with.
IV.	**Noise Monitoring and Prevention**	
1.	Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied with.
2.	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,	Complied with.

Sr. No.	Stipulation	Compliance Status
	silencers, enclosures, etc. on all sources of noise generation.	
3.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during daytime and 70 dB(A) during night time.	Complied with.
V.	**Energy Conservation Measures**	
1.	The energy sources for lighting purposes shall preferably be LED based.	Almost all the peripheral street lighting, plant area lighting and office buildings have been converted to LED based/ energy conservation lighting.
VI.	**Waste Management**	
1.	Hazardous chemicals shall be stored in tanks, tank farms, drums carboys, etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.	Being Complied with.
2.	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.	Co-processing of the identified HW waste is sent to Cement industries or sent for incineration at CHWIF/TSDF site. Spent carbon is mixed with coke and used in Gasification.
3.	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 vapour recovery system. f. Use of high-pressure hoses for equipment clearing to reduce wastewater generation.	Noted & Complied with
VII	**Green Belt**	
1.	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 CPCB guidelines in consultation with the State Forest Department.	Complied with. Around 3,109 Acres of the total area of the Jamnagar site has been covered by tree plantation. Over 400 species have been planted. Including, 875 acres of mangrove plantation has been carried out.
VII	**Public Hearing and Human Health Issues**	
1.	Emergency preparedness plan based on the Hazardous Identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Complied with.
2.	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.	Complied with.

Sr. No.	Stipulation	Compliance Status
	Firefighting system shall be as per the norms.	
3.	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied with.
4.	The PP shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protective Equipment (PPE) as per the norms of Factory Act.	Complied with.
5.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of project.	Complied with.
6.	There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products and no parking to be allowed outside on public places.	Complied with.
7.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied with.
IX.	**Corporate Environment Responsibility**	
1.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 01st May, 2018 as applicable, regarding Corporate Environment Responsibility.	Noted.
2.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/ deviation/ violation of environmental/forest/wildlife norms/ conditions. The company shall have defined system of reporting infringements/ deviation/ violation of the environmental/ forest/ wildlife norms / conditions and / or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Complied with.
3.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up	Complied with.

Sr. No.	Stipulation	Compliance Status
	under the control of senior Executive, who will directly to the head of the organization.	
4.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be duly approved by competent authority. The yearwise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress for implementation of action plan shall be reported to the Ministry/Regional office along with the six-monthly compliance report.	Complied with.
5.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Being Complied with. The unit is IMS certified and the EMS audits are conducted as per the standard.
6.	All the recommendations made in the chapter of Corporate Responsibility for Environment Protection (CREP) for the Iron and Steel Plants shall be implemented.	Respective CREP recommendations for Refinery is being complied.
X.	**Miscellaneous**	
1.	The PP shall make public the EC granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Complied with.
2.	The copies of the EC shall be submitted by the PP to the heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Being Complied with.
3.	The project proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and update the same on half-yearly basis.	Being Complied with.
4.	The PP shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Being Complied with.

Sr. No.	Stipulation	Compliance Status
5.	The PP shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the MoEF&CC at the EC portal.	Being Complied with
6.	The PP shall submit the Environmental Statement for each financial year in Form-V to the concerned SPCB as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Being Complied with
7.	The PP shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Being Complied with
8.	The project authorities must strictly adhere to the stipulations made by the SPCB and State Government.	Noted.
9.	The PP shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Noted.
10.	No further expansion or modification in the plant shall be carried out without prior approval from the MoEF&CC.	Noted.
11.	Concealing factual data or submission of false/ fabricated data may result in revocation of this EC and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
12.	The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory.	Noted.
13.	The Ministry reserves the right to stipulate additional conditions if found necessary. The company in a time bound manner shall implement these conditions.	Noted.
14.	The Regional office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the	Being Complied with

Sr. No.	Stipulation	Compliance Status
	requisite data/ information/ monitoring reports.	
15.	The above conditions shall be enforced, inter-alia under the provision of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/ High Courts and any other Court of Law relating to the subject matter.	Noted.
16.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted.

ANNEXURE II
MONITORING DATA

Six Monthly Report
(01st April ‘2023 to 30th September ‘2023)

Reliance Industries Ltd.
Jamnagar

List of Six-Monthly Monitoring Reports attached as Annexures.

Annexure No.	Description
1-A & 1-B	Monthly SO2 Emission Monitoring.
2-A, 2-B & 2C	Stack Emission Monitoring Report
3-B	Continuous Online Emission & Effluent Monitoring Reports
4-A & 4-B	Computerized Sulphur Recovery Unit Efficiency
5-A, 5-B & 5-C	Ambient Air Quality Monitoring Report
6	Mobile Van Monitoring
7-A, 7-B & 7C	Treated Wastewater Quality Results – Refinery ETP
8-A, 8-B & 8-C	Plant Peripheral Noise Monitoring Report
9	Marine Water Quality Results
10	Treated Wastewater Quality Results – MTF ETP
11	Groundwater Quality Monitoring Analysis Report.
12	Expenditure for Environmental Protection Measures
13	Sample LDAR Monitoring of plant
14	Organogram of Environment dept.
15	HSEF Policy

Note: In Annexures, “A” denotes reports for RIL, Refinery Division i.e. DTA refinery; “B” denotes reports for RIL, Unit of Reliance Jamnagar SEZ refinery and “C” denotes for RIL, J3 complex (i.e. PX4 complex & C2 complex).

ANNEXURE- 1A

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: April '2023

(1) Inputs

	Quantity (MT)	S%	S
Total Crude Oil Intake	**2841983**	**2.00**	**56735**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	405549	0	0
Imported LSWR	12668	0.23	29
Naphtha	64685	0.01	7
Intermediate Stock	3419806	0.16	5471
GRAND TOTAL	**6744691**	**0.92**	**62242**

(2) Outputs

Product	Quantity (MT)	S%	S
LPG+Propane+Butane	346585	0.000	0
HSD Export	487771	0.04	171
HSD Domestic	300945	0.00	6.5
Kero+ATF	283102	0.22	623
MS	51084	0.01	5
Naptha	363236	0.02	72
Coke	279693	7.6	21257
Sulphur	35628	100.0	35628
FO	63498	0.52	327
CBFS	31015	1.2	386
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	319213	1.07	3424
Sub Total	**2561771**		**61906.4**
Polypropylene+propylene	112210	No sulphur	0.00
Utility to SEZ	974	No sulphur	0.00
P-Xylene	110871	No sulphur	0.00
O-Xylene	30685	No sulphur	0.00
Benzene	29032	No sulphur	0.00
Heavy Aromatics	58504	No sulphur	0.0
Loss	3704993	0	0.0
TOTAL	**6609040**		**61906**

Sulphur Emission, Tonnes 336

SO2 Emission, MT/DAY 22.41

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: May '2023

(1) Inputs

	Quantity (MT)	S%	S
Total Crude Oil Intake	**2879230**	**1.96**	**56414**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	457769	0	0
Imported LSWR	5063	0.23	12
Naphtha	58317	0.01	8
Intermediate Stock	3530591	0.10	3512
GRAND TOTAL	**6930969**	**0.86**	**59946**

Sulphur Emission, Tonnes **353**

SO2 Emission, MT/DAY **22.79**

(2) Outputs

Product	Quantity (MT)	S%	S
LPG+Propane+Butane	354701	0.000	0
HSD Export	479065	0.03	164
HSD Domestic	399432	0.00	8.8
Kero+ATF	258501	0.22	569
MS	35776	0.01	3
Naptha	440947	0.02	88
Coke	308582	7.9	24378
Sulphur	31100	100.0	31100
FO	61378	0.50	309
CBFS	14392	1.2	179
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	219232	1.27	2788
Sub Total	**2603107**		**59592.6**
Polypropylene+propylene	116866	No sulphur	0.00
Utility to SEZ	1039	No sulphur	0.00
P-Xylene	108261	No sulphur	0.00
O-Xylene	32172	No sulphur	0.00
Benzene	27266	No sulphur	0.00
Heavy Aromatics	58701	No sulphur	0.0
Loss	3855663	0	0.0
TOTAL	**6803075**		**59593**

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: June '2023

(1) Inputs

	Quantity (MT)	S%	S
Total Crude Oil Intake	**2783617**	**2.10**	**58536**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	442629	0	0
Imported LSWR	2808	0.23	6
Naphtha	60111	0.01	9
Intermediate Stock	3473546	0.07	2445
GRAND TOTAL	**6762712**	**0.90**	**60996**

Sulphur Emission **Tonnes** **351**

SO2 Emission, MT/DAY **23.43**

(2) Outputs

Product	Quantity (MT)	S%	S
LPG+Propane+Butane	337442	0.000	0
HSD Export	500885	0.04	175
HSD Domestic	398240	0.00	10.5
Kero+ATF	288869	0.22	636
MS	33339	0.01	2
Naptha	390755	0.02	78
Coke	262990	7.6	19856
Sulphur	29108	100.0	29108
FO	53735	0.48	259
CBFS	21746	1.2	271
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	244470	4.19	10242
Sub Total	**2561578**		**60644.1**
Polypropylene+propylene	110072	No sulphur	0.00
Utility to SEZ	1040	No sulphur	0.00
P-Xylene	115384	No sulphur	0.00
O-Xylene	29370	No sulphur	0.00
Benzene	29138	No sulphur	0.00
Heavy Aromatics	41973	No sulphur	0.0
Loss	3747139	0	0.0
TOTAL	**6635694**		**60644**

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: July '2023

(1) Inputs

	Quantity (MT)	S%	S
Total Crude Oil Intake	**2949131**	**2.03**	**59991**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	458568	0	0
Imported LSWR	3244	0.23	7
Naphtha	45944	0.02	7
Intermediate Stock	3657905	0.23	8381
GRAND TOTAL	**7114793**	**0.96**	**68386**

Sulphur Emission **Tonnes** **340**

SO2 Emission, MT/DAY **21.93**

(2) Outputs

Product	Quantity (MT)	S%	S
LPG+Propane+Butane	399493	0.000	0
HSD Export	434918	0.03	148
HSD Domestic	368609	0.00	9.5
Kero+ATF	313161	0.22	690
MS	33135	0.01	2
Naptha	411132	0.02	82
Coke	308282	7.9	24354
Sulphur	35778	100.0	35778
FO	67291	0.51	345
CBFS	27117	1.2	338
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	433744	1.45	6294
Sub Total	**2832661**		**68046.4**
Polypropylene+propylene	116453	No sulphur	0.00
Utility to SEZ	1104	No sulphur	0.00
P-Xylene	94459	No sulphur	0.00
O-Xylene	24320	No sulphur	0.00
Benzene	28206	No sulphur	0.00
Heavy Aromatics	25009	No sulphur	0.0
Loss	3855951	0	0.0
TOTAL	**6978163**		**68046**

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: August '2023

(1) Inputs

	Quantity (MT)	S%	S
Total Crude Oil Intake	**2936948**	**2.03**	**59649**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	430063	0	0
Imported LSWR	5108	0.23	12
Naphtha	52545	0.01	8
Intermediate Stock	3718756	0.21	7845
GRAND TOTAL	**7143419**	**0.95**	**67514**

Sulphur Emission **Tonnes** **349**

SO2 Emission, MT/DAY **22.53**

(2) Outputs

Product	Quantity (MT)	S%	S
LPG+Propane+Butane	374510	0.000	0
HSD Export	589810	0.03	202
HSD Domestic	358721	0.00	10.0
Kero+ATF	293498	0.22	647
MS	33752	0.01	2
Naptha	367379	0.02	73
Coke	264361	7.9	20885
Sulphur	35826	100.0	35826
FO	72785	0.49	357
CBFS	27442	1.2	342
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	374081	2.36	8816
Sub Total	**2792166**		**67165.0**
Polypropylene+propylene	118353	No sulphur	0.00
Utility to SEZ	1132	No sulphur	0.00
P-Xylene	114897	No sulphur	0.00
O-Xylene	32130	No sulphur	0.00
Benzene	24986	No sulphur	0.00
Heavy Aromatics	37115	No sulphur	0.0
Loss	3876293	0	0.0
TOTAL	**6997071**		**67165**

ANNEXURE- 1A

Reliance Industries Ltd. (Refinery Division). Jamnagar
Monthly Sulphur Balance

Month: September '2023

INPUT	Quantity (MT)	S%	S
Total Crude Oil Intake	**2807618**	**2.13**	**59830**
Methanol/Nitrogen/Coke water/Natural Gas/Utility from SEZ	388760	0	0
Imported LSWR	14163	0.23	33
Naphtha	44389	0.02	7
Intermediate Stock	3423991	0.23	7899
GRAND TOTAL	**6678920**	**1.01**	**67768**

OUTPUT	Quantity (MT)	S%	S
PRODUCT			
LPG+Propane+Butane	219530	0.000	0
HSD Export	570874	0.03	194
HSD Domestic	340373	0.00	9.4
Kero+ATF	277363	0.22	611
MS	28215	0.01	2
Naptha	277566	0.02	55
Coke	318123	7.9	25132
Sulphur	38519	100.0	38519
FO	89478	0.53	478
CBFS	19302	1.2	240
Sulphur as Sulphide in ETP Influent			6.70
Intermediate Stock	504143	0.44	2200
Sub Total	**2683486**		**67447.8**
Polypropylene+propylene	70101	No sulphur	0.00
Utility to SEZ	1106	No sulphur	0.00
P-Xylene	103695	No sulphur	0.00
O-Xylene	29609	No sulphur	0.00
Benzene	21364	No sulphur	0.00
Heavy Aromatics	34377	No sulphur	0.0
Loss	3626241	0	0.0
TOTAL	**6569980**		**67448**

Sulphur Emission Tonnes **320**

SO2 Emission, MT/DAY **21.36**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: April '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	2761362.61	2.22	61397
2	Intermediate Stock	2470681.77	0.24	5933
3	Naphtha	32072.00	0.00	1
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	23276.95	0.00	0
5	HSGO/VGO	111483.67	0.00	2858
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	39660.60	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**5438537.59**		**70189**

	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	479802.60	0.0008	3.76
2	High Speed Diesel (HSD)	1718957.35	0.0009	15.35
3	Motor Spirit (MS)+ Reformate	788671.49	0.0006	4.73
4	Alkylate	217938.00	0.0005	1.17
5	Naphtha	267197.04	0.0014	3.65
6	ATF	206088.40	0.00	133.96
7	Petroleum Coke (Non-Calcined)	329134.04	6.85	22545.68
8	Un-Refined Sulphur	44490.82	100.0	44490.82
9	CBFS+VGO+VR+Gas oil	56863.11	0.46	258.96
10	Intermediate Stock	763047.74	0.00	35.43
11	"S" as sulphide in Effluent			4.91
	Sub Total			
1	Polypropylene	86876.78	0.00	0.00
	Loss	479275.71	0.02	343.78
	Grand Total	**5438343.09**		**67842**

Sulphur Emission	**Tonnes**	**344**
SO2 Emission	**Tonnes/day**	**22.92**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: May '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	2761362.61	2.15	59487
2	Intermediate Stock	2524831.46	0.17	4252
3	Naphtha	32072.00	0.00	1
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	23276.95	0.00	0
5	HSGO/VGO	111483.67	0.00	2731
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	39660.60	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**5492687.28**		**66471**

	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	479802.60	0.0008	3.76
2	High Speed Diesel (HSD)	1718957.35	0.0009	14.98
3	Motor Spirit (MS)+ Reformate	788671.49	0.0006	4.73
4	Alkylate	217938.00	0.0005	1.17
5	Naphtha	267197.04	0.0014	3.65
6	ATF	206088.40	0.00	133.96
7	Petroleum Coke (Non-Calcined)	329134.04	6.40	21064.58
8	Un-Refined Sulphur	44490.82	100.0	44490.82
9	CBFS+VGO+VR+Gas oil	56863.11	0.56	321.26
10	Intermediate Stock	763047.74	0.01	57.34
11	"S" as sulphide in Effluent			5.08
	Sub Total			
1	Polypropylene	86876.78	0.00	0.00
	Loss	511387.19	0.02	369.69
	Grand Total	**5470454.56**		**66471**

Sulphur Emission **Tonnes** **370**

SO2 Emission **Tonnes/day** **23.85**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: June '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	2254322.12	2.35	52977
2	Intermediate Stock	2549020.56	0.28	7217
3	Naphtha	68159.12	0.00	2
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	19024.33	0.00	0
5	HSGO/VGO	160774.33	0.00	3698
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	31996.77	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**5083297.22**		**63894**

Sulphur Emission	**Tonnes**	**354**
SO2 Emission	**Tonnes/day**	**23.60**

II	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	416445.61	0.0008	3.30
2	High Speed Diesel (HSD)	1543604.38	0.0007	10.42
3	Motor Spirit (MS)+ Reformate	801473.99	0.0006	4.81
4	Alkylate	192141.53	0.0005	1.03
5	Naphtha	194212.28	0.0013	2.55
6	ATF	171785.45	0.00	111.66
7	Petroleum Coke (Non-Calcined)	297111.98	6.29	18673.49
8	Un-Refined Sulphur	42272.38	100.0	42272.38
9	CBFS+VGO+VR+Gas oil	101293.97	0.73	744.35
10	Intermediate Stock	710854.35	0.25	1710.63
11	"S" as sulphide in Effluent			4.91
	Sub Total			
1	Polypropylene	85417.67	0.00	0.00
	Loss	526683.65	0.02	353.98
	Grand Total	**5083297.22**		**63894**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: July '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	2564383.58	2.13	54621
2	Intermediate Stock	2371443.18	0.42	10015
3	Naphtha	24818.04	0.00	1
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	19432.75	0.00	0
5	HSGO/VGO	112909.39	0.00	2779
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	37785.99	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**5130772.92**		**67415**

Sulphur Emission	**Tonnes**	**359**
SO2 Emission	**Tonnes/day**	**23.19**

II	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	408832.02	0.0008	3.13
2	High Speed Diesel (HSD)	1527291.15	0.0009	14.36
3	Motor Spirit (MS)+ Reformate	834784.07	0.0006	5.01
4	Alkylate	220768.47	0.0005	1.18
5	Naphtha	229287.61	0.0014	3.15
6	ATF	227588.63	0.00	147.93
7	Petroleum Coke (Non-Calcined)	312589.43	5.95	18599.07
8	Un-Refined Sulphur	47026.91	100.0	47026.91
9	CBFS+VGO+VR+Gas oil	86232.48	0.80	687.97
10	Intermediate Stock	597349.14	0.10	547.68
11	"S" as sulphide in Effluent			5.08
	Sub Total			
1	Polypropylene	87910.63	0.00	0.00
	Loss	551112.37	0.01	359.41
	Grand Total	**5130772.92**		**67401**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: August '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	2530512.89	2.24	56683
2	Intermediate Stock	2470197.44	0.66	16204
3	Naphtha	18775.00	0.00	0
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	29688.36	0.00	0
5	HSGO/VGO	199629.54	0.00	4971
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	37636.24	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**5286439.47**		**77859**

Sulphur Emission	**Tonnes**	**372**
SO2 Emission	**Tonnes/day**	**23.99**

II	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	414459.42	0.0008	3.27
2	High Speed Diesel (HSD)	1405299.45	0.0012	16.67
3	Motor Spirit (MS)+ Reformate	832170.04	0.0006	4.99
4	Alkylate	235229.53	0.0005	1.26
5	Naphtha	210809.00	0.0014	2.85
6	ATF	230435.00	0.00	149.78
7	Petroleum Coke (Non-Calcined)	329413.23	5.70	18776.55
8	Un-Refined Sulphur	55482.29	100.0	55482.29
9	CBFS+VGO+VR+Gas oil	49749.41	0.48	237.40
10	Intermediate Stock	865823.83	0.34	2807.13
11	"S" as sulphide in Effluent			5.08
	Sub Total			
1	Polypropylene	86659.36	0.00	0.00
	Loss	570908.91	0.02	371.88
	Grand Total	**5286439.47**		**77859**

ANNEXURE – 1B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar
Monthly Sulphur Balance

Month: September '2023

	INPUT	Quantity (MT)	% S	S (T)
I	**Consumption**			
1	Total Crude	1985946.69	2.15	42777
2	Intermediate Stock	2571073.84	0.66	17027
3	Naphtha	84994.62	0.00	2
4	MPG/Methanol/ Water in Pet Coke/ Nitogen	28900.35	0.00	0
5	HSGO/VGO	64603.08	0.00	1518
6	LSFO/LSWR/VR	0.00	0.00	0
7	Natural Gas	26027.91	0.00	0
8	Pet Coke	0.00	0.00	0
	Sub Total	**4761546.49**		**61324**

Sulphur Emission	**Tonnes**	**335**
SO2 Emission	**Tonnes/day**	**22.36**

II	OUTPUT	Quantity (MT)	% S	S (T)
II	**Product**			
1	LPG + Mixpetgas+NG+Nbutane	395758.61	0.2451	970.11
2	High Speed Diesel (HSD)	1596074.36	0.0021	33.34
3	Motor Spirit (MS)+ Reformate	696614.40	0.0006	4.18
4	Alkylate	170779.00	0.0005	0.91
5	Naphtha	185256.70	0.0013	2.49
6	ATF	73080.05	0.00	47.50
7	Petroleum Coke (Non-Calcined)	266678.59	5.85	15600.70
8	Un-Refined Sulphur	43445.76	100.0	43445.76
9	CBFS+VGO+VR+Gas oil	102545.59	0.64	660.99
10	Intermediate Stock	609878.98	0.04	218.21
11	"S" as sulphide in Effluent			4.91
	Sub Total			
1	Polypropylene	94147.67	0.00	0.00
	Loss	527286.80	0.05	335.36
	Grand Total	**4761546.49**		**61324**

ANNEXURE – 2A

Reliance Industries Limited (Refinery Division, Jamnagar)
Stack Emission Monitoring Results
(1st Apr '23 to 30th Sept'23)

Sr. No.	Furnace	Stack No.	SO2 (mg/Nm3)			NOx (mg/Nm3)			PM (mg/Nm3)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
I	**Stacks Involving Fuel Burning**										
A.	**CPP**										
1	HRSG-1	MS-EE 951-201	9.8	12.8	11.3	43.0	48.0	45.5	1.0	1.2	1.1
2	HRSG-2	MS-EE 951-202	10.2	13.2	11.6	42.0	48.0	44.5	1.0	1.2	1.1
3	HRSG-3	MS-EE 951-203	9.8	13.2	11.4	42.0	48.0	45.8	1.2	1.3	1.3
4	HRSG-4	MM-RR 771-201	9.8	11.6	10.5	42.0	47.0	44.5	1.0	1.4	1.1
5	HRSG-5	MM-RR 771-202	11.0	13.4	12.6	43.0	48.0	46.0	1.0	1.4	1.3
6	HRSG-6	MM-RR 771-203	11.0	13.4	11.9	42.0	49.0	44.5	1.0	1.1	1.1
7	HRSG-7	MM-RR 771-204	11.6	13.2	12.5	41.0	49.0	46.5	1.2	1.3	1.3
8	HRSG-8	MS-EE 951-204	10.2	12.5	11.2	42.0	47.0	44.4	1.0	1.3	1.1
9	HRSG-9	MS-EE G-201	9.8	12.0	10.9	41.0	46.0	43.7	1.0	1.4	1.2
10	Aux- Blr -1*	MB-RU 771-B010	9.8	285.0	161.0	62.0	67.0	64.7	1.3	5.7	4.1
11	Aux- Blr -2*	MB-RU 771-B011	10.2	285.0	159.5	60.0	68.0	64.3	1.0	5.5	4.3
12	Aux- Blr -3*	MB-EE 951-B010	11.6	188.0	126.0	62.0	69.0	64.7	1.2	5.5	3.6
13	Aux- Blr -4*	MB-EE 951-B011	9.8	280.0	169.8	64.0	68.0	65.5	1.0	6.1	4.6
14	Aux- Blr -5*	MB-EE 952-B010	12.0	267.0	126.6	62.0	69.0	65.0	1.6	6.2	4.7
15	Aux- Blr -6*	MB-EE 952-B011	11.6	262.0	132.2	64.0	67.0	66.0	1.0	5.4	3.8
B.	**Crude Complex**										
1	CDU-1-FO1*	MB-RD311-F01	168.0	244.0	189.2	41.0	45.0	42.5	3.8	5.6	4.5
2	CDU-1 -F51*	MB-RD311-F51	170.0	258.0	191.5	40.0	44.0	42.5	3.9	6.5	4.6
3	VDU-1	MB-RD311-F02	10.2	13.5	12.1	35.0	38.0	36.7	1.0	1.0	1.0
4	CDU-2-FO1*	MB-RD312-F01	165.0	262.0	197.3	42.0	46.0	44.0	4.2	5.8	4.9
5	CDU-2 -F51*	MB-RD312-F51	170.0	248.0	190.5	40.0	45.0	42.2	3.6	6.2	4.9
6	VDU-2	MB-RD312-F02	11.6	13.2	12.3	33.0	36.0	34.8	1.0	1.1	1.0
7	DHT-1	MB-RH351-F01	9.8	11.6	10.6	32.0	35.0	33.2	1.0	1.2	1.1
8	DHT-2	MB-RH352-F01	9.8	12.2	10.6	31.0	36.0	33.2	1.2	1.2	1.2
9	VGO HT- 1	MB-RH361-F02	10.2	13.2	11.9	33.0	36.0	35.2	1.0	1.2	1.1
10	VGO HT- 2	MB-RH362-F02	11.0	13.4	12.1	34.0	37.0	35.5	1.0	1.2	1.1
11	LNHT	MB-RH471-F01	9.8	12.2	10.3	28.0	33.0	30.7	1.0	1.0	1.0
12	Hydrogen-1	MB-RH521-SO1	SHUT DOWN								
13	Hydrogen-2	MB-RH522-SO1	SHUT DOWN								
14	Hydrogen-3	MB-RH523-SO1	SHUT DOWN								
15	KHT	MB-RH-365-F02	10.2	12.5	11.5	32.0	35.0	33.5	1.0	1.0	1.0
16	CNHT	MB-RH-222-F01	9.8	11.6	11.1	31.0	34.0	32.7	1.0	1.3	1.2
C.	**Aromatics**										

ANNEXURE – 2A

Reliance Industries Limited (Refinery Division, Jamnagar)
Stack Emission Monitoring Results
(1st Apr '23 to 30th Sept'23)

Sr. No.	Furnace	Stack No.	SO2 (mg/Nm3)			NOx (mg/Nm3)			PM (mg/Nm3)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
1	Platforming	MB-AY231-F01	11.6	14.2	12.9	35.0	37.0	36.2	1.1	1.3	1.2
2	HNHT	MB-AY221-F01	9.8	11.6	10.5	31.0	35.0	33.3	1.0	1.0	1.0
3	Xylene -1	MB-AY241-F01	11.6	12.8	12.3	36.0	37.0	36.3	1.0	1.2	1.1
4	Xylene -2	MB-AY242-F01	13.2	72.0	52.3	33.0	36.0	34.5	1.2	3.2	2.4
5	Xylene -3	MB-AY243-F01	11.6	72.0	47.9	35.0	38.0	36.3	1.4	3.1	2.5
6	O-Xylene	MB-AY251-F01A	9.8	14.5	12.0	35.0	38.0	36.7	1.0	1.1	1.1
7	Isomar 1	MB-AY271-F01	10.2	12.8	11.5	37.0	39.0	37.7	1.0	1.0	1.0
8	Isomar 2	MB-AY272-F01	9.8	12.0	10.9	38.0	39.0	38.5	1.0	1.2	1.1
9	Isomar 3	MB-AY273-F01	9.8	13.2	10.8	37.0	39.0	38.3	1.0	1.0	1.0
10	Tatoray-1	MB-AY281-F01	SHUT DOWN								
11	Tatoray-2	MB-AY281-F51	9.8	11.6	10.4	38.0	40.0	39.3	1.0	1.1	1.0
D.	**Coker**										
1	Coker-1	MB-RK371-F01	9.8	13.4	11.9	32.0	36.0	34.3	1.1	1.3	1.2
2	Coker-2	MB-RK371-F02	10.2	12.5	11.3	33.0	37.0	35.7	1.0	1.2	1.1
3	Coker-3	MB-RK371-F03	10.2	14.2	11.5	32.0	37.0	35.0	1.0	1.2	1.1
4	Coker-4	MB-RK371-F04	9.8	13.4	11.7	32.0	35.0	33.7	1.2	1.2	1.2
5	Coker-5	MB-RK371-F07	10.2	12.8	11.4	32.0	38.0	35.2	1.0	1.0	1.0
II	**Stacks Involving Process Emission**										
A.	**FCC Complex**										
1	FCCC-N	MB-RF412-S01	452	482	468	62.0	66.0	63.5	58.0	65.0	62.2
2	FCCC-S	MB-RF412-S51	458	475	466	64.0	68.0	66.0	60.0	68.0	64.5
B.	**Sulphur Complex**										
1	SRU-1	MB-RH451-SO1	955	1195	1061	52.0	56.0	54.5	NA	NA	NA
2	SRU-2	MB-RH452-SO1	840	1102	988	52.0	58.0	54.7	NA	NA	NA
3	SRU-3	MB-RH453-SO1	1012	1238	1110	52.0	58.0	55.7	NA	NA	NA
C.	**ETP-Incinerator**										
1	Incinerator	_	24	28	26	30.0	34.0	31.5	8.4	9.2	8.7
III	**Stacks Involving Material Handling**										
A.	**SGU**										
1	SGU-1	MF-RH-465-Y-01	NA	NA	NA	NA	NA	NA	8.6	9.5	9.1
2	SGU-2	MF-RH-465-Y-02	NA	NA	NA	NA	NA	NA	8.4	9.6	8.9

Note: * Furnaces / Heaters were on dual (liquid+gas) firing & others were on gas firing during sampling.
NA : Not applicable; BDL -Below Detectable Level

ANNEXURE -2B

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar
Stack Emission Monitoring Results
(1st Apr '2023 to 30th Sept '2023)

Sr. No.	Stack Attached to	Stack No.	SO2 mg/Nm3			NOX mg/Nm3			PM mg/Nm3		
			MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
I	**Stacks Involving Fuel Burning**										
A.	**CPP**										
1	HRSG-1	MB-BBZ9H1-B01	10	12	11	42	47	45	1.0	1.2	1.1
2	HRSG-2	MB-BBZ9H2-B01	10	13	11	42	46	44	1.0	1.4	1.2
3	HRSG-3	MB-BBZ9H3-B01	10	13	11	41	47	44	1.0	1.2	1.1
4	HRSG-4	MB-BBZ9H4-B01	10	13	12	41	48	45	1.0	1.2	1.1
5	HRSG-5	MB-BBZ9H5-B01	10	13	12	43	47	45	1.1	1.6	1.2
6	HRSG-6	MB-BBZ9H6-B01	10	13	11	45	47	46	1.0	1.4	1.2
7	Aux- Boiler-1*	MB-BBZ9B1-B01	10	168	63	64	67	65	1.3	4.2	2.8
8	Aux- Boiler-2*	MB-BBZ9B2-B01	10	156	41	61	66	63	1.2	3.6	2.0
9	Aux- Boiler-3*	MB-BBZ9B3-B01	10	13	11	64	66	65	1.0	1.1	1.1
10	Aux- Boiler-4*	MB-BBZ9B4-B01	13	172	53	63	66	65	1.0	3.8	1.9
B.	**Crude Complex**										
1	CDU-1-FO1*	MB-RDZ311-F01	13	185	125	40	43	42	1.2	4.5	3.2
2	CDU-1-F51*	MB-RDZ311-F51	12	184	121	39	45	42	1.0	4.1	2.9
3	VDU-1	MB-RDZ311-F02	10	12	11	33	37	36	1.0	1.0	1.0
4	CDU-2-FO1*	MB-RDZ312-F01	13	180	147	39	46	42	1.0	4.5	3.5
5	CDU-2-F51*	MB-RDZ312-F51	13	188	125	41	48	43	1.0	4.6	3.0
6	VDU-2	MB-RDZ312-F02	10	13	12	34	37	35	1.0	1.2	1.1
7	VGOHT- 1	MB-RHZ361-F01/F02	10	13	11	33	38	36	1.0	1.0	1.0
8	VGOHT- 1	MB-RHZ361-F03	10	12	11	31	36	34	1.0	1.2	1.1
9	VGOHT- 2	MB-RHZ362-F01/F02	10	13	11	32	36	34	1.1	1.1	1.1
10	VGOHT- 2	MB-RHZ362-F03	10	12	11	32	37	35	1.0	1.1	1.1
C.	**Hydrogen & Merox Complex**										
1	Hydrogen-4	MB-RHZ524-S01	Shut Down								
2	Hydrogen-5	MB-RHZ523-S01	Shut Down								
3	Hydrogen-6	MB-RHZ522-S01	Shut Down								
4	Hydrogen-7	MB-RHZ521-S01	Shut Down								
5	Hydrogen-8	MB-RHZ525-S01	Shut Down								
D.	**Coker**										
1	Coker-1	MB-RKZ371-F01	10	13	12	33	36	35	1.0	1.2	1.1
2	Coker-2	MB-RKZ371-F02	10	13	11	34	37	36	1.0	1.2	1.1
3	Coker-3	MB-RKZ371-F03	10	13	12	31	38	35	1.0	1.4	1.2
4	Coker-4	MB-RKZ371-F04	10	13	11	32	38	35	1.2	1.3	1.3
5	Coker-5	MB-RKZ371-F07	10	12	11	32	37	35	1.0	1.2	1.1
E.	**Clean Fuel Project**										
1	DHDS-1	MBRHZ355-F01A	12	13	13	33	36	34	1.0	1.2	1.1

ANNEXURE -2B

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar
Stack Emission Monitoring Results
(1st Apr '2023 to 30th Sept '2023)

Sr. No.	Stack Attached to	Stack No.	SO2 mg/Nm3			NOX mg/Nm3			PM mg/Nm3		
			MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
2	DHDS-1	MBRHZ355-F01B	10	13	11	33	36	35	1.1	1.3	1.2
3	DHDS-2	MBRHZ358-F01A	10	15	11	31	38	35	1.0	1.2	1.1
4	DHDS-2	MBRHZ358-F01B	12	13	13	32	36	34	1.0	1.4	1.2
5	DHDS-2	MBRHZ358-F02	10	12	11	33	37	34	1.0	1.2	1.1
6	Common Facilities	MBRHZ357-F01	10	13	12	32	36	35	1.0	1.3	1.1
7	LCOHC	MBRHZ354-F01	10	13	12	32	37	34	1.0	1.2	1.1
F.	**Aromatics**										
1	Platformer	MB-AYZ231-F02	10	13	12	34	38	36	1.0	1.3	1.2
2	Platformer	MB-AYZ231-F01/F03	10	12	11	34	37	35	1.1	1.2	1.2
3	Platformer	MB-AYZ231-F01A/F03A	10	13	12	36	38	37	1.0	1.2	1.1
4	HNUU	MB-AYZ221-F01/F02	10	13	11	33	34	33	1.0	1.3	1.2
G.	**Alkylation**										
1	SAR	MB-RFZ430-F41	10	13	11	32	36	33	1.0	1.0	1.0
II	**Stacks Involving Process Emission**										
A.	**FCC Complex**										
1	FCC-N	MB-RFZ412-S01	13	468	195	42	67	52	5.5	38.0	18.8
2	FCC-S	MB-RFZ412-S51	13	482	200	45	66	53	5.9	41.0	19.5
B.	**Sulphur Complex**										
1	SRU-1	MB-RHZ451-S01	258	497	414	52	57	55	NA	NA	NA
2	SRU-2	MB-RHZ452-S01	482	846	565	52	56	54	NA	NA	NA
3	SRU-3	MB-RHZ453-S01	272	572	484	52	58	55	NA	NA	NA
C.	**Alkylation**										
1	SAR	MB-RFZ430-S01	214	253	239	NA	NA	NA	NA	NA	NA
III	**Stacks Involving Material Handling**										
A.	**Sulphur Pestillation Unit**										
1	SPU-1	MA-RHZ465-F01A/B	NA	NA	NA	NA	NA	NA	8.5	9.6	9.0
2	SPU-2	MA-RHZ465-F02A/B	NA	NA	NA	NA	NA	NA	8.5	9.2	8.9

Note: 1. *Furnaces / Heaters were on duel (liquid + gas) firing and others were on gas firing during sampling. 2. ND: Not Detectable. 3. NA – Not Applicable

ANNEXURE - 2C

Reliance Industries Ltd. Jamnagar
STACK EMISSION MONITORING REPORT
(1st Apr '2023 to 30th Sept'2023)

Sr. No.	Stack Attached to	Stack No.	SO2 (mg/Nm3)			NOX (mg/Nm3)			PM (mg/Nm3)		
			MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
	PX-4 Complex										
1	Xylene Recovery Column Reboiler	MB-AYZ241-F000001A/B	9.8	11.6	10.3	32	36	34	1.0	1.2	1.2
2	Isomer Charge Heater	MB-AYZ271-F000001A/B	9.8	12.8	10.7	31	36	34	1.0	1.4	1.1
3	TA Charge Heater	MB-AYZ281-F000001	11.6	13.2	12.2	31	38	34	1.0	1.0	1.0
4	TA Stabilizer Heater	MB-AYZ281-F000002	9.8	12.5	11.1	34	37	36	1.0	1.1	1.1
5	Toluene Column Reboiler	MB-AYZ281-F000003	9.8	13.4	10.9	32	37	34	1.0	1.4	1.2
6	HA Column Reboiler	MB-AYZ281-F000004	9.8	12.5	11.4	32	36	35	1.0	1.2	1.1
A	**C2-COMPLEX "CPP"**										
1	HRSG - 1	MB-BBC9H1-B-001	9.8	12.2	10.6	42.0	47.0	44.5	1.0	1.8	1.3
2	HRSG - 2	MB-BBC9H2-B-001	10.2	12.5	11.4	43.0	49.0	46.0	1.0	1.5	1.2
3	AUX B'ER - 1	MB-BBC9B1-B-001	10.2	12.5	11.2	59.0	65.0	62.5	1.3	1.6	1.4
4	AUX B'ER - 2	MB-BBC9B2-B-001	9.8	12.5	10.7	62.0	68.0	65.2	1.0	1.2	1.1
B	**C2-COMPLEX "ROGC"**										
1	ROGC-1	MB-F010001	10.2	13.2	11.6	33.0	37.0	35.0	1.0	1.2	1.1
2	ROGC-2	MB-F010002	9.8	13.4	12.2	31.0	38.0	35.5	1.0	1.4	1.2
3	ROGC-3	MB-F010003	10.2	13.2	11.9	32.0	36.0	34.6	1.0	1.4	1.1
4	ROGC-4	MB-F010004	9.8	12.5	11.1	33.0	36.0	34.4	1.1	1.3	1.2
5	ROGC-5	MB-F010005	10.2	13.4	12.0	31.0	37.0	33.2	1.0	1.4	1.2
6	ROGC-6	MB-F010006	9.8	13.2	11.7	32.0	37.0	34.5	1.0	1.3	1.1
7	ROGC-HEATER-01	MB-F160001	9.8	10.2	10.0	31.0	37.0	34.3	1.0	1.0	1.0
8	ROGC-HEATER-02	MB-F160002	10.2	11.6	11.1	32.0	36.0	33.7	1.2	1.2	1.2
C.	**CPP**										
	HRSG-10	MB-BBD9H1-B-001	8.5	13.4	11.1	42.0	46.0	44.5	1.0	1.3	1.2
	HRSG-11	MB-BBD9H2-B-001	8.5	13.4	11.6	42.0	46.0	44.0	1.0	1.0	1.0
	HRSG-12	MB-BBD9H3-B-001	8.5	12.5	11.2	43.0	47.0	45.0	1.0	1.0	1.0

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar
Continuous Online Stack Emission & Effluent Monitoring Results

1. Continuous Online Stack Emission Monitoring Results (1st Apr '2023 to 30th Sept '2023)

Sr. No.	Stack Attached to	Stack No.	SO2 (mg/Nm3)			NOx (mg/Nm3)			PM (mg/Nm3)			CO (mg/Nm3)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
I	**Stacks Involving Fuel Burning**													
A.	**CPP**													
1	HRSG-1	MB-BBZ9H1-B01	2.5	19.5	5.1	12.5	225.0	28.7	0.3	1.4	0.5	5.0	15.0	10.0
2	HRSG-2	MB-BBZ9H2-B01	2.7	125.4	32.0	12.6	200.7	28.6	0.4	7.4	0.9	5.2	133.2	36.5
3	HRSG-3	MB-BBZ9H3-B01	2.5	126.8	11.9	12.5	207.8	30.6	0.3	7.4	0.6	5.0	87.0	10.0
4	HRSG-4	MB-BBZ9H4-B01	2.5	126.3	5.5	12.5	50.2	25.0	0.3	7.5	0.9	5.0	18.9	13.5
5	HRSG-5	MB-BBZ9H5-B01	2.5	744.5	28.6	12.5	221.8	51.4	0.5	7.5	1.1	5.0	89.9	8.4
6	HRSG-6	MB-BBZ9H6-B01	2.5	127.5	19.9	12.5	225.0	41.2	0.3	7.5	1.0	5.0	89.9	19.1
7	Aux- Boiler-1	MB-BBZ9B1-B01	2.5	764.6	220.3	13.3	149.8	64.8	0.3	7.5	5.0	5.9	36.2	15.4
8	Aux- Boiler-2	MB-BBZ9B2-B01	2.5	763.1	85.7	12.6	52.5	35.0	0.3	45.0	5.2	7.5	44.8	20.1
9	Aux- Boiler-3	MB-BBZ9B3-B01	10.1	335.8	52.7	12.9	247.3	33.9	0.3	45.0	4.2	5.0	106.1	17.3
10	Aux- Boiler-4	MB-BBZ9B4-B01	2.5	366.0	44.4	12.5	224.8	31.2	0.3	28.0	2.6	5.0	30.6	12.1
B.	**Crude Complex**													
1	CDU-1-FO1*	MB-RDZ311-F01	2.5	745.9	97.7	12.5	266.4	49.5	0.4	24.6	3.0	5.0	112.0	12.2
2	CDU-1-F51*	MB-RDZ311-F51	2.5	385.5	56.6	12.5	248.1	24.9	0.3	34.5	11.3	5.0	109.1	11.2
3	VDU-1	MB-RDZ311-F02	2.5	45.0	10.0	12.5	224.8	34.4	0.5	2.8	0.6	5.0	88.6	9.9
4	CDU-2-FO1*	MB-RDZ312-F01	2.5	402.5	41.0	12.5	270.0	31.3	0.3	25.8	15.1	5.0	112.7	16.1
5	CDU-2-F51*	MB-RDZ312-F51	2.5	379.2	71.6	12.5	262.5	28.2	0.3	37.0	8.9	5.0	135.0	11.7
6	VDU-2	MB-RDZ312-F02	2.5	45.0	14.8	12.5	222.7	24.9	0.3	4.4	0.5	5.0	89.6	8.2
7	VGOHT- 1	MB-RHZ361-F01/F02	5.0	45.0	17.8	25.0	221.6	37.5	0.6	4.5	1.2	10.0	89.7	14.8
8	VGOHT- 2	MB-RHZ362-F01/F02	5.0	45.0	27.7	25.0	223.0	37.5	0.5	3.8	0.7	10.0	90.0	15.1

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar
Continuous Online Stack Emission & Effluent Monitoring Results

1. Continuous Online Stack Emission Monitoring Results (1st Apr '2023 to 30th Sept '2023)

Sr. No.	Stack Attached to	Stack No.	SO2 (mg/Nm3)			NOx (mg/Nm3)			PM (mg/Nm3)			CO (mg/Nm3)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
C.	**Hydrogen & Merox Complex**													
1	Hydrogen-4	MB-RHZ524-S01	Not in Operation											
2	Hydrogen-5	MB-RHZ523-S01	Not in Operation											
3	Hydrogen-6	MB-RHZ522-S01	Not in Operation											
4	Hydrogen-7	MB-RHZ521-S01	Not in Operation											
5	Hydrogen-8	MB-RHZ525-S01	Not in Operation											
D.	**Coker**													
1	Coker-1	MB-RKZ371-F01	6.3	45.0	23.5	25.0	224.4	32.6	0.5	4.5	0.7	10.0	90.0	15.7
2	Coker-2	MB-RKZ371-F02	5.3	45.0	28.7	25.0	221.8	35.3	0.5	1.0	0.7	10.0	90.0	15.2
3	Coker-3	MB-RKZ371-F03	5.0	45.0	22.7	25.0	224.2	40.2	0.5	2.9	0.8	10.0	90.0	17.0
4	Coker-4	MB-RKZ371-F04	5.0	45.0	9.1	25.0	218.6	56.5	0.5	4.5	0.7	10.0	90.0	15.8
E.	**Clean Fuel Project**													
1	DHDS-1	MBRHZ355-F01A	5.0	45.0	28.1	25.0	212.8	37.5	0.5	4.5	0.7	10.0	88.3	15.1
2	DHDS-1	MBRHZ355-F01B	5.0	45.0	14.2	25.0	225.0	49.7	0.5	4.3	0.8	10.0	90.0	28.2
3	DHDS-2	MBRHZ358-F01A	5.0	44.8	9.0	25.0	224.6	37.5	0.5	4.5	0.8	10.0	90.0	36.2
4	DHDS-2	MBRHZ358-F01B	5.0	44.1	13.7	25.0	222.6	37.5	0.5	4.5	0.7	10.0	90.0	34.0
5	DHDS-2	MBRHZ358-F02	5.0	45.0	9.1	25.0	219.4	36.4	0.5	4.5	0.8	10.0	90.0	21.7
6	Common Facilities	MBRHZ357-F01	5.0	45.0	32.9	25.0	213.8	37.5	0.7	4.4	1.7	10.0	88.9	15.1
7	LCOHC	MBRHZ354-F01	5.0	45.0	26.3	25.0	223.5	37.5	0.5	1.0	0.7	10.0	89.7	13.8
F.	**Aromatics**													
1	Platformer	MB-AYZ231-F02	5.6	45.0	33.4	25.0	223.8	37.5	0.6	4.5	0.9	10.0	86.4	15.0
2	Platformer	MB-AYZ231-F01/F03	5.0	45.0	18.7	25.0	224.7	40.4	0.5	4.5	0.9	10.0	89.4	14.0

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar
Continuous Online Stack Emission & Effluent Monitoring Results

1. Continuous Online Stack Emission Monitoring Results (1st Apr '2023 to 30th Sept '2023)

Sr. No.	Stack Attached to	Stack No.	SO2 (mg/Nm3)			NOx (mg/Nm3)			PM (mg/Nm3)			CO (mg/Nm3)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
3	HNUU	MB-AYZ221-F01/F02	5.2	45.0	18.9	25.0	221.3	36.6	0.5	4.5	0.7	10.0	88.6	15.0
G.	**Alkylation**													
1	SAR	MB-RFZ430-F41	5.0	45.0	11.0	25.0	224.9	38.2	0.5	4.5	0.8	10.0	90.0	15.2
II	**Stacks Involving Process Emission**													
A.	**FCC Complex**													
1	FCC-N	MB-RFZ412-S01	50.0	450.0	169.9	35.0	314.9	58.9	6.3	45.0	17.2	30.0	270.0	46.8
2	FCC-S	MB-RFZ412-S51	50.0	403.3	74.4	35.0	315.0	73.6	7.1	45.0	31.9	30.0	243.4	45.6
B.	**Sulphur Complex**													
1	SRU-1	MB-RHZ451-S01	30.0	270.0	244.6	25.0	223.3	83.6	NA			10.0	88.9	16.6
2	SRU-2	MB-RHZ452-S01	30.0	270.0	247.2	25.0	224.5	37.6	NA			10.0	89.7	15.0
3	SRU-3	MB-RHZ453-S01	30.0	270.0	252.6	25.0	50.0	37.5	NA			10.0	20.0	15.0
C.	**Alkylation**													
1	SAR	MB-RFZ430-S01	95	855	187	Not Applicable								

2. Continuous Online Effluent Monitoring Results (1st Apr '2023 to 30th Sept '2023):

Parameters	Units	MIN	MAX	AVG
Flow	Cum/hr	0.0	356.3	250.9
pH	-	6.6	8.2	7.4
TSS	ppm	2.0	18.0	4.0
BOD	ppm	2.0	12.0	4.9
COD	ppm	12.0	112.1	29.4

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: April '2023**

01-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	506.01	1063.8	99.64%
452	508.70	845.5	99.68%
453	499.35	888.6	99.63%
	1514.06	AVG >>	99.65%

02-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	504.50	1072.1	99.63%
452	509.88	853.7	99.68%
453	508.34	914.5	99.63%
	1522.73	AVG >>	99.65%

03-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	499.93	1101.9	99.61%
452	491.33	892.6	99.66%
453	502.41	985.4	99.59%
	1493.66	AVG >>	99.62%

04-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	548.02	961.1	99.66%
452		Unit under shutdown	
453	512.91	911.8	99.63%
	1060.93	AVG >>	98.65%

05-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	536.40	465.1	99.82%
452		Unit under shutdown	
453	540.00	663.9	99.74%
	1076.40	AVG >>	99.78%

06-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	489.54	579.9	99.78%
452		Unit under shutdown	
453	485.06	865.3	99.66%
	974.60	AVG >>	99.72%

07-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	520.32	759.8	99.72%
452		Unit under shutdown	
453	515.30	1180.7	99.56%
	1035.62	AVG >>	99.64%

08-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	580.67	524.2	99.80%
452		Unit under shutdown	
453	577.97	987.4	99.60%
	1158.64	AVG >>	99.70%

09-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	580.67	524.2	99.80%
452		Unit under shutdown	
453	577.97	987.4	99.60%
	1158.64	AVG >>	99.70%

10-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	530.25	524.5	99.80%
452		Unit under shutdown	
453	528.02	1100.0	99.64%
	1058.27	AVG >>	99.72%

11-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	453.98	524.0	99.80%
452		Unit under shutdown	
453	444.82	987.0	99.72%
	898.80	AVG >>	99.76%

12-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	456.76	523.5	99.80%
452		Unit under shutdown	
453	444.21	900.2	99.72%
	900.97	AVG >>	99.76%

13-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	453.76	524.0	99.80%
452		Unit under shutdown	
453	447.21	989.0	99.65%
	900.97	AVG >>	99.73%

14-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	470.97	523.7	99.80%
452		Unit under shutdown	
453	458.62	902.0	99.68%
	929.59	AVG >>	99.74%

15-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
452	410.65	657.1	99.75%
453		Unit under shutdown	
453	395.86	967.0	99.69%
	806.51	AVG >>	99.72%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: April '2023**

16-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	360.76	923.1	99.66%
452		Unit under shutdown	
453	343.62	982.0	99.63%
	704.38	AVG >>	99.65%

17-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	510.32	790.3	99.72%
452		Unit under shutdown	
453	518.95	995.0	99.65%
	1029.27	AVG >>	99.69%

18-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	434.65	933.8	99.65%
452		Unit under shutdown	
453	424.03	978.0	99.67%
	858.68	AVG >>	99.66%

19-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	387.32	808.3	99.69%
452		Unit under shutdown	
453	381.42	990.0	99.65%
	768.74	AVG >>	99.67%

20-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	357.98	961.2	99.63%
452		Unit under shutdown	
453	352.09	1023.0	99.66%
	710.07	AVG >>	99.64%

21-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	487.45	947.4	99.64%
452		Unit under shutdown	
453	483.60	976.0	99.69%
	971.05	AVG >>	99.67%

22-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	434.45	1062.7	99.60%
452		Unit under shutdown	
453	426.80	1003.0	99.65%
	861.25	AVG >>	99.62%

23-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	386.43	904.2	99.66%
452		Unit under shutdown	
453	373.57	988.0	99.69%
	760.00	AVG >>	99.68%

24-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	428.54	854.7	99.68%
452		Unit under shutdown	
453	425.41	955.0	99.66%
	853.95	AVG >>	99.67%

25-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	410.90	803.7	99.70%
452		Unit under shutdown	
453	403.03	954.5	99.62%
	813.93	AVG >>	99.66%

26-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	425.35	833.6	99.68%
452		Unit under shutdown	
453	430.35	709.0	99.72%
	855.70	AVG >>	99.70%

27-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	402.45	800.3	99.70%
452		Unit under shutdown	
453	412.69	714.8	99.71%
	815.14	AVG >>	99.70%

28-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	437.78	915.3	99.65%
452		Unit under shutdown	
453	430.49	899.8	99.64%
	868.27	AVG >>	99.65%

29-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	435.76	856.7	99.67%
452		Unit under shutdown	
453	428.79	948.7	99.62%
	864.55	AVG >>	99.65%

30-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	465.85	853.4	99.68%
452		Unit under shutdown	
453	456.84	1045.7	99.59%
	922.69	AVG >>	99.64%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: May '2023**

01-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	510.32	800	99.70%
452		Unit under shutdown	
453	530.32	936	99.69%
	1040.64	AVG >>	99.69%

02-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	498.76	875	99.67%
452		Unit under shutdown	
453	508.02	935	99.69%
	1006.78	AVG >>	99.68%

03-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	467.94	900	99.66%
452		Unit under shutdown	
453	468.37	936	99.69%
	936.31	AVG >>	99.67%

04-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	450.87	852	99.68%
452		Unit under shutdown	
453	480.21	935	99.70%
	931.08	AVG >>	99.69%

05-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	567.95	760	99.71%
452		Unit under shutdown	
453	452.48	850	99.68%
	1020.43	AVG >>	99.69%

06-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	490.54	669	99.75%
452		Unit under shutdown	
453	501.49	879	99.68%
	992.03	AVG >>	99.72%

07-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	450.94	685	99.74%
452		Unit under shutdown	
453	423.33	670	99.74%
	874.27	AVG >>	99.74%

08-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	498.87	702	99.74%
452		Unit under shutdown	
453	505.58	686	99.74%
	1004.45	AVG >>	99.74%

09-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	465.93	727	99.73%
452		Unit under shutdown	
453	445.13	1006	99.61%
	911.06	AVG >>	99.67%

10-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	456.04	791	99.70%
452		Unit under shutdown	
453	438.30	758	99.70%
	894.34	AVG >>	99.70%

11-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	405.46	757	99.71%
452		Unit under shutdown	
453	402.30	857	99.66%
	807.76	AVG >>	99.68%

12-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	456.95	799	99.70%
452		Unit under shutdown	
453	428.79	1010	99.60%
	885.74	AVG >>	99.65%

13-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	465.32	904	99.66%
452		Unit under shutdown	
453	429.02	800	99.70%
	894.34	AVG >>	99.68%

14-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	496.88	900	99.67%
452		Unit under shutdown	
453	507.57	926	99.66%
	1004.45	AVG >>	99.66%

15-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	359.12	289	99.89%
452	357.99	799	99.66%
453	345.07	279	99.87%
	1062.19	AVG >>	99.81%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs **MONTH: May '2023**

16-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	359.35	367	99.86%
452	363.73	422	99.83%
453	343.03	371	99.82%
	1066.11	AVG >>	99.84%

17-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	398.92	434	99.84%
452	377.51	387	99.85%
453	392.08	395	99.83%
	1168.52	AVG >>	99.84%

18-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	502.60	442	99.85%
452	384.47	380	99.85%
453	505.06	495	99.81%
	1392.13	AVG >>	99.83%

19-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	536.01	455	99.84%
452	339.03	420	99.82%
453	499.66	535	99.79%
	1374.71	AVG >>	99.82%

20-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	588.74	485	99.83%
452	169.28	487	99.83%
453	537.58	590	99.77%
	1295.60	AVG >>	99.81%

21-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	570.98	898	99.70%
452	Unit under shutdown		
453	560.43	601	99.77%
	1131.41	AVG >>	99.73%

22-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	553.12	602	99.78%
452	237.32	734	99.76%
453	537.19	651	99.72%
	1327.63	AVG >>	99.75%

23-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	428.23	498	99.81%
452	439.13	663	99.75%
453	434.28	560	99.76%
	1301.63	AVG >>	99.77%

24-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	416.32	513	99.81%
452	428.40	708	99.76%
453	418.89	551	99.76%
	1263.61	AVG >>	99.78%

25-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	399.98	508	99.80%
452	408.86	612	99.78%
453	394.96	558	99.75%
	1203.80	AVG >>	99.77%

26-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	391.40	507	99.80%
452	407.77	734	99.76%
453	402.46	560	99.75%
	1201.62	AVG >>	99.78%

27-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	391.73	495	99.81%
452	398.84	710	99.74%
453	386.07	394	99.82%
	1176.64	AVG >>	99.79%

28-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	400.70	491	99.81%
452	410.87	856	99.71%
453	401.20	289	99.87%
	1212.78	AVG >>	99.79%

29-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	398.08	520	99.80%
452	414.92	663	99.75%
453	411.93	318	99.86%
	1224.93	AVG >>	99.80%

30-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	402.48	553	99.79%
452	417.84	768	99.70%
453	415.00	374	99.84%
	1235.32	AVG >>	99.77%

31-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	398.24	585	99.78%
452	416.09	691	99.73%
453	413.24	418	99.82%
	1227.57	AVG >>	99.78%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs **MONTH: June '2023**

01-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	395.17	609	99.77%
452	403.54	623	99.76%
453	395.28	451	99.80%
	1193.99	AVG >>	99.77%

02-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	394.33	606	99.77%
452	401.33	562	99.78%
453	392.25	469	99.79%
	1187.91	AVG >>	99.78%

03-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	394.28	614	99.77%
452	402.20	515	99.80%
453	394.92	511	99.77%
	1191.41	AVG >>	99.78%

04-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	401.31	652	99.75%
452	426.06	491	99.81%
453	434.83	525	99.78%
	1262.20	AVG >>	99.78%

05-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	424.13	673	99.75%
452	439.66	473	99.82%
453	430.23	441	99.82%
	1294.03	AVG >>	99.80%

06-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	420.09	686	99.75%
452	437.29	480	99.82%
453	440.54	424	99.82%
	1297.91	AVG >>	99.80%

07-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	423.94	707	99.74%
452	446.27	500	99.81%
453	453.25	420	99.83%
	1323.45	AVG >>	99.80%

08-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	418.11	736	99.73%
452	421.94	494	99.81%
453	411.65	435	99.81%
	1251.70	AVG >>	99.79%

09-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	408.94	732	99.74%
452	393.72	452	99.82%
453	368.05	437	99.80%
	1170.71	AVG >>	99.79%

10-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	398.20	747	99.73%
452	389.29	447	99.82%
453	375.04	418	99.81%
	1162.53	AVG >>	99.79%

11-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	391.26	724	99.73%
452	396.47	412	99.83%
453	397.20	352	99.85%
	1184.94	AVG >>	99.81%

12-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	410.01	746	99.72%
452	431.74	432	99.83%
453	446.79	305	99.88%
	1288.54	AVG >>	99.81%

13-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	409.24	698	99.74%
452	413.88	385	99.85%
453	412.06	242	99.90%
	1235.18	AVG >>	99.83%

14-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	415.93	683	99.74%
452	396.90	362	99.85%
453	372.41	145	99.93%
	1185.24	AVG >>	99.84%

15-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	395.07	701	99.73%
452	393.62	393	99.84%
453	386.34	114	99.95%
	1175.03	AVG >>	99.84%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs **MONTH: June '2023**

16-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	393.34	697	99.74%
452	382.60	381	99.84%
453	360.83	76	99.96%
	1136.76	AVG >>	99.85%

17-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	401.98	769	99.71%
452	415.86	494	99.81%
453	424.11	209	99.91%
	1241.95	AVG >>	99.81%

18-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	421.25	953	99.65%
452	437.59	479	99.82%
453	449.67	210	99.91%
	1308.52	AVG >>	99.79%

19-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	430.43	744	99.73%
452	438.38	471	99.82%
453	445.77	205	99.92%
	1314.58	AVG >>	99.82%

20-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	467.23	760	99.74%
452	475.86	539	99.80%
453	483.27	248	99.90%
	1426.36	AVG >>	99.81%

21-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	471.52	762	99.74%
452	480.18	561	99.79%
453	467.65	281	99.89%
	1419.35	AVG >>	99.81%

22-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	472.15	786	99.73%
452	494.95	557	99.80%
453	457.17	281	99.89%
	1424.27	AVG >>	99.81%

23-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	486.42	810	99.72%
452	504.02	572	99.79%
453	475.20	276	99.89%
	1465.63	AVG >>	99.80%

24-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	497.76	873	99.70%
452	510.86	660	99.76%
453	491.25	340	99.86%
	1499.87	AVG >>	99.77%

25-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	511.56	886	99.70%
452	530.20	694	99.75%
453	495.99	340	99.86%
	1537.74	AVG >>	99.77%

26-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	531.14	959	99.68%
452	543.76	726	99.73%
453	514.26	559	99.77%
	1589.16	AVG >>	99.73%

27-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	568.75	973	99.67%
452	579.95	746	99.73%
453	559.34	483	99.81%
	1708.03	AVG >>	99.74%

28-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	518.59	953	99.66%
452	493.01	1439	99.44%
453	495.49	445	99.81%
	1507.10	AVG >>	99.64%

29-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	449.93	717	99.74%
452	462.07	1402	99.43%
453	439.49	309	99.87%
	1351.49	AVG >>	99.68%

30-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	452.31	813	99.71%
452	478.77	542	99.80%
453	436.55	310	99.87%
	1367.63	AVG >>	99.79%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: July '2023**

01-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	444.16	772.2	99.72%
452	475.76	541.0	99.80%
453	419.79	472.0	99.80%
	1339.70	AVG >>	99.77%

02-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	442.03	806.7	99.71%
452	479.07	561.0	99.79%
453	413.96	404.2	99.82%
	1335.07	AVG >>	99.78%

03-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	465.67	856.2	99.70%
452	492.06	586.4	99.79%
453	451.40	482.0	99.80%
	1409.13	AVG >>	99.76%

04-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	458.27	905.1	99.68%
452	487.24	593.7	99.78%
453	440.27	519.5	99.78%
	1385.78	AVG >>	99.74%

05-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	449.87	972.6	99.65%
452	481.08	620.9	99.77%
453	429.85	564.2	99.75%
	1360.81	AVG >>	99.72%

06-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	446.42	978.4	99.65%
452	483.61	591.2	99.78%
453	424.71	1095.0	99.53%
	1354.74	AVG >>	99.65%

07-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	474.48	1178.2	99.59%
452	498.91	594.5	99.78%
453	297.82	799.3	99.72%
	1271.21	AVG >>	99.30%

08-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	558.48	1172.7	99.62%
452	580.57	866.5	99.68%
453		Unit under shutdown	
	1139.05	AVG >>	99.65%

09-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	475.63	956.4	99.69%
452	506.82	685.5	99.74%
453		Unit under shutdown	
	982.45	AVG >>	99.71%

10-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	462.34	964.9	99.68%
452	460.71	653.0	99.76%
453		Unit under shutdown	
	923.05	AVG >>	99.72%

11-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	463.78	1010.6	99.67%
452	456.43	695.3	99.74%
453		Unit under shutdown	
	920.21	AVG >>	99.70%

12-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	405.36	921.7	99.70%
452	414.09	606.5	99.78%
453		Unit under shutdown	
	819.45	AVG >>	99.74%

13-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	503.26	1035.3	99.67%
452	518.47	709.2	99.75%
453		Unit under shutdown	
	1021.73	AVG >>	99.71%

14-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	463.98	933.9	99.70%
452	449.01	627.3	99.77%
453		Unit under shutdown	
	912.99	AVG >>	99.73%

15-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	426.78	835.4	99.73%
452	414.94	361.3	99.87%
453		Unit under shutdown	
	841.72	AVG >>	99.80%

ANNEXURE -4A

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs **MONTH: July '2023**

16-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	452.78	929.1	99.69%
452	439.06	376.1	99.86%
453		Unit under shutdown	
	891.84	AVG >>	99.77%

17-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	410.68	1243.2	99.57%
452	410.87	752.5	99.73%
453		Unit under shutdown	
	821.55	AVG >>	99.65%

18-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	410.26	1062.3	99.64%
452	412.58	820.5	99.71%
453		Unit under shutdown	
	822.84	AVG >>	99.67%

19-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	410.50	1107.2	99.63%
452	436.54	845.8	99.69%
453		Unit under shutdown	
	847.04	AVG >>	99.66%

20-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	418.57	970.7	99.67%
452	440.51	728.3	99.73%
453		Unit under shutdown	
	859.08	AVG >>	99.70%

21-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	355.70	857.0	99.71%
452	362.54	629.3	99.77%
453		Unit under shutdown	
	718.24	AVG >>	99.74%

22-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	460.99	779.4	99.74%
452	465.89	568.9	99.79%
453		Unit under shutdown	
	926.88	AVG >>	99.76%

23-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	385.46	838.2	99.71%
452	396.22	593.9	99.78%
453		Unit under shutdown	
	781.68	AVG >>	99.74%

24-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	429.64	809.6	99.72%
452	456.87	566.6	99.79%
453		Unit under shutdown	
	886.51	AVG >>	99.75%

25-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	447.34	658.1	99.78%
452	448.37	564.8	99.79%
453		Unit under shutdown	
	895.71	AVG >>	99.78%

26-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	460.02	655.5	99.78%
452	470.68	624.3	99.77%
453		Unit under shutdown	
	930.70	AVG >>	99.78%

27-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	420.22	762.0	99.75%
452	430.67	612.1	99.78%
453		Unit under shutdown	
	850.89	AVG >>	99.76%

28-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	437.03	734.4	99.76%
452	452.76	615.7	99.78%
453		Unit under shutdown	
	889.79	AVG >>	99.77%

29-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	420.21	897.6	99.70%
452	469.20	709.5	99.74%
453	325.43	601.1	99.77%
	1214.85	AVG >>	99.73%

30-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	388.68	657.6	99.75%
452	405.34	302.2	99.88%
453	366.28	604.6	99.76%
	1160.30	AVG >>	99.79%

31-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	378.37	620.8	99.76%
452	373.01	262.1	99.89%
453	359.12	602.9	99.76%
	1110.50	AVG >>	99.80%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: August '2023**

01-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	413.72	771.8	99.71%
452	465.82	329.6	99.87%
453	338.45	472.0	99.80%
	1217.99	AVG >>	99.79%

02-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	397.96	719.6	99.73%
452	423.63	403.0	99.84%
453	375.63	404.2	99.82%
	1197.22	AVG >>	99.79%

03-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	457.94	769.4	99.72%
452	503.69	433.4	99.84%
453	210.39	482.0	99.80%
	1172.02	AVG >>	99.78%

04-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	504.55	757.9	99.72%
452	542.47	382.1	99.86%
453		Unit under shutdown	
	1095.12	AVG >>	98.67%

05-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	453.54	856.2	99.70%
452	462.88	586.4	99.79%
453		Unit under shutdown	
	916.42	AVG >>	99.75%

06-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	412.93	905.1	99.68%
452	389.98	593.7	99.78%
453		Unit under shutdown	
	802.91	AVG >>	99.73%

07-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	467.21	620.9	99.77%
452	446.75	564.2	99.75%
453		Unit under shutdown	
	913.96	AVG >>	99.76%

08-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	372.78	594.5	99.78%
452	370.92	799.3	99.72%
453		Unit under shutdown	
	743.70	AVG >>	99.75%

09-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	570.80	561.0	99.79%
452	589.25	404.2	99.82%
453		Unit under shutdown	
	1160.05	AVG >>	99.81%

10-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	478.82	995.5	99.64%
452	556.00	617.5	99.78%
453	406.58	595.7	99.75%
	1441.40	AVG >>	99.73%

11-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	496.84	1012.6	99.64%
452	549.68	610.5	99.78%
453	451.47	571.4	99.77%
	1497.99	AVG >>	99.73%

12-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	509.52	1029.6	99.64%
452	524.50	618.9	99.77%
453	498.52	307.0	99.88%
	1532.54	AVG >>	99.77%

13-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	554.29	1241.3	99.58%
452	565.49	778.4	99.72%
453	542.58	561.0	99.79%
	1662.36	AVG >>	99.69%

14-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	556.74	806.7	99.71%
452	554.14	561.0	99.79%
453	563.29	404.2	99.82%
	1674.18	AVG >>	99.78%

15-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	561.64	1178.2	99.59%
452	564.19	594.5	99.78%
453	561.73	799.3	99.72%
	1687.56	AVG >>	99.69%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: August '2023**

16-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	548.27	929.1	99.69%
452	547.48	376.1	99.86%
453	548.05	620.3	99.75%
	1643.80	AVG >>	99.76%

17-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	532.98	1243.2	99.57%
452	525.71	752.5	99.73%
453	539.03	628.3	99.75%
	1597.73	AVG >>	99.68%

18-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	529.51	1062.3	99.64%
452	532.68	820.5	99.71%
453	525.01	634.3	99.75%
	1587.21	AVG >>	99.70%

19-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	541.94	1000.1	99.65%
452	548.34	896.3	99.67%
453	535.98	189.6	99.93%
	1626.26	AVG >>	99.75%

20-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	569.07	722.8	99.75%
452	583.14	878.7	99.68%
453	552.83	674.5	99.75%
	1705.03	AVG >>	99.73%

21-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	530.72	820.9	99.71%
452	524.85	978.5	99.63%
453	537.88	789.9	99.70%
	1593.45	AVG >>	99.68%

22-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	500.04	694.7	99.75%
452	491.20	693.0	99.73%
453	509.24	535.6	99.79%
	1500.47	AVG >>	99.76%

23-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	489.11	678.6	99.76%
452	472.46	672.4	99.74%
453	505.63	664.3	99.75%
	1467.20	AVG >>	99.75%

24-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	454.22	687.6	99.74%
452	469.43	643.9	99.75%
453	496.09	751.0	99.71%
	1419.74	AVG >>	99.73%

25-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	423.57	623.7	99.76%
452	470.56	581.4	99.77%
453	498.07	762.0	99.70%
	1392.20	AVG >>	99.75%

26-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	423.22	594.0	99.77%
452	463.53	557.5	99.78%
453	500.18	804.0	99.69%
	1386.94	AVG >>	99.74%

27-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	417.76	555.4	99.78%
452	432.65	518.2	99.78%
453	493.03	806.6	99.69%
	1343.44	AVG >>	99.75%

28-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	417.45	535.4	99.79%
452	401.92	511.2	99.78%
453	473.15	844.6	99.67%
	1292.52	AVG >>	99.75%

29-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	404.46	462.1	99.82%
452	400.69	468.5	99.80%
453	433.61	882.5	99.65%
	1238.76	AVG >>	99.75%

30-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	430.69	516.8	99.80%
452	437.18	523.9	99.79%
453	433.85	1003.3	99.60%
	1301.72	AVG >>	99.73%

31-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	455.84	548.1	99.79%
452	429.86	548.5	99.78%
453	429.09	1100.5	99.56%
	1314.78	AVG >>	99.71%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: September '2023**

01-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	445.04	513.3	99.80%
452	418.69	526.0	99.79%
453	425.04	673.9	99.73%
	1288.77	AVG >>	99.77%

02-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	451.13	513.2	99.80%
452	430.00	552.7	99.78%
453	427.31	386.6	99.84%
	1308.44	AVG >>	99.81%

03-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	458.00	540.2	99.79%
452	438.19	579.9	99.77%
453	428.95	593.7	99.75%
	1325.13	AVG >>	99.77%

04-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	487.38	581.5	99.78%
452	467.90	638.8	99.76%
453	459.31	799.3	99.68%
	1414.58	AVG >>	99.74%

05-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	523.70	611.4	99.78%
452	471.25	699.6	99.73%
453	496.78	594.5	99.63%
	1491.73	AVG >>	99.71%

06-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	549.61	681.1	99.76%
452	471.66	782.8	99.70%
453	527.05	610.5	99.57%
	1548.32	AVG >>	99.68%

07-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	547.89	699.4	99.75%
452	472.59	809.8	99.69%
453	535.11	799.3	99.54%
	1555.59	AVG >>	99.66%

08-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	545.94	704.5	99.75%
452	457.12	820.3	99.68%
453	541.24	752.5	99.51%
	1544.31	AVG >>	99.65%

09-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	526.22	622.2	99.78%
452	435.54	760.1	99.70%
453	526.61	820.5	99.49%
	1488.37	AVG >>	99.66%

10-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	477.42	542.7	99.80%
452	431.71	681.5	99.73%
453	485.35	896.3	99.48%
	1394.49	AVG >>	99.67%

11-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	458.08	496.9	99.81%
452	419.20	647.0	99.74%
453	460.57	820.9	99.47%
	1337.84	AVG >>	99.68%

12-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	496.45	489.1	99.82%
452	463.43	657.4	99.75%
453	381.52	878.7	99.39%
	1341.40	AVG >>	99.65%

13-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	473.59	440.7	99.83%
452	453.49	607.8	99.77%
453	455.91	722.8	99.56%
	1382.98	AVG >>	99.72%

14-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	504.57	518.3	99.80%
452	457.60	692.6	99.74%
453	494.25	678.6	99.63%
	1456.42	AVG >>	99.72%

15-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	504.54	467.7	99.82%
452	457.44	682.4	99.74%
453	516.48	511.5	99.81%
	1478.46	AVG >>	99.79%

Reliance Industries Limited, Refinery Division Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — **MONTH: September '2023**

16-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	518.80	360.6	99.86%
452	466.28	623.5	99.76%
453	524.40	516.2	99.81%
	1509.48	AVG >>	99.81%

17-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	525.81	400.5	99.85%
452	467.66	665.7	99.74%
453	523.50	570.8	99.78%
	1516.97	AVG >>	99.79%

18-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	524.71	455.2	99.83%
452	500.95	704.9	99.73%
453	529.32	623.8	99.76%
	1554.98	AVG >>	99.77%

19-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	519.45	387.8	99.85%
452	472.82	713.9	99.72%
453	532.12	610.0	99.77%
	1524.39	AVG >>	99.78%

20-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	525.49	393.8	99.85%
452	448.61	707.9	99.72%
453	529.34	603.5	99.77%
	1503.44	AVG >>	99.78%

21-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	529.66	476.7	99.82%
452	442.12	753.1	99.70%
453	529.56	663.7	99.75%
	1501.35	AVG >>	99.75%

22-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	490.86	457.1	99.82%
452	402.92	726.9	99.69%
453	499.55	629.9	99.75%
	1393.32	AVG >>	99.76%

23-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	422.52	394.2	99.84%
452	420.87	665.6	99.72%
453	429.84	559.7	99.77%
	1273.23	AVG >>	99.78%

24-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	401.53	277.6	99.89%
452	377.74	565.4	99.75%
453	406.69	435.3	99.81%
	1185.96	AVG >>	99.82%

25-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	401.37	254.8	99.90%
452	396.06	552.9	99.76%
453	392.11	412.5	99.82%
	1189.54	AVG >>	99.83%

26-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	419.02	264.7	99.90%
452	420.81	576.2	99.76%
453	408.96	443.3	99.81%
	1248.78	AVG >>	99.82%

27-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	497.41	393.7	99.86%
452	459.27	708.4	99.72%
453	476.71	598.3	99.76%
	1433.38	AVG >>	99.78%

28-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	507.13	394.8	99.86%
452	440.13	739.0	99.70%
453	487.30	662.6	99.75%
	1434.56	AVG >>	99.77%

29-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	509.20	392.3	99.86%
452	438.43	733.1	99.70%
453	501.77	697.1	99.74%
	1449.39	AVG >>	99.77%

30-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
451	491.42	358.8	99.87%
452	425.08	703.0	99.71%
453	481.31	692.2	99.73%
	1397.81	AVG >>	99.77%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: APRIL 2023

01-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	488.75	222.3	99.92%
Z452	493.24	189.0	99.92%
Z453	484.77	260.9	99.90%
Total	1466.75	AVG >>	99.91%

02-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	466.31	222.3	99.92%
Z452	464.88	189.0	99.92%
Z453	467.20	260.9	99.90%
Total	1398.39	AVG >>	99.92%

03-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	449.00	222.3	99.92%
Z452	449.03	189.0	99.92%
Z453	448.29	167.2	99.93%
Total	1346.33	AVG >>	99.92%

04-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	403.82	222.3	99.92%
Z452	408.25	173.4	99.93%
Z453	407.31	206.3	99.90%
Total	1219.38	AVG >>	99.92%

05-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	382.79	222.3	99.92%
Z452	385.12	125.0	99.93%
Z453	384.80	163.0	99.92%
Total	1152.72	AVG >>	99.92%

06-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	385.60	222.3	99.92%
Z452	386.42	125.0	99.93%
Z453	385.95	161.3	99.92%
Total	1157.97	AVG >>	99.92%

07-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	382.04	222.3	99.92%
Z452	385.32	125.0	99.93%
Z453	385.73	169.0	99.92%
Total	1153.10	AVG >>	99.92%

08-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	403.67	228.2	99.92%
Z452	406.66	153.6	99.93%
Z453	406.65	184.9	99.92%
Total	1216.97	AVG >>	99.92%

09-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	387.30	223.0	99.92%
Z452	390.13	194.0	99.92%
Z453	390.69	220.8	99.90%
Total	1168.12	AVG >>	99.91%

10-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	422.36	211.7	99.93%
Z452	425.41	185.2	99.93%
Z453	425.96	209.0	99.91%
Total	1273.74	AVG >>	99.92%

11-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	422.73	115.3	99.93%
Z452	425.99	195.1	99.93%
Z453	426.16	207.3	99.91%
Total	1274.88	AVG >>	99.92%

12-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	443.32	192.1	99.94%
Z452	445.04	195.0	99.93%
Z453	446.75	206.8	99.91%
Total	1335.11	AVG >>	99.93%

13-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	449.14	267.3	99.91%
Z452	450.79	191.4	99.93%
Z453	450.52	202.3	99.91%
Total	1350.45	AVG >>	99.92%

14-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	413.19	228.1	99.92%
Z452	416.40	191.4	99.93%
Z453	416.16	202.3	99.91%
Total	1245.75	AVG >>	99.92%

15-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	414.32	233.2	99.91%
Z452	418.09	191.4	99.93%
Z453	418.98	202.3	99.91%
Total	1251.40	AVG >>	99.91%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: APRIL 2023

16-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	426.55	231.3	99.91%
Z452	429.27	191.4	99.93%
Z453	429.34	202.3	99.91%
Total	1285.15	AVG >>	99.92%

17-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	415.73	217.1	99.92%
Z452	419.47	191.4	99.93%
Z453	419.81	202.3	99.91%
Total	1255.01	AVG >>	99.92%

18-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	426.89	191.5	99.93%
Z452	430.34	191.4	99.93%
Z453	431.39	202.3	99.91%
Total	1288.62	AVG >>	99.92%

19-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	468.49	237.9	99.91%
Z452	469.55	213.7	99.92%
Z453	469.17	221.9	99.90%
Total	1407.21	AVG >>	99.91%

20-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	434.33	255.0	99.90%
Z452	436.90	229.3	99.91%
Z453	435.65	209.9	99.90%
Total	1306.89	AVG >>	99.91%

21-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	395.08	217.2	99.92%
Z452	402.68	229.3	99.91%
Z453	396.01	178.7	99.91%
Total	1193.77	AVG >>	99.91%

22-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	393.77	257.1	99.90%
Z452	398.31	229.3	99.91%
Z453	397.96	221.6	99.90%
Total	1190.04	AVG >>	99.90%

23-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	410.75	233.2	99.91%
Z452	415.04	229.3	99.91%
Z453	415.00	203.6	99.91%
Total	1240.79	AVG >>	99.91%

24-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	422.16	268.7	99.90%
Z452	425.80	229.3	99.91%
Z453	426.82	198.3	99.91%
Total	1274.78	AVG >>	99.91%

25-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	440.57	268.7	99.90%
Z452	442.42	229.3	99.91%
Z453	441.72	215.2	99.90%
Total	1324.72	AVG >>	99.91%

26-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	391.11	241.0	99.91%
Z452	396.34	201.8	99.92%
Z453	394.44	145.9	99.93%
Total	1181.88	AVG >>	99.92%

27-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	373.12	168.0	99.93%
Z452	376.39	128.9	99.92%
Z453	375.06	142.6	99.93%
Total	1124.57	AVG >>	99.93%

28-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	400.36	243.1	99.91%
Z452	402.17	128.9	99.92%
Z453	402.02	142.6	99.93%
Total	1204.55	AVG >>	99.92%

29-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	427.29	167.8	99.93%
Z452	429.16	129.5	99.93%
Z453	428.71	143.2	99.93%
Total	1285.15	AVG >>	99.93%

30-Apr-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	466.66	269.5	99.90%
Z452	468.77	230.9	99.91%
Z453	468.67	205.7	99.91%
Total	1404.11	AVG >>	99.91%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: MAY 2023

01-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	468.06	269.5	99.90%
Z452	471.69	230.9	99.91%
Z453	469.29	225.7	99.90%
Total	1409.04	AVG >>	99.91%

02-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	477.89	254.0	99.91%
Z452	479.34	230.9	99.91%
Z453	477.61	201.0	99.91%
Total	1434.84	AVG >>	99.91%

03-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	521.48	285.2	99.90%
Z452	520.94	240.0	99.91%
Z453	521.93	250.0	99.90%
Total	1564.35	AVG >>	99.90%

04-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	562.38	275.9	99.90%
Z452	558.32	247.8	99.91%
Z453	559.17	268.1	99.91%
Total	1679.87	AVG >>	99.91%

05-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	534.15	267.4	99.90%
Z452	532.00	233.2	99.92%
Z453	530.86	250.4	99.90%
Total	1597.01	AVG >>	99.90%

06-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	460.55	179.7	99.93%
Z452	462.16	233.2	99.91%
Z453	460.55	250.4	99.91%
Total	1383.27	AVG >>	99.91%

07-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	434.42	179.7	99.93%
Z452	437.65	233.2	99.90%
Z453	437.05	228.8	99.90%
Total	1309.12	AVG >>	99.91%

08-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	423.28	179.7	99.93%
Z452	426.91	233.2	99.90%
Z453	426.86	210.7	99.90%
Total	1277.05	AVG >>	99.91%

09-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	428.28	179.7	99.93%
Z452	431.99	233.2	99.91%
Z453	432.34	150.4	99.93%
Total	1292.61	AVG >>	99.92%

10-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	413.15	184.2	99.93%
Z452	417.45	237.6	99.90%
Z453	417.50	202.4	99.90%
Total	1248.09	AVG >>	99.91%

11-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	393.58	181.2	99.93%
Z452	394.45	188.9	99.92%
Z453	394.33	155.0	99.92%
Total	1182.36	AVG >>	99.93%

12-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	402.81	181.7	99.93%
Z452	401.80	170.9	99.93%
Z453	402.48	178.9	99.91%
Total	1207.09	AVG >>	99.93%

13-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	415.48	183.6	99.93%
Z452	415.09	194.5	99.92%
Z453	416.22	199.2	99.90%
Total	1246.78	AVG >>	99.92%

14-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	432.34	183.6	99.93%
Z452	429.86	194.5	99.92%
Z453	430.62	199.2	99.91%
Total	1292.81	AVG >>	99.92%

15-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	459.84	145.5	99.93%
Z452	455.72	194.5	99.93%
Z453	457.01	204.9	99.91%
Total	1372.57	AVG >>	99.92%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs — MONTH: MAY 2023

16-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	483.43	145.5	99.93%
Z452	477.93	184.2	99.93%
Z453	478.74	235.8	99.89%
Total	1440.11	AVG >>	99.92%

17-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	486.86	102.5	99.92%
Z452	482.00	219.9	99.92%
Z453	483.74	237.9	99.91%
Total	1452.60	AVG >>	99.93%

18-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	507.82	228.5	99.92%
Z452	502.27	219.9	99.92%
Z453	497.79	237.9	99.90%
Total	1507.88	AVG >>	99.91%

19-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	504.60	228.5	99.92%
Z452	498.78	219.9	99.92%
Z453	494.68	237.9	99.90%
Total	1498.07	AVG >>	99.91%

20-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	516.46	228.5	99.92%
Z452	508.16	219.9	99.92%
Z453	502.75	237.9	99.90%
Total	1527.37	AVG >>	99.91%

21-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	519.16	228.5	99.92%
Z452	512.89	219.9	99.92%
Z453	508.97	237.9	99.90%
Total	1541.03	AVG >>	99.91%

22-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	503.39	228.5	99.92%
Z452	497.48	219.9	99.92%
Z453	491.65	237.9	99.90%
Total	1492.53	AVG >>	99.91%

23-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	458.13	228.5	99.92%
Z452	457.56	219.9	99.91%
Z453	453.70	237.9	99.89%
Total	1369.40	AVG >>	99.91%

24-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	479.78	228.5	99.92%
Z452	474.39	220.1	99.92%
Z453	469.16	237.9	99.89%
Total	1423.33	AVG >>	99.91%

25-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	462.62	228.5	99.92%
Z452	458.54	219.9	99.92%
Z453	456.26	237.9	99.89%
Total	1377.42	AVG >>	99.91%

26-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	459.33	228.5	99.92%
Z452	455.64	219.9	99.91%
Z453	454.34	237.9	99.90%
Total	1369.31	AVG >>	99.91%

27-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	443.06	228.5	99.92%
Z452	439.74	219.9	99.91%
Z453	439.66	237.9	99.90%
Total	1322.46	AVG >>	99.91%

28-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	448.10	228.5	99.92%
Z452	444.39	219.9	99.91%
Z453	445.02	237.9	99.90%
Total	1337.51	AVG >>	99.91%

29-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	472.86	228.5	99.92%
Z452	468.09	219.9	99.92%
Z453	469.27	237.9	99.90%
Total	1410.22	AVG >>	99.91%

30-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	491.81	228.5	99.92%
Z452	485.71	219.9	99.92%
Z453	486.16	157.6	99.93%
Total	1463.69	AVG >>	99.93%

31-May-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	503.71	228.5	99.92%
Z452	496.68	214.5	99.92%
Z453	497.14	225.4	99.91%
Total	1497.53	AVG >>	99.92%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs — MONTH: JUNE 2023

01-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	476.36	227.0	99.92%
Z452	470.78	246.9	99.91%
Z453	469.32	225.4	99.90%
Total	1416.46	AVG >>	99.91%

02-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	434.27	227.0	99.92%
Z452	430.91	246.9	99.90%
Z453	431.80	225.4	99.90%
Total	1296.98	AVG >>	99.91%

03-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	478.57	227.0	99.92%
Z452	473.78	246.9	99.91%
Z453	474.91	225.4	99.90%
Total	1427.26	AVG >>	99.91%

04-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	476.36	227.0	99.92%
Z452	473.22	246.9	99.91%
Z453	473.71	225.4	99.90%
Total	1423.29	AVG >>	99.91%

05-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	468.10	226.9	99.92%
Z452	462.02	221.4	99.92%
Z453	461.03	225.4	99.90%
Total	1391.14	AVG >>	99.91%

06-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	416.47	239.1	99.91%
Z452	414.69	176.6	99.93%
Z453	414.18	225.4	99.90%
Total	1245.35	AVG >>	99.91%

07-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	399.41	239.1	99.91%
Z452	399.25	200.1	99.92%
Z453	399.66	148.5	99.93%
Total	1198.32	AVG >>	99.92%

08-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	400.01	184.1	99.93%
Z452	400.05	155.1	99.92%
Z453	400.86	112.0	99.92%
Total	1200.92	AVG >>	99.92%

09-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	370.46	171.4	99.91%
Z452	370.22	155.1	99.93%
Z453	370.70	216.8	99.90%
Total	1111.38	AVG >>	99.91%

10-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	346.95	143.0	99.92%
Z452	348.99	155.1	99.93%
Z453	346.24	214.5	99.90%
Total	1042.17	AVG >>	99.92%

11-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	347.00	137.1	99.93%
Z452	348.87	155.1	99.93%
Z453	347.65	174.2	99.91%
Total	1043.52	AVG >>	99.92%

12-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	381.18	137.1	99.93%
Z452	381.74	155.1	99.93%
Z453	383.71	144.8	99.93%
Total	1146.62	AVG >>	99.93%

13-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	379.98	137.1	99.93%
Z452	380.10	155.1	99.93%
Z453	380.34	183.3	99.91%
Total	1140.42	AVG >>	99.92%

14-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	367.83	136.8	99.93%
Z452	367.61	155.1	99.93%
Z453	369.87	214.8	99.90%
Total	1105.30	AVG >>	99.92%

15-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	372.80	109.6	99.93%
Z452	373.43	155.1	99.93%
Z453	374.61	214.8	99.90%
Total	1120.83	AVG >>	99.92%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: JUNE 2023

16-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	384.53	16.2	99.93%
Z452	386.59	155.1	99.93%
Z453	389.55	214.8	99.90%
Total	1160.66	AVG >>	99.92%

17-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	394.17	35.0	99.93%
Z452	395.11	137.7	99.93%
Z453	396.63	214.8	99.90%
Total	1185.91	AVG >>	99.92%

18-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	411.01	137.1	99.93%
Z452	409.85	135.9	99.93%
Z453	409.47	214.8	99.90%
Total	1230.33	AVG >>	99.92%

19-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	467.80	205.5	99.92%
Z452	468.26	205.4	99.92%
Z453	470.81	214.8	99.91%
Total	1406.87	AVG >>	99.92%

20-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	514.57	249.2	99.91%
Z452	515.98	239.9	99.91%
Z453	515.93	255.7	99.90%
Total	1546.49	AVG >>	99.91%

21-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	499.45	257.0	99.91%
Z452	501.29	242.6	99.91%
Z453	502.29	252.0	99.90%
Total	1503.03	AVG >>	99.90%

22-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	494.72	257.0	99.91%
Z452	495.59	242.6	99.91%
Z453	497.46	252.0	99.90%
Total	1487.78	AVG >>	99.91%

23-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	473.75	257.0	99.91%
Z452	475.76	242.6	99.91%
Z453	477.26	217.7	99.91%
Total	1426.77	AVG >>	99.91%

24-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	463.83	257.0	99.91%
Z452	466.44	218.5	99.92%
Z453	469.46	191.4	99.92%
Total	1399.74	AVG >>	99.91%

25-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	466.57	246.3	99.91%
Z452	468.92	200.6	99.93%
Z453	472.11	199.0	99.91%
Total	1407.60	AVG >>	99.92%

26-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	460.34	222.1	99.92%
Z452	462.22	219.3	99.92%
Z453	465.34	199.0	99.91%
Total	1387.90	AVG >>	99.92%

27-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	446.82	258.6	99.90%
Z452	444.59	240.2	99.90%
Z453	447.15	202.2	99.91%
Total	1338.55	AVG >>	99.91%

28-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	436.28	258.6	99.90%
Z452	437.45	203.5	99.92%
Z453	438.29	194.5	99.91%
Total	1312.02	AVG >>	99.91%

29-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	423.67	258.6	99.90%
Z452	422.71	168.4	99.94%
Z453	423.86	194.5	99.91%
Total	1270.24	AVG >>	99.92%

30-Jun-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	391.07	197.0	99.93%
Z452	389.57	164.9	99.93%
Z453	397.61	194.5	99.91%
Total	1178.26	AVG >>	99.92%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: JULY 2023

01-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	388.35	255.6	99.90%
Z452	384.88	255.3	99.90%
Z453	389.41	255.1	99.91%
Total	1162.64	AVG >>	99.90%

02-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	390.42	255.4	99.90%
Z452	386.66	254.7	99.90%
Z453	390.08	255.2	99.90%
Total	1167.16	AVG >>	99.90%

03-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	374.40	255.0	99.90%
Z452	371.60	213.9	99.91%
Z453	376.67	254.8	99.90%
Total	1122.66	AVG >>	99.90%

04-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	370.98	255.0	99.90%
Z452	369.31	165.4	99.93%
Z453	373.65	255.2	99.90%
Total	1113.94	AVG >>	99.91%

05-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	368.66	255.3	99.90%
Z452	370.19	254.9	99.90%
Z453	371.78	255.1	99.90%
Total	1110.63	AVG >>	99.90%

06-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	425.51	254.8	99.91%
Z452	425.39	254.9	99.90%
Z453	431.28	254.8	99.9%
Total	1282.18	AVG >>	99.90%

07-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	422.16	254.7	99.91%
Z452	418.42	254.9	99.90%
Z453	420.92	255.3	99.90%
Total	1261.51	AVG >>	99.91%

08-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	413.32	254.9	99.90%
Z452	409.77	255.1	99.90%
Z453	413.81	255.4	99.90%
Total	1236.89	AVG >>	99.90%

09-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	394.69	255.2	99.90%
Z452	390.87	255.1	99.90%
Z453	395.67	255.2	99.90%
Total	1181.23	AVG >>	99.90%

10-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	375.79	255.1	99.90%
Z452	370.40	245.2	99.90%
Z453	375.26	253.7	99.90%
Total	1121.46	AVG >>	99.90%

11-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	437.36	255.3	99.91%
Z452	430.30	255.1	99.90%
Z453	436.77	255.2	99.90%
Total	1304.44	AVG >>	99.90%

12-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	459.16	255.1	99.91%
Z452	451.66	255.1	99.90%
Z453	457.96	255.3	99.9%
Total	1368.78	AVG >>	99.90%

13-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	512.72	255.1	99.91%
Z452	509.31	252.3	99.91%
Z453	522.05	255.2	99.90%
Total	1544.08	AVG >>	99.91%

14-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	453.17	255.3	99.90%
Z452	451.54	255.1	99.90%
Z453	450.94	255.4	99.89%
Total	1355.65	AVG >>	99.89%

15-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	417.63	254.7	99.90%
Z452	417.03	255.0	99.90%
Z453	417.12	255.6	99.9%
Total	1251.78	AVG >>	99.89%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: JULY 2023

;

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	400.23	255.2	99.90%
Z452	399.72	254.7	99.89%
Z453	397.73	254.8	99.88%
Total	1197.67	AVG >>	99.89%

17-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	407.62	254.9	99.90%
Z452	406.84	255.4	99.90%
Z453	410.20	255.1	99.9%
Total	1224.66	AVG >>	99.89%

18-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	470.13	254.7	99.91%
Z452	468.27	255.3	99.90%
Z453	473.49	255.3	99.9%
Total	1411.89	AVG >>	99.90%

19-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	495.39	251.2	99.91%
Z452	493.30	255.3	99.91%
Z453	496.60	255.2	99.90%
Total	1485.28	AVG >>	99.90%

20-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	485.81	253.7	99.91%
Z452	485.29	254.8	99.91%
Z453	487.35	255.4	99.90%
Total	1458.45	AVG >>	99.90%

21-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	491.24	224.1	99.92%
Z452	490.17	255.0	99.91%
Z453	493.35	255.0	99.90%
Total	1474.76	AVG >>	99.91%

22-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	495.77	212.2	99.93%
Z452	493.71	255.2	99.91%
Z453	497.15	254.7	99.90%
Total	1486.62	AVG >>	99.91%

23-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	438.26	177.0	99.94%
Z452	438.15	254.6	99.90%
Z453	436.01	254.8	99.9%
Total	1312.42	AVG >>	99.91%

24-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	471.54	91.4	99.98%
Z452	472.16	255.1	99.90%
Z453	475.60	255.1	99.90%
Total	1419.30	AVG >>	99.93%

25-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	514.62	155.9	99.95%
Z452	587.75	255.0	99.91%
Z453	611.83	254.9	99.91%
Total	1714.20	AVG >>	99.93%

26-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	503.10	254.9	99.90%
Z452	524.46	255.3	99.91%
Z453	520.72	255.2	99.91%
Total	1548.28	AVG >>	99.91%

27-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	523.25	199.0	99.93%
Z452	522.16	255.3	99.91%
Z453	523.27	254.9	99.91%
Total	1568.68	AVG >>	99.91%

28-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	543.08	255.1	99.91%
Z452	540.71	254.6	99.91%
Z453	543.05	255.4	99.91%
Total	1626.84	AVG >>	99.91%

29-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	534.17	254.7	99.91%
Z452	530.04	254.9	99.91%
Z453	529.58	255.1	99.91%
Total	1593.79	AVG >>	99.91%

30-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	498.80	255.0	99.91%
Z452	494.44	253.0	99.90%
Z453	495.61	254.7	99.90%
Total	1488.84	AVG >>	99.90%

31-Jul-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	494.86	254.7	99.91%
Z452	490.62	254.5	99.90%
Z453	491.30	255.3	99.90%
Total	1476.78	AVG >>	99.90%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs MONTH: AUGUST 2023

01-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	526.10	254.9	99.90%
Z452	525.24	255.0	99.91%
Z453	522.12	255.7	99.90%
Total	1573.46	AVG >>	99.90%

02-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	575.57	255.3	99.91%
Z452	580.67	255.6	99.90%
Z453	577.29	255.1	99.91%
Total	1733.54	AVG >>	99.91%

03-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	570.98	254.8	99.92%
Z452	577.71	255.0	99.90%
Z453	570.46	254.9	99.89%
Total	1719.15	AVG >>	99.90%

04-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	593.14	254.8	99.91%
Z452	596.56	255.1	99.90%
Z453	595.30	254.8	99.89%
Total	1785.00	AVG >>	99.90%

05-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	573.34	376.5	99.88%
Z452	580.19	204.7	99.93%
Z453	571.11	254.8	99.90%
Total	1724.65	AVG >>	99.90%

06-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	578.35	368.4	99.87%
Z452	583.86	197.7	99.93%
Z453	577.67	611.0	99.88%
Total	1739.88	AVG >>	99.89%

07-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	629.68	368.4	99.87%
Z452	626.89	197.7	99.93%
Z453	630.94	655.6	99.87%
Total	1887.51	AVG >>	99.89%

08-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	647.50	441.8	99.86%
Z452	625.00	481.3	99.87%
Z453	650.51	614.9	99.88%
Total	1923.02	AVG >>	99.87%

09-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	597.41	719.2	99.74%
Z452	607.60	677.4	99.87%
Z453	630.23	618.6	99.87%
Total	1835.25	AVG >>	99.82%

10-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	572.22	590.6	99.78%
Z452	580.63	666.0	99.87%
Z453	593.44	612.2	99.87%
Total	1746.30	AVG >>	99.84%

11-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	571.46	350.0	99.88%
Z452	587.64	654.0	99.87%
Z453	602.79	620.4	99.87%
Total	1761.90	AVG >>	99.87%

12-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	574.11	-11.7	99.91%
Z452	586.81	661.7	99.87%
Z453	607.86	633.3	99.87%
Total	1768.79	AVG >>	99.88%

13-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	600.35	-131.3	99.91%
Z452	614.30	670.7	99.86%
Z453	668.53	325.2	99.88%
Total	1883.18	AVG >>	99.89%

14-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	600.87	128.9	99.92%
Z452	627.00	484.9	99.88%
Z453	670.56	165.3	99.92%
Total	1898.43	AVG >>	99.91%

15-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	607.36	255.6	99.89%
Z452	638.47	184.4	99.92%
Z453	667.99	243.9	99.91%
Total	1913.82	AVG >>	99.91%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO_2 EMISSION FROM SRUs — MONTH: AUGUST 2023

16-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	594.44	255.6	99.87%
Z452	615.89	184.4	99.92%
Z453	641.41	196.9	99.93%
Total	1851.73	AVG >>	99.90%

17-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	541.47	452.5	99.87%
Z452	553.52	184.4	99.93%
Z453	539.24	196.9	99.92%
Total	1634.24	AVG >>	99.91%

18-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	528.17	446.0	99.88%
Z452	531.96	184.4	99.93%
Z453	527.74	196.9	99.92%
Total	1587.87	AVG >>	99.91%

19-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	547.68	440.6	99.89%
Z452	550.29	184.4	99.94%
Z453	546.53	196.9	99.92%
Total	1644.50	AVG >>	99.92%

20-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	564.98	412.2	99.89%
Z452	568.35	184.4	99.93%
Z453	562.64	196.9	99.92%
Total	1695.97	AVG >>	99.91%

21-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	562.05	414.3	99.89%
Z452	565.34	149.1	99.95%
Z453	558.68	196.9	99.92%
Total	1686.07	AVG >>	99.92%

22-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	539.48	434.4	99.88%
Z452	543.52	125.8	99.90%
Z453	536.98	196.9	99.92%
Total	1619.98	AVG >>	99.90%

23-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	567.84	433.6	99.88%
Z452	573.92	138.6	99.91%
Z453	569.27	196.9	99.92%
Total	1711.03	AVG >>	99.90%

24-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	564.92	421.2	99.88%
Z452	587.08	245.6	99.91%
Z453	597.17	214.7	99.92%
Total	1749.17	AVG >>	99.91%

25-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	598.60	312.6	99.90%
Z452	600.55	269.8	99.90%
Z453	600.18	312.3	99.88%
Total	1799.34	AVG >>	99.89%

26-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	596.70	293.0	99.90%
Z452	596.48	238.3	99.92%
Z453	599.34	280.6	99.89%
Total	1792.52	AVG >>	99.90%

27-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	597.98	307.0	99.90%
Z452	601.60	257.2	99.91%
Z453	596.99	293.6	99.88%
Total	1796.58	AVG >>	99.90%

28-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	566.45	313.5	99.89%
Z452	571.49	227.0	99.92%
Z453	562.08	282.5	99.89%
Total	1700.02	AVG >>	99.90%

29-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	529.99	291.3	99.90%
Z452	537.67	235.7	99.91%
Z453	527.41	272.1	99.89%
Total	1595.07	AVG >>	99.90%

30-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	490.20	259.9	99.91%
Z452	499.75	235.5	99.91%
Z453	490.30	251.2	99.89%
Total	1480.25	AVG >>	99.90%

31-Aug-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	490.64	298.4	99.90%
Z452	499.51	235.5	99.91%
Z453	492.80	256.3	99.89%
Total	1482.96	AVG >>	99.90%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs — MONTH: September 2023

01-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	498.08	301.6	99.90%
Z452	506.48	235.5	99.91%
Z453	501.51	255.3	99.89%
Total	1506.06	AVG >>	99.90%

02-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	531.66	314.3	99.90%
Z452	538.76	235.5	99.92%
Z453	535.50	261.9	99.89%
Total	1605.92	AVG >>	99.90%

03-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	570.10	321.9	99.90%
Z452	575.35	239.7	99.92%
Z453	570.87	270.8	99.89%
Total	1716.33	AVG >>	99.90%

04-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	585.44	337.1	99.89%
Z452	587.09	256.8	99.91%
Z453	586.97	296.9	99.88%
Total	1759.49	AVG >>	99.90%

05-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	578.07	360.0	99.89%
Z452	582.59	256.3	99.91%
Z453	576.73	288.3	99.89%
Total	1737.40	AVG >>	99.90%

06-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	524.60	329.3	99.89%
Z452	530.96	237.1	99.91%
Z453	522.14	279.7	99.89%
Total	1577.70	AVG >>	99.90%

07-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	427.52	295.7	99.89%
Z452	436.55	237.1	99.91%
Z453	429.76	279.7	99.89%
Total	1293.83	AVG >>	99.90%

08-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	417.88	309.8	99.89%
Z452	425.29	225.4	99.91%
Z453	420.23	135.6	99.92%
Total	1263.40	AVG >>	99.90%

09-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	429.46	304.6	99.89%
Z452	434.02	201.7	99.92%
Z453	428.83	204.2	99.90%
Total	1292.31	AVG >>	99.91%

10-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	461.56	336.7	99.89%
Z452	464.59	248.5	99.90%
Z453	460.27	263.1	99.89%
Total	1386.42	AVG >>	99.90%

11-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	531.57	385.5	99.89%
Z452	530.98	298.0	99.89%
Z453	524.50	281.2	99.90%
Total	1587.05	AVG >>	99.90%

12-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	505.21	383.5	99.89%
Z452	505.11	278.1	99.90%
Z453	496.57	272.8	99.90%
Total	1506.89	AVG >>	99.90%

13-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	468.05	355.5	99.89%
Z452	466.91	244.5	99.91%
Z453	463.76	258.6	99.89%
Total	1398.72	AVG >>	99.89%

14-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	463.29	357.3	99.89%
Z452	462.17	244.5	99.91%
Z453	460.51	260.6	99.91%
Total	1385.97	AVG >>	99.90%

15-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	504.65	379.3	99.90%
Z452	500.28	244.5	99.91%
Z453	498.38	282.0	99.91%
Total	1503.31	AVG >>	99.91%

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ) Jamnagar

COMPUTERISED MONITORING OF SO2 EMISSION FROM SRUs MONTH: September 2023

16-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	468.49	379.3	99.88%
Z452	466.82	244.5	99.91%
Z453	463.56	282.0	99.89%
Total	1398.87	AVG >>	99.89%

17-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	396.13	319.4	99.89%
Z452	397.57	244.5	99.90%
Z453	394.98	232.5	99.89%
Total	1188.67	AVG >>	99.89%

18-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	378.67	277.7	99.90%
Z452	378.84	235.4	99.90%
Z453	378.63	183.6	99.91%
Total	1136.14	AVG >>	99.90%

19-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	375.16	277.7	99.90%
Z452	375.49	152.0	99.92%
Z453	375.62	183.6	99.91%
Total	1126.27	AVG >>	99.91%

20-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	405.55	277.7	99.90%
Z452	403.80	210.3	99.92%
Z453	402.46	191.7	99.91%
Total	1211.80	AVG >>	99.91%

21-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	418.09	277.7	99.90%
Z452	417.37	215.7	99.92%
Z453	416.31	224.5	99.90%
Total	1251.78	AVG >>	99.91%

22-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	403.69	255.8	99.91%
Z452	SHUTDOWN		
Z453	406.26	182.0	99.92%
Total	1072.34	AVG >>	99.91%

23-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	474.58	283.5	99.91%
Z452	SHUTDOWN		
Z453	476.66	182.0	99.92%
Total	951.73	AVG >>	99.91%

24-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	500.53	289.8	99.91%
Z452	SHUTDOWN		
Z453	499.19	194.8	99.92%
Total	1000.68	AVG >>	99.91%

25-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	507.93	277.0	99.91%
Z452	SHUTDOWN		
Z453	505.80	186.3	99.92%
Total	1014.73	AVG >>	99.92%

26-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	417.38	277.0	99.91%
Z452	SHUTDOWN		
Z453	414.89	182.0	99.92%
Total	833.25	AVG >>	99.91%

27-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	405.92	277.0	99.91%
Z452	SHUTDOWN		
Z453	405.09	182.0	99.92%
Total	812.00	AVG >>	99.91%

28-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	410.66	254.5	99.91%
Z452	SHUTDOWN		
Z453	410.45	182.0	99.92%
Total	822.06	AVG >>	99.91%

29-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	416.24	249.8	99.91%
Z452	SHUTDOWN		
Z453	415.30	138.7	99.93%
Total	832.52	AVG >>	99.92%

30-Sep-23

Unit	CBA production MT/day	SO2 emission ppm	Sulphur Recovery Efficiency
Z451	392.15	249.3	99.91%
Z452	SHUTDOWN		
Z453	392.61	157.0	99.93%
Total	785.75	AVG >>	99.92%

Reliance Industries Limited (Refinery Division), Jamnagar
AMBIENT AIR QUALITY MONITORING
(1st April '2023 to 30th September'2023)

LOCATION	MINIMUM VALUE	MAXIMUM VALUE	AVERAGE VALUE
POLLUTANT - PM 2.5 (µg/m3)			
RRTF Control Building	19	38	27
SSO STP	19	29	24
Liquid Rail Gantry	21	37	27
ETP	20	35	27
SOLID Parking Area	21	33	27
Central LAB	19	30	23
POLLUTANT - PM 10 (µg/m3)			
RRTF Control Building	40	53	47
SSO STP	39	50	44
Liquid Rail Gantry	40	53	47
ETP	40	54	48
SOLID Parking Area	40	53	47
Central LAB	39	49	43
POLLUTANT - SO2 (µg/m3)			
RRTF Control Building	11	27	18
SSO STP	9	33	17
Liquid Rail Gantry	11	36	19
ETP	11	39	18
SOLID Parking Area	11	39	19
Central LAB	9	27	16
POLLUTANT – NOx (µg/m3)			
RRTF Control Building	13	31	23
SSO STP	11	35	22
Liquid Rail Gantry	16	41	25
ETP	13	41	23
SOLID Parking Area	18	43	26
Central LAB	12	30	21
POLLUTANT – CO (mg/m3)			
RRTF Control Building	1.07	2.08	1.46
SSO STP	1.00	1.97	1.40
Liquid Rail Gantry	1.07	2.05	1.41
ETP	1.00	2.00	1.42
SOLID Parking Area	1.09	2.11	1.41
Central LAB	1.04	2.06	1.39
POLLUTANT - NH3 (µg/m3)			
RRTF Control Building	11	25	16
SSO STP	11	25	16
Liquid Rail Gantry	10	27	16
ETP	11	28	17
SOLID Parking Area	10	28	17
Central LAB	10	24	14
POLLUTANT - Benzene (µg/m3)			
RRTF Control Building	1.01	1.21	1.11
SSO STP	1.01	1.22	1.09
Liquid Rail Gantry	1.04	1.18	1.10
ETP	1.01	1.22	1.09
SOLID Parking Area	1.03	1.26	1.11
Central LAB	1.00	1.18	1.11

Note : 1. Grab sampling for CO ;

Annexure 5B

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ), Jamnagar

AMBIENT AIR QUALITY MONITORING RESULTS

(1st April '2023 to 30th September'2023)

LOCATION	MINIMUM VALUE	MAXIMUM VALUE	AVERAGE VALUE
POLLUTANT - PM 2.5 (µg/m3)			
Sulphur Load Office	20	35	27
ZETP	19	32	26
Sulphur Recovery Unit	21	35	28
RTF	19	29	23
POLLUTANT – PM 10 (µg/m3)			
Sulphur Load Office	41	53	48
ZETP	40	53	47
Sulphur Recovery Unit	40	56	48
RTF	40	49	44
POLLUTANT - SO_2 (µg/m3)			
Sulphur Load Office	9	33	20
ZETP	11	36	19
Sulphur Recovery Unit	11	39	20
RTF	9	30	16
POLLUTANT – NO2 (µg/m3)			
Sulphur Load Office	15	35	25
ZETP	15	38	25
Sulphur Recovery Unit	16	40	25
RTF	10	32	21
POLLUTANT - NH3 (µg/m3)			
Sulphur Load Office	11	29	17
ZETP	11	28	17
Sulphur Recovery Unit	10	28	17
RTF	11	26	16
POLLUTANT – CO (mg/m3)			
Sulphur Load Office	1.03	1.98	1.37
ZETP	1.00	2.15	1.42
Sulphur Recovery Unit	1.02	2.15	1.45
RTF	1.02	2.14	1.39
POLLUTANT – Benzene (µg/m3)			
Sulphur Load Office	1.01	1.25	1.13
ZETP	1.01	1.27	1.10
Sulphur Recovery Unit	1.01	1.24	1.11
RTF	1.00	1.27	1.11

Note : 1. Grab sampling for CO ;

Reliance Industries Limited. Jamnagar (C2 Complex)

AMBIENT AIR QUALITY MONITORING RESULTS

(1st April '2023 to 30th September'2023)

LOCATION	MINIMUM VALUE	MAXIMUM VALUE	AVERAGE VALUE
POLLUTANT – PM2.5 (µg/m3)			
LC5	20.0	35.0	26.9
LC7	20.0	49.0	28.0
Nr ETP	20.0	33.0	27.3
FWP	19.0	35.0	27.7
POLLUTANT – PM10 (µg/m3)			
LC5	40.0	54.0	47.2
LC7	40.0	56.0	47.5
Nr ETP	40.0	53.0	47.5
FWP	40.0	54.0	48.0
POLLUTANT - SO2 (µg/m3)			
LC5	9.0	36.0	17.8
LC7	9.0	33.0	18.6
Nr ETP	11.0	33.0	19.0
FWP	9.0	30.0	19.2
POLLUTANT – NO2 (µg/m3)			
LC5	15.0	39.0	23.4
LC7	14.0	37.0	24.1
Nr ETP	13.0	35.0	24.8
FWP	15.0	36.0	24.8
POLLUTANT - NH3 (µg/m3)			
LC5	11.0	28.0	15.8
LC7	10.0	27.0	16.0
Nr ETP	10.0	27.0	16.8
FWP	11.0	27.0	16.3
POLLUTANT - CO (mg/m3)			
LC5	1.00	2.05	1.41
LC7	1.03	2.09	1.42
Nr ETP	1.00	2.09	1.43
FWP	1.05	2.18	1.44
POLLUTANT – Benzene (µg/m3)			
LC5	1.0	1.3	1.1
LC7	1.0	1.3	1.1
Nr ETP	1.1	1.2	1.1
FWP	1.0	1.2	1.1

Note : 1. Grab sampling for CO ;

ANNEXURE – 6

Reliance Industries Limited (Refinery Division, Jamnagar)

Mobile Van Monitoring

(1st April '2023 to 30th September'2023)

LOCATION	MINIMUM VALUE	MAXIMUM VALUE	AVERAGE VALUE
POLLUTANT – PM2.5 (µg/m3)			
MTF	6.15	45.53	25.00
Township	1.14	39.75	18.29
Gagva	14.19	38.08	21.86
Padana	13.51	67.26	31.73
POLLUTANT – PM10 (µg/m3)			
MTF	7.95	64.62	33.65
Township	2.62	53.07	25.79
Gagva	17.90	54.36	29.40
Padana	18.26	86.26	42.36
POLLUTANT - SO2 (µg/m3)			
MTF	2.56	14.28	5.49
Township	2.03	41.56	7.29
Gagva	2.20	14.31	6.26
Padana	3.59	10.07	5.59
POLLUTANT – NO2 (µg/m3)			
MTF	6.36	15.88	11.70
Township	3.62	35.36	10.85
Gagva	1.35	30.77	9.79
Padana	2.87	17.76	9.39
POLLUTANT - NH3 (µg/m3)			
MTF	17.11	37.24	25.13
Township	5.05	35.01	20.86
Gagva	12.27	45.06	23.30
Padana	5.05	36.20	20.55
POLLUTANT - CO (mg/m3)			
MTF	0.08	1.96	1.12
Township	0.01	1.73	0.83
Gagva	0.19	2.27	1.05
Padana	0.18	1.98	1.01
POLLUTANT – Ozone (µg/m3)			
MTF	4.10	48.75	14.43
Township	2.53	53.28	21.29
Gagva	6.93	42.87	19.89
Padana	7.16	55.37	23.41

ANNEXURE – 7A

Reliance Industries Limited (Refinery Division, Jamnagar)

Treated Water Quality - Refinery ETP

(1st April '2023 to 30th September'2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	pH	--	7.4	7.7	7.6
2	Suspended Solids	mg/l	10	14	12
3	Biochemical Oxygen Demand	mg/l	5.0	8.0	6.5
4	Chemical Oxygen Demand	mg/l	51.0	54.0	53
5	Oil & Grease	mg/l	1.8	2.4	2.25
6	Phenols (as C6H5OH)	mg/l	0.1	0.1	0.11
7	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
8	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
9	Ammonical Nitrogen	mg/l	9.5	9.8	9.63
10	TKN	mg/l	12.0	12.5	12.3
11	Phosphorous (as P)	mg/l	1.0	1.2	1.1
12	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
13	Chromium (Total)	mg/l	N.D.	N.D.	N.D.
14	Lead as Pb	mg/l	N.D.	N.D.	N.D.
15	Mercury as Hg	mg/l	N.D.	N.D.	N.D.
16	Zinc as Zn	mg/l	N.D.	N.D.	N.D.
17	Copper as Cu	mg/l	N.D.	N.D.	N.D.
18	Nickel as Ni	mg/l	N.D.	N.D.	N.D.
19	Vanadium as V	mg/l	N.D.	N.D.	N.D.
20	Benzene	mg/l	N.D.	N.D.	N.D.
21	Benzo (a) - pyrene	mg/l	N.D.	N.D.	N.D.
22	Fluoride (as F)	mg/l	N.D.	N.D.	N.D.

Note: N.D. - Not Detectable

Remarks : 1) Minimum Detectable Limit : Sulphides=0.1mg/l, Cyanide=0.01mg/l, Metals(Cr,Pb,Hg,Zn,Ni,Cu,V)=0.01mg/l, Benzene=0.01mg/l, Benzo(a)Pyrene=0.01mg/l,

2) N.D. : Not Detectable

ANNEXURE – 7A

Reliance Industries Limited (Refinery Division, Jamnagar)

Brine Discharge Water Quality through Seawater Outfall

(1st April '2023 to 30th September'2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	Temperature	^{O}C	29	31	29.5
2	pH	--	8.0	8.1	8.1
3	Total Dissolved Solids	mg/l	54528	55482	55097
4	Total Suspended Solids	mg/l	10.0	14.0	11.3
5	Biochemical Oxygen Demand	mg/l	5.0	8.0	6.8
6	Chemical Oxygen Demand*	mg/l	*----	*----	*----
7	Oil & Grease	mg/l	N.D.	N.D.	N.D.
8	Phenols (as C6H5OH)	mg/l	N.D.	N.D.	N.D.
9	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
10	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
11	Ammonical Nitrogen	mg/l	10.0	10.6	10.3
12	TKN	mg/l	12.4	13.0	12.7
13	Phosphorous (as P)	mg/l	1.0	1.2	1.1
14	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
15	Chromium (Total)	mg/l	N.D.	N.D.	N.D.
16	Lead as Pb	mg/l	N.D.	N.D.	N.D.
17	Mercury as Hg	mg/l	N.D.	N.D.	N.D.
18	Zinc as Zn	mg/l	N.D.	N.D.	N.D.
19	Copper as Cu	mg/l	N.D.	N.D.	N.D.
20	Nickel as Ni	mg/l	N.D.	N.D.	N.D.
21	Vanadium as V	mg/l	N.D.	N.D.	N.D.
22	Benzene	mg/l	N.D.	N.D.	N.D.
23	Benzo (a) - pyrene	mg/l	N.D.	N.D.	N.D.

---* As per APHA,AWWA Standard methods for the Examination of Water & Waste Water, the COD analysis may not be representative due to positive interference of high chloride content in the sample, hence it is not analysed.

Remarks : 1) Minimum Detectable Limit : Sulphides=0.1mg/l, Cyanide=0.01mg/l, Metals(Cr,Pb,Hg,Zn,Ni,Cu,V)=0.01mg/l, Benzene=0.01mg/l, Benzo(a)Pyrene=0.01mg/l,

2) N.D. : Not Detectable

ANNEXURE – 7B

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ, Jamnagar)

Treated Water Quality - ETP Outlet

(1st April '2023 to 30th September'2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	pH	--	7.4	7.7	7.6
2	Total Suspended Solids	mg/l	10.0	14.0	12.0
3	Biochemical Oxygen Demand	mg/l	5.0	6.0	5.5
4	Chemical Oxygen Demand	mg/l	38.0	46.0	42.0
5	Oil & Grease	mg/l	1.2	1.6	1.4
6	Phenols (as C6H5OH)	mg/l	0.10	0.12	0.11
7	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
8	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
9	Ammonical Nitrogen	mg/l	9.4	9.6	9.5
10	TKN	mg/l	10.8	11.4	11.0
11	Phosphorous (as P)	mg/l	1.0	1.2	1.1
12	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
13	Chromium(Total)	mg/l	N.D.	N.D.	N.D.
14	Lead as Pb	mg/l	N.D.	N.D.	N.D.
15	Mercury as Hg	mg/l	N.D.	N.D.	N.D.
16	Zinc as Zn	mg/l	N.D.	N.D.	N.D.
17	Copper as Cu	mg/l	N.D.	N.D.	N.D.
18	Nickel as Ni	mg/l	N.D.	N.D.	N.D.
19	Vanadium as V	mg/l	N.D.	N.D.	N.D.
20	Benzene	mg/l	N.D.	N.D.	N.D.
21	Benzo (a) - pyrene	mg/l	N.D.	N.D.	N.D.

Remarks : 1) Minimum Detectable Limit : Sulphides=0.1mg/l, Cyanide=0.01mg/l, Metals(Cr,Pb,Hg,Zn,Ni,Cu,V)=0.01mg/l, Benzene=0.01mg/l, Benzo(a)Pyrene=0.01mg/l,

2) N.D. : Not Detectable

ANNEXURE – 7B

Reliance Industries Limited (Unit of Reliance Jamnagar SEZ, Jamnagar)
Brine Discharge Through Seawater Outfall Water Quality
(1st April '2023 to 30th September'2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	Temperature	^{0}C	28	36	29.5
2	pH	--	8.0	8.2	8.1
3	Total Dissolved Solids	mg/l	58974	59643	59249
4	Total Suspended Solids	mg/l	10.0	14.0	11.7
5	Biochemical Oxygen Demand	mg/l	5.0	8.0	6.5
6	Chemical Oxygen Demand	mg/l	*-----	*-----	*-----
7	Oil & Grease	mg/l	N.D.	N.D.	N.D.
8	Phenols (as C6H5OH)	mg/l	N.D.	N.D.	N.D.
9	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
10	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
11	Ammonical Nitrogen	mg/l	10.0	10.8	10.5
12	TKN	mg/l	12.2	13.2	12.7
13	Phosphorous (as P)	mg/l	1.0	1.2	1.1
14	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
15	Chromium (Total)	mg/l	N.D.	N.D.	N.D.
16	Lead as Pb	mg/l	N.D.	N.D.	N.D.
17	Mercury as Hg	mg/l	N.D.	N.D.	N.D.
18	Zinc as Zn	mg/l	N.D.	N.D.	N.D.
19	Copper as Cu	mg/l	N.D.	N.D.	N.D.
20	Nickel as Ni	mg/l	N.D.	N.D.	N.D.
21	Vanadium as V	mg/l	N.D.	N.D.	N.D.
22	Benzene	mg/l	N.D.	N.D.	N.D.
23	Benzo (a) - pyrene	mg/l	N.D.	N.D.	N.D.

---* As per APHA, AWWA Standard methods for the Examination of Water & Waste Water, the COD analysis may not be representative due to positive interference of high chloride content in the sample, hence it is not analysed.

Remarks: 1) Minimum Detectable Limit: Sulphides=0.1mg/l, Cyanide=0.01mg/l,
Metals (Cr, Pb, Hg, Zn, Ni, Cu,8 V)=0.01mg/l, Benzene=0.01mg/l, Benzo(a)Pyrene=0.01mg/l,
2) N.D.: Not Detectable

ANNEXURE – 7C

Reliance Industries Limited, Jamnagar
Treated Water Quality - C2-COMPLEX ETP
(1st April '2023 to 30th September'2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	pH	--	7.5	7.7	7.6
2	Total Suspended Solids	mg/l	10	14	12.3
3	Biochemical Oxygen Demand	mg/l	5.0	8.0	6.0
4	Chemical Oxygen Demand	mg/l	40.0	44.0	42.7
5	Phenols (as C6H5OH)	mg/l	0.1	0.1	0.1
6	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
7	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
8	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
9	Chromium (Total)	mg/l	N.D.	N.D.	N.D.
10	Fluoride (as F)	mg/l	0.6	0.8	0.7

Remarks : 1) Minimum Detectable Limit : Sulphides=0.1mg/l, Cyanide=0.01mg/l, Metals (Cr, F) =0.01mg/l
2) N.D. : Not Detectable

ANNEXURE – 8A

Reliance Industries Limited. (Refinery Division) Jamnagar.

NOISE QUALITY MONITORING RESULTS

(1st April '2023 to 30th September '2023)

Sr. No.	Area /Location	Noise Level (dBA) Day-time		Noise Level (dBA) Night-time	
		Minimum Value	Maximum Value	Minimum Value	Maximum Value
1	Back side of Laboratory	48	55	40	50
2	Storm water pond no. 2 near fire station	45	57	43	51
3	Near ETP	58	67	52	58
4	Near Main Gate	52	65	44	49
5	Near Back Boundary Wall (PP Gate)	52	60	48	53
6	In front of Sulphur loading plant	56	65	50	55
7	Near flare stack	49	62	53	58

ANNEXURE – 8B

Reliance Industries Ltd. (Unit of Reliance Jamnagar SEZ). Jamnagar.

NOISE QUALITY MONITORING RESULTS

(1st April '2023 to 30th September '2023)

Sr. No.	Area /Location	Noise Level (dBA) Day-time		Noise Level (dBA) Night-time	
		Minimum Value	Maximum Value	Minimum Value	Maximum Value
1	Near Cargo Gate 1	52	59	39	48
2	Near MMC, Avenue L	49	56	42	49
3	Near PP Ware House, Avenue L	59	66	51	56
4	Near Pond 7	60	67	42	48
5	Near Cargo Gate -2	52	65	46	51
6	Near Sulfur Gate	58	66	48	53
7	Near Clean Fuel Project Nr. Avenue F	57	67	51	57

ANNEXURE – 8C

Reliance Industries Ltd. Jamnagar. (J3 Complex).

NOISE QUALITY MONITORING RESULTS

(1st April '2023 to 30th September '2023)

Sr. No.	Area /Location	Noise Level (dBA) Day-time		Noise Level (dBA) Night-time	
		Minimum Value	Maximum Value	Minimum Value	Maximum Value
	Px4 Complex				
1	SO	55	59	50	53
2	B/H CT	55	56	53	55
3	Scarp Bin	53	55	46	50
4	Crystalliser	54	58	53	55
	C2 Complex				
1	LC 5	52	54	45	48
2	LC 7	47	49	40	45
3	ETP	56	60	49	52
4	FWPH	53	58	45	47

ANNEXURE – 9

Reliance Industries Ltd. Jamnagar
Marine Water Quality Analysis Report
(1st April '2023 to 30th September '2023)

Sample location : Samples near Diffuser (Sea water)

Parameters	UOM	Sample Above Diffuser			Sample 100 m Upstream of Diffuser			Sample 100 m Downstream of Diffuser		
		Min	Max	AVG	Min	Max	AVG	Min	Max	AVG
pH	-	7.9	8.2	8.1	8.0	8.2	8.1	8.1	8.2	8.2
Conductivity	µS/cm	56224	56760	56411	56329	56650	56481	56394	56890	56713
Total Dissolved Solids (TDS)	mg/l	36056	36385	36266	36108	36525	36316	36150	36799	36472
Total Suspended Solids (TSS)	mg/l	38.0	48.0	41.7	35.0	44.0	40.3	31.0	42.0	38.0
Chemical Oxygen Demand (COD)	mg/l	10.0	14.0	12.0	11.0	15.0	12.7	11.0	12.0	11.3
Biochemical Oxygen Demand (BOD)	mg/l	<5	<5	<5	8.0	8.0	<5	7.0	7.0	<5
O & G	mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Sulphide	mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Phenol	mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Remarks : 1) N.D. : Not Detectable

2) Minimum Detectable Limit : Oil & Grease=0.01mg/l, Sulphides=0.1mg/l, Phenol=0.1mg/l.

*APHA - AWWA Standard methods are followed for the Examination of Water & Waste Water, the COD analysis is a representative value due to positive interference of high chloride content in the sample.

ANNEXURE – 10

Reliance Industries Ltd. (Refinery Division), Jamnagar
Treated Water Quality – MTF ETP
(1st April '2023 to 30th September '2023)

Sr.No.	PARAMETERS	Unit	Min Value	Max Value	Average Value
1	pH	--	7.8	8.0	7.9
2	Total Suspended Solids	mg/l	10.0	14.0	12.0
3	Biochemical Oxygen Demand	mg/l	6.0	8.0	7.0
4	Chemical Oxygen Demand*	mg/l	*----	*----	*----
5	Oil & Grease	mg/l	2.0	2.5	2.3
6	Phenols (as C6H5OH)	mg/l	0.1	0.1	0.1
7	Sulphide (as S)	mg/l	N.D.	N.D.	N.D.
8	Cyanide (as CN)	mg/l	N.D.	N.D.	N.D.
9	Ammonical Nitrogen	mg/l	9.6	10.5	10.1
10	TKN	mg/l	12.0	12.5	12.3
11	Phosphorous (as P)	mg/l	1.0	1.2	1.1
12	Chromium (hexavalent)	mg/l	N.D.	N.D.	N.D.
13	Chromium (Total)	mg/l	N.D.	N.D.	N.D.
14	Lead as Pb	mg/l	N.D.	N.D.	N.D.
15	Mercury as Hg	mg/l	N.D.	N.D.	N.D.
16	Zinc as Zn	mg/l	N.D.	N.D.	N.D.
17	Copper as Cu	mg/l	N.D.	N.D.	N.D.
18	Nickel as Ni	mg/l	N.D.	N.D.	N.D.
19	Vanadium as V	mg/l	N.D.	N.D.	N.D.
20	Benzene	mg/l	N.D.	N.D.	N.D.
21	Benzo (a) - pyrene	mg/l	N.D.	N.D.	N.D.

Note: N.D. - Not Detectable

---* As per APHA,AWWA Standard methods for the Examination of Water & Waste Water, the COD analysis may not be representative due to positive interference of high chloride content in the sample, hence it is not analysed.

A Nelerwala Group Company

Office & Laboratory : W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.
Phone : 72080976 92 / 93 / 94 / 85 • Website : www.netel-india.com • E-mail : ems@netel-india.com
Registered office : Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020.

GIN : U74999MH2003PLC142228

GROUND WATER SAMPLE-WELLS
RELIANCE INDUSTRIES LTD., JAMNAGAR

Ref. : NIL/EMS/RIL/JAM/06/2023
Date of Sampling : 21/06/2023

Sr. No	Parameters↓ Locations→	Unit	RPL-4 Sapar	RPL-6 Sapar	RPL-7 Navagaon	RPL-9 Navagaon	RPL-10 Nani-Khavdi	RPL-11 Nani-Khavdi	RPL-15 Padana	RPL-16 Padana	RPL-18 Nawania	RPL-22 Jogivad	RPL-24 Gagwa	RPL-01 Pipli	Kanaka	Sataka	Meghapara	Meghpar	Kanachikari	Derachikari
1	pH	-	7.5	7.6	7.4	7.5	7.6	7.5	7.6	7.4	7.6	7.7	7.6	7.5	7.7	7.6	7.7	7.6	7.5	7.6
2	Colour	Co.Pt.Scale	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
3	TDS	mg/l	870	785	845	832	865	892	905	1094	940	785	793	740	995	978	895	810	860	868
4	Total ammonia - N	mg/l	4.5	4.6	4.8	4.5	4.6	4.7	4.8	4.6	4.7	4.5	4.6	4.5	5.2	4.8	4.5	4.6	5.2	4.8
5	COD	mg/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
6	Chloride-Cl	mg/l	236	188	248	240	250	274	260	330	285	215	214	220	290	292	225	230	235	250
7	Total Hardness (as Caco3)	mg/l	116	120	122	116	120	125	122	130	120	123	118	110	132	128	120	128	122	124
8	Sulphate (as SO4)	mg/l	60	55	58	55	60	58	60	55	58	55	60	55	58	55	58	55	60	58
9	Nitrate-NO3	mg/l	10	12	12	10	14	14	12	14	10	12	14	12	12	14	12	10	12	14
10	Fluoride-F	mg/l	0.8	0.6	0.7	0.8	0.7	0.8	0.7	0.6	0.6	0.7	0.9	0.7	0.6	0.8	0.7	0.6	0.8	0.7
11	Iron-Fe	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	Sulphide (as H2S)	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	Calcium-Ca	mg/l	172	154	170	165	176	174	182	235	208	155	160	148	235	220	160	180	178	185
14	Magnesium-Mg	mg/l	145	138	140	145	147	157	160	204	162	132	125	120	190	155	126	142	146	150
15	Copper-Cu	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16	Nickel - Ni	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17	Lead - Pb	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18	Cyanide - CN	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
19	Oil & Grease	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
20	Phenol	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

for NETEL (INDIA) LTD

BIRBAHADUR SINGH
(Project Incharge)

NEELIMA DALVI
(Environment Chemist)

Netel (India) Limited

ANNEXURE – 12

Expenditure for Environmental Protection Measures
(1st April '2023 to 30th September '2023)

Sr. No.	Reliance Jamnagar Manufacturing Complex	*Expenditure Amount (Rs.)
1	DTA Refinery	6,61,76,031
2	SEZ Refinery	7,50,81,951
3	C2 Complex	2,20,76,081
	Total	Rs. 16,33,34,063

***Expenditure Amount for Environment Management System which includes expenses incurred for operation cost of ETP; APC equipment; waste management etc**

Reliance Industries Ltd. Jamnagar

Sample Format: Monitoring of Leak Detection & Repair Procedure (LDAR conducted during the last Quarter)

LDAR Summary sheet RJM / IMS / HSEF / ENV / 3009 (C) Rev.: 00

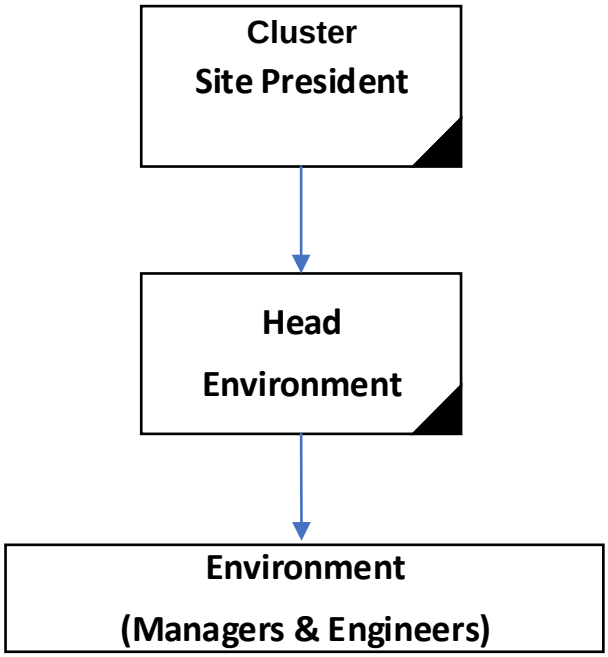
Complex:-	**SEZ FCCU**										
Period (Year, Quarter):-	**2023-24 - Fourth Quarter (July -23-Sept-23)**										
Equipment Type	**Last monitoring period (Year, Quarter)**	**No Of Sources identified**	**Added In MOC**	**Total**	**Inaccessible & Insulated Sources**	**No. of sources checked**	**No of leaks**	**% Leak**	**No. of leaks attended**	**No. of leaks to be attended during shutdown**	**Remarks**
Valves	(Apr-Jun-23)	2771	8	2779	0	2779	0	0	NA	NA	
Flanges	(Apr-Jun-23)	2603	14	2617	0	2617	0	0	NA	NA	
Pump Seals	(Apr-Jun-23)	94	1	95	0	95	0	0	NA	NA	
PRVs	(Apr-Jun-23)	646	0	646	0	646	0	0	NA	NA	
Heat Exchangers	(Apr-Jun-23)	1046	0	1046	0	1046	0	0	NA	NA	
Process drains	(Apr-Jun-23)	105	0	105	0	105	0	0	NA	NA	
Components those are diffcult to monitor	(Apr-Jun-23)	0	0	0	0	0	0	0	NA	NA	
Compressor Seal	(Apr-Jun-23)	4	0	4	0	4	0	0	NA	NA	
Other	(Apr-Jun-23)	866	0	866	0	866	0	0	NA	NA	
Total		**8135**	**23**	**8158**	**0**	**8158**	**0**	**0**	**NA**	**NA**	

*All inaccessible sources for LDAR completed

ANNEXURE – 14

Reliance Industries Ltd. Jamnagar

Organogram of Environment Department



Reliance
Industries Limited
Growth is Life

Environment Policy

Protection of environment is of prime concern and a core business value at Reliance Industries Limited (RIL). With a leading role in providing competitive goods and services in the materials and energy value chains and infrastructure, RIL is conscious of its responsibility towards the needs of the communities in which it operates by creating, maintaining and ensuring a safe and clean environment for sustainable development.

In particular, RIL is committed to:

- Comply with all applicable laws, regulations and conditions granted in environmental and forest clearances, as well as take any additional measures considered necessary to go beyond compliance.
- Implement an environmental compliance management process to capture deviations and report the violations observed by the authorities to the HSE committee of Directors.
- Follow an international environmental management system, governance process with clearly defined responsibilities in order to achieve continual improvement and communicate environmental performance to the stakeholders.
- Design new facilities and conduct operations with preventive approach and industry best practices to avoid adverse impacts to the human health and the environment.
- Conserve natural resources by their responsible and efficient use in all our operations.
- Take appropriate measures to prevent environmental incidences and maximize recycle to reduce wastes, discharges and emissions.
- Promote tree plantation, green surrounding and protection of biodiversity at our locations to be in harmony with nature.
- Ensure appropriate training and awareness on environmental systems, procedures, best practices and on shared responsibility towards environmental protection among employees, contractors, suppliers and customers.
- Communicate this policy to the stakeholders.

Mukesh D. Ambani

Reliance
Industries Limited
Growth is Life

Health, Safety and Environment Policy

"Safety of person overrides all the production targets" is the Health, Safety and Environment policy of Reliance.

Reliance believes that all injuries, occupational illnesses as well as safety and environmental incidents are preventable.

Reliance shall strive to be a leader in the field of management of Health, Safety and Environment.

Reliance is committed to:

- Conduct all its activities in such a manner as to avoid harm to employees, contractors and the community.
- Promote occupational health of its employees and contractors.
- Improve continuously its environmental practices and performance.
- Minimize adverse impact on environment and risks to the community that arise due to its operations and during transport and distribution of its goods.
- Utilize energy resources in a responsible and efficient manner so as to reduce emissions and generation of effluent and waste products.
- Comply with all statutory requirements concerning Health, Safety and Environment.
- Create a culture of learning and practicing Health, Safety and Environment systems, procedures and practices among all its employees and contractors.

Reliance strives to achieve these objectives by:

- Designing plants with proper and adequate safeguards for ensuring process safety.
- Carrying out process and operational changes through well-defined systems and strict adherence to the same.
- Following effective use of safe working procedures and practices for operation, maintenance, inspection and emergency situations.
- Reviewing regularly and updating of systems and procedures.
- Training and validating employees and contractors on health and safety practices.
- Conducting all work in a safe manner and to ensure integrity of the assets, by providing personal protective equipment, tools and tackles.
- Auditing periodically internal and external work procedures and practices.
- Investigating all incidents relating to Health, Safety and Environment, including minor ones and near misses, followed by implementation of corrective measures.
- Communicating learning from investigations of incidents, internal and external, to all employees and taking steps to prevent such occurrences in its works.
- Identifying and evaluating health risks related to operations and carrying out pre-employment and periodic medical check-up of its employees.
  Implementing programs and appropriate protective measures to control such risks.
- Continuously monitoring work environment and plant effluents–gas, liquid and solid and taking measures to achieve better environmental performance.
- Interacting with local communities on operations, likely hazards and emergency response systems.
- Keeping abreast of latest international codes, standards and practices and adopting the same where applicable.

Mukesh D. Ambani
2017