Protocols for Online Continuous Effluent & Emission Monitoring Systems

The Industries are requested to fill-up the information and submit First Installation Report of CEMS installed and being installed at various discharge points of Effluent and Emission to CPCB. The details have to be submitted at cems.cpcb@nic.in and a hard copy to be forwarded to CPCB, Incharge IT Division, 5th Floor, Parivesh Bhawan, East Arjun Nagar, Delhi -110032 within 15 days from the date of publishing of these Protocols after finalization on CPCB website for implementation. Submission of the required information is COMPULSORY for each category of Industry operating OCEMS.

CPCB Divisional Heads, Regional Directors, are requested to communicate to all the Industries (being dealt by them) about these Protocols and Technology Providers helping industries in data submission are also requested to forward this information to each industry. The Industry is responsible to follow these Protocols and submit information accordingly.

CTO: Consent to Operate

Procedure of Data Submission

- *Sections; A, B, C & D shall be submitted by the industry once only*
- *Any changes in industrial process, APCDs, CEMS (even replacement with same technology) shall invite revised submission*
- *Information related to all Sections should be submitted online through email at cems.cpcb@nic.in. (Later a software will be developed for the submission of this information online)*
- *PART E for PM Selection and Installation and PART F for Operation and Calibration of PM, are required to be submitted individually separately for all sources where parameter PM - CEMS (Emission) are installed.*
- *PART G –Protocol details to be submitted separately for each discharge point where SOx/NOx/HF/NH3 parameters are Installed*
- *PART H – IT Protocol is to be submitted even if a single parameter is being monitored in the Industry. Submission of the information at the time of Installation of OCEMS*
- *PART E and PART F shall be resubmitted online on 1st January, 1st April, 1st July and 1st October every year.*

A. General Information

SN	Particulars	Information	
1	Name of the Industry	As per CTO	As on date name
		KRKA Pulp & Paper	KRKA Pulp & Paper
	Whether at any point of time its name has changed, If yes what was the old name	Yes, name changed in year 2010. Document copy attached	Earlier known as CBKA Pulp & Paper
2	Address:		
	If earlier it has changed, provide earlier details also		
3	Type (Category) Sector: Like: Iron & Steel, Pharma etc.		
4.	Whether falling in "17 Category" or "GPI in Ganga" as per CPCB criteria i.e. GPI in Ganga		
5	Details of Contact Person Responsible for plant and CEMS and shall be receiving SMS alerts and will also be responsible for replies of alerts.	1. Name: Designation: Email: Phone No. 2. Name: Designation: Email: phone no.	
6	Whether any specialist, environmental Engineer or scientists is employed; if yes provide his mobile number and AADHAR card no.	Env. Specialist: Mobile No.: AADHAAR No.:	

	Whether the industry has single CTO or multiple CTO in the same premise. Please provide details of CTO with dates.	
	Whether premise is being used by one Industry or more than one industries with different CTOs.	

	Raw materials used	Names	Qty per ton of product		
	Main Products being manufactured in the unit as consented	Names	Qty		
	By products if any	Name	Qty Per ton of product		

B. Information on Source Emission & Effluent discharge Locations

No. of Source emission points	No. of Effluent Discharge Points
i.e. 03 (Three Stacks)	i.e. 01 (ETP) Outlet

Please Provide separate information sheet for each source Emission point & Effluent discharge point

B1. Information on Source Emission Locations

SN	Particulars	Information		
1	Description of Main Industrial Process, based on which the Industrial production is being done as on date If there are other important processes, please provide name of each process.	i.e. VSK for Cement Production		
2	Size or Production Capacity	Installed		Allowed as per CTO
	i.e. 200 TPD Cement plant sanctioned initially on 01.01.2000	*i.e.180*		*200*
	i.e. expanded to 500 from 01.01.2010	*i.e. 500*		*600*
3	Average Running Load (TPD) for last three months *if reporting in January 2018*	*Dec 2017*	*Nov 2017*	*Oct 2017*
4	Number of Emission points of process stacks for which Emission Limits are Prescribed	*i.e. 02 nos. One*		
		VSK 1		*VSK 02:*
		---		*---*
	Physical Conditions at Measurement Locations	*Discharge point 1 /Stack1*	*Sicharge Pt 2/Stack2*	*Discharge Pt 3 /Stack3 ……..*
	Measurement Location (Stack /Duct)			
	Shape at Measurement Location (Circular or Rectangular)			
	Height of the CEM from Ground Level (m)			
	Distance of CEM downstream from last disturbance (m)			
	Distance of CEM upstream from last disturbance (m)			
	Inside Dimension at CEM location			
	Wall thickness at CEM location			
	Outside Dimension at CEM location			

	Material of Construction of Stack or Duct			
	Height of the manual Isokinetic sampling port (m)			
	Distance between CEM and Isokinetic sampling port (m)			
	Elevation from sea level (m)			
	If the Gaseous CEM system is not installed at 8D / 2D; whether stratification study conducted. *If Yes, Report submitted or Not. (Attach report)*			
	Ambient conditions at CEMS Locations			
	Temperature (ºC) inside the monitoring stations			
	Relative Humidity (%) inside the monitoring room			
	Availability of UPS Yes / No If Yes than capacity in Hours			
6	Air Pollution Control Devices (APCDs) of individual emission points. Fill up all APCD details by increasing the rows in the table here. For bigger plants having very high number of points may also expand this form and provide the information with serial numbers.	*Stack at VSK 1* *ESP* ---4 ---	*Stack at VSK 2* *Multi-cyclone* ---5 ---	 --- ---6 ---
8	Shelter or Analyser Location i.e. On the stack traverse point or at Ground level. Or at 15 feets away from port hole location etc.			
9	Whether there is provision of ladder or lift or monkey ladder to reach the location of installation i.e. Lift with AC Container at the height of 140 meters at Stack			

B2.: Information on Water Use and Effluent Locations:

Sl. No.	Details	As per CTO	Actual as on date		Remarks
	Source of Fresh Water in KLD	Ground Water	Surface Water	Municipal Supply	Others (specify)

	If industry is using recycled water from any source provide details with Qty. of each source in KLD	Source name	Qty In KLD		Source name		Qty In KLD
	Details of Individual Processes from which effluent is being generated along with effluent quantities.	Name	Qty Per ton of product				Process type (Continuous/ batch/other)
	Whether industry is receiving or processing effluent of any other unit/industry.						
	Area of factory premises in square meters	As per CTO	If additional land is procured details thereof;		If any land is acquired for irrigation of effluent discharge		Others(specify)
	Effluent handling practices (Tick)	Through CETP	Through ETP	Through farmers nearby (If yes provide Agreement copies incl.	ZLD	Direct discharge after treatment	Others (specify)

				area in sq. mt.)				
	Whether effluent is treated onsite through ETP or sent to CETP after primary Treatment	onsite	CETP after primary treatment If Yes (name the CETP)		If ZLD	CETP directly (If Yes name the CETP)	Others (Specify)	
	If through CETP, provide details of Primary treatment						Remarks	
	If Effluent is sent to CETP provide the current agreement document of acceptance of CETP and provide details such as date of agreement, CETP details, accepted effluent qty etc.						Remarks	
	Whether CETP is connected with CPCB for data submission If Yes Provide details							
	Number of outlets with their	Numbers	Location		Latitude and longitude		Dischar	Flowmeters installed

	details are to be provided							ge Qty		Y/N if Yes the details of flowmeter like make , model, calibrated on date(last), technology, sr no. supplier name and telephone number etc.
		01.								
		02.								
	Consented discharge practices	Surface water (River/Drain etc.)		Irrigation	Marine Outfall	CETP	To any other industry having ETP	Others(Specify)		
	Discharge Practice adopted by the industry.	Surface water (River/Drain etc.)		Irrigation	Marine Outfall	CETP	To any other industry having ETP	Others(Specify)		
	Provide reason of deviation if any.									
	Consented effluent parameters	pH	BOD	COD	TSS	flow	..	..		Others
	Prescribed Standards									

	Unit of reporting	----	mg/l	mg/l	mg/l	KLD	..	…		
	Parameters Monitored through OCEMS (Tick)	pH	BOD	COD	TSS	flow	..	..		Others
	Whether unit is ZLD	Y/N								
	Location of the camera earlier consented	At designated outlet Y/N available at URL http://abc.com……								

	If camera installed then whether PTZ cameras Installed or not? If Yes Yes/No	Number of cameras					Nos.
		Sr. No.	Locations	Latitude	longitude	Name of the Tech. Providers portal to which cameras are Connected	Remarks

	Specifications of PTZ	Make	Model	Serial Number	Zooming capacity	
					….X	
	Cameras connected with DVR or not?					

	DVR related information	Locati	Make &	Whether	Whether plugin free	Recording capacity with	Size of Hard Disk in TB

		on of installation	Model& Sr. No.	connectivity of DVR is provided to CPCB for remote access or not?	access is provided or not?	all cameras in motion detection mode (Minimum two months) – Y/N	
	Farmers agreement or consent obtained from irrigation department						
	Designed treatment capacity of ETP in KLD	As per CTO		Actual capacity designed		Average treated effluent	
	Number of stages of ETP (Primary/Secondary/Tertiary)						
	Schematic ETP details	Yes/No					

	(Provide flow diagram)				
	Monthly Discharge of treated effluent in KLD	As per CTO	Actual quantity in this quarter		
	Final discharge body (on land/surface/river)	As per CTO	Actual as on date		
	Name of Final Discharge Body	1.	2.		
	Number of Outlets	As per CTO	Actual as on date		
	Whether OCEMS is installed in all outlets	Yes	No		

C. Expected Flue Gas Stream Constituents at Sample Probe Locations (whichever parameter is applicable)
Fill the data as available.

SN	Constituents	Expected Concentration at Stack1	Observed Concentration Range at Stack1		Expected Concentration at Stack 2	Observed Concentration at Stack 2		Expected Concentration at Stack3	Observed Concentration at Stack3	
		Range	Min	Max	Range	Min	Max	Range	Min	max
1	SO2 in ppm									
2	NOX in ppm									
3	CO in ppm									
4	H2S in ppm									
5	NH3 in ppm									
6	HCl in ppm									
7	HF in ppm									
8	Hydrocarbon in ppm									
9	O2 in %									
10	CO2 in %									
11	Opacity / PM in % / mg/Nm3									

D. Flue Gas Conditions at Sample Probe Location

Condition	**Expected Range Stack 1**	**Observed Range Stack 1**		**Expected Range Stack 2**	**Observed Range Stack 2**		**Expected Range Stack 3**	**Observed Range Stack 3**	
Flue gas Temperature (ºC)		Minimum	Max		Min	Max		Min	Max
Flue gas static pressure (mm H_2O)									

Flue gas velocity (m/Sec)									
Particulate (mg/NM^3)									
Moisture (%)									
Water Droplets (Yes or No)									
Fuel Used									
Quantity of Fuel Burnt									

Note: The values mentioned should be in accordance with historical data

PART E: Protocol for Selection and Installation of PM CEMS

Industry: **Process to which CEMS attached:** **Stack ID:**

S. No.	Information on	Detail information					Remarks
01	Type	In-situ	☐				
		Extractive	☐				Pipe Heating mechanism is must
02	Technology In Situ	A) Triboelectric or Electro-dynamic	☐	AC ☐	DC ☐	AC / DC ☐	Industry installed DC Tribo must have Flow measuring Device
		B) Opacity	☐				Not applicable for <2 m path
		C) Optical Scintillation	☐				Not suitable for >15% Moisture
		D) Light Scattering	☐	Forward ☐	Back ☐		Only Backward / Side Proscatter is allowed at >4m stack diameter
		Forward Proscatter ☐	Other Forward ☐	Backward Proscatter ☐	Back/Side Scatter ☐		
03	Technology Extractive	A) Light Scattering	☐	Forward ☐	Back ☐		The Sampling should be Online Isokinetic in all cases
		B) Optical Scintillation	☐				
		C) Beta Attenuation	☐				
	Distance of Measurement Bench (m)	☐					Heated Transfer line is must. Heating shall not be less than 100 ± 10 ºC
	Whether Heated line installed for sample transport	Yes ☐	No ☐				
	If Yes Temperature of Heating (ºC)	☐					
	Conditions at Mesurement Point	Temperature ☐ ºC	Moisture ☐ %				

S. No.	Information on	Detail information					Remarks
04	Light Source for optical measurement devices	Type :Laser, Diode etc.	Make	Sr. No.	Model	Life expectancy	Ensure that the source is replaced before its lifetime.
	Sensors used						
07	Serial No. of Devices and all accessories (Like temp. sensor, Flow, DAHS Box etc.) if possible.						
08	APCD Detail	Cyclone ☐	Bag Filter ☐	Wet Scrubbing ☐	ESP ☐	Others ☐	(A) Not Suitable after ESP
09	Stack Diameter	< 1.0 m ☐	1 – 2.0 m ☐	2 – 4.0 m ☐	>4.0 m ☐		Tribo is fit upto 2m Only Backward Proscatter and opacity are suitable for stack having more than 4m
10	Moisture %	Dry (upto 5 %) ☐	5 – 15 % ☐	15 – 35 % ☐	>35% ☐		> 35% System must be Extractive
11	Flow Meter Installed	Yes ☐		No ☐			Single point pitot type not recommended. Thermal anemometer is also not suitable at <3m/sec velocity
	Type of Flow Meter	Pitot Type ☐	Thermal Anemometer ☐	Ultrasonic ☐	Infrared ☐		
	Mention location of installation of Flow meter	Distance from Probe	Inclination	Projection (Up/Down)			Installation should be as close as possible to the probe
12	Moisture Monitoring Device Installed	Yes ☐		No ☐			
13	CO_2 Sensor	Yes ☐	No ☐	Type: NDIR ☐	FTIR ☐	DOAS ☐ TDLS ☐ Sensor ☐	Chemical Sensor based not Permitted
14	O_2 Sensor	Yes ☐		No ☐			

			Type: Zirconium Oxide / O_2 Cell ☐ TDLS ☐ Paramagnetic ☐ Sensor ☐			Chemical Sensor based not Permitted
15	CO Sensor	Yes ☐	No ☐			
			Type: NDIR ☐ Sensor ☐			Only NDIR is permitted
16	Temperature Probe installed	Yes ☐	No ☐			
	Mention location of installation of Flow meter	Distance from Probe	Inclination	Projection (Up/Down)		Installation should be as close as possible to the probe
17	Whether installation point is meeting 8D and 2D distance or at equivalent diameters	Yes ☐	No ☐			No Exemption is allowed

PART F: Protocol for Operation and Calibration of PM CEMS

Industry: **Process to which CEMS attached:** **Stack ID:**

S. No.	Information on	Detail information	Remarks
01	Emission Limit Prescribed (mg/NM^3)		
	Whether any corrections for CO2 or O2 prescribed		
02	Measurement Range of Instrument	Minimum ____ mg/Nm3 Maximum ____ mg/Nm3	
	Whether Dual range is available	Minimum ____ mg/Nm3 Maximum ____ mg/Nm3	
03	Selected Measurement Range	Minimum ____ mg/Nm3 Maximum ____ mg/Nm3	
04	Whether auto ranging available	Yes ____ No ____ If Yes Mention Ranges ____	
05	Dust Factor Set	Dust Factor ____ Date: ____ Dust Factor ____ Date: ____	**Provide details of all dust factors applied datewise.**
06	Stack Correction Factor set for Opacity Monitor	____ Date ____	
07	Plant Load Condition when Correlation Calibration done with Isokinetic sampling	____	
	Whether triplicate sampling at selected load was done	Yes ____ No ____	
08	Whether the calibration was made for different Load conditions	Yes ____ No ____ Loads in which system calibrated: 25% ____ 50% ____ 75% ____ 100% ____	Calibration at different Load conditions is highly recommended. The adjustment as per requirement of calibration is allowed and to be recorded and revised online

09	Date of last Calibration		Record of adjustment if done			
10	How many calibrations carried out in previous quarters					**If record is being filled on 1st of July provide information of April to June**
S. No.	**Information on**	**Detail information**				**Remarks**
10	Raw data recorded during calibration based on which Dust Factor calculated	Velocity ☐ m/Sec	Flue Gas Temp. ☐ °C	Moisture ☐ %	PM ☐ mg/Nm^3	
		CO_2 ☐	O_2 ☐ %	PM CEMS Reading ☐ mg/Nm^3 or mA		
11	Whether the data submitted to SPCB or CPCB are being normalized for	Temperature ☐	Moisture ☐	Pressure ☐		Each data has to be normalized at 760 mm of Hg Pressure , 25°C Temperature on dry basis
	Whether CO2/O2 Correction applied as prescribed in emission limit	Yes ☐	No ☐			
12	Instrument calibration frequency prescribed by manufacturer	Once in 3 months ☐	Half Yearly ☐	Yearly ☐	Others ☐	
13	Frequency of Calibration Verification (without adjustment)	Fortnightly ☐	Monthly ☐	Quarterly ☐	Yearly ☐	By Empaneled / Accredited Laboratories No adjustment is allowed during verification
14	Drift Specified by Manufacturer	Zero ☐	Up Scale (Span) ☐			
	Whether manufacturer's instruction followed	Yes ☐	No ☐			
15	Drift Measured In same time span as specified by manufacturer	Zero ☐	Up Scale (Span) ☐			
16	Frequency of Zero and Upscale Check prescribed in Manual	Daily ☐	Weekly ☐	Fortnightly ☐	Monthly ☐	
17	Frequency of cleaning and maintenance	Daily ☐	Weekly ☐	Fortnightly ☐	Monthly ☐	

18	Components to be cleaned as suggested by Manufacturer						
19	Cleaning Mechanism	Automatic Purging ☐		Manual Cleaning ☐			
20	Schedule of routine cleaning maintenance fixed by the industry						
21	Zero Adjustment Daily (Automatic)	Yes ☐		No ☐			
22	Availability of Calibration gas cylinders attached to the system	Yes ☐	No ☐	If yes : since when provide date: If No : Since when provide date:			
23	Source(s) of Calibration						
	If Gas cylinder used for calibration (Information to be provided to CPCB each time when new cylinder is procured)						
	Name of the Supplier	Address with City	Invoice number & Date	Concentrations with units	Validity dates on Certificates	**Certificate Copy Provided to CPCB Yes / No**	**Location of use of the gas for the calibration**
	1,						i.e. For Sox calibration at VSK 1.
	2,						*i.e. for Nox & Sox at VSK 2*
	Source(s) of calibration Cuvette if used for calibration (Information to be provided once at the time of initial installation)						
	Parameter for which cuvette is used	Calibration Ranges of cuvette	Guarantee of accuracy	Number of cuvettes	Linearity obtained or not?		*Any other information*
	i.e. Sox	0-200ppm	1% at ….	1	Only one point calibration		--
	If calibration is being done through Multi point Calibrator (Separate calibrator)						
	Make & Model of calibrator	No of chambers for permeation tubes	Permeation tube procured on date	Size of tube	Wafer/Steel	Flow range of calibrator	*others*

	If calibration is being done through single point calibrator (inbuilt permeation chamber based)						
	Make & Model of Instrument	Permeation tube procured on date	Size of tube	Wafer/Steel	Flow range of calibrator		*others*
	Source(s) of Zero Gas						
	If using Nitrogen cylinder (Information has to be submitted each time when new cylinder is procured)						
	Supplier Name	Address with City	Invoice number & Date	Zero air purity in %	Validity dates on Certificates if any	**Certificate Copy Provided to CPCB Yes / No**	**Location of use of the gas for calibration**
	If Zero gas generator is being used (information to be provided only once at initial installation)						
	Supplier name	Address with city name	Invoice number & Date	Technology used	Pressure to be maintained if specified	Cleaning frequency	**Other details if any**
	i.e. for Sox & NOx at Kiln 3	i.e.Using industry grade zero air for zero calibration i.e. using compressed natural air for zero calibration					

	Whether gas supplier is registered with CPCB	Yes	Registration number issued by CPCB	Date of registration	Registered for specially any specific gas or in general	**Supplying conc. Ranges of specific parameter**
			Abd1232	---	General	***i.e. Sox: 0.025 to 200 ppm***
		No	Provide complete details of gas supplier to CPCB			
	Name of the Supplier	Address with City	Invoice number & Date	Concentrations with units	Validity dates on Certificates	**Certificate Copy Provided to CPCB**

						Yes / No

PART G: Protocol for Selection, Installation, Operation and Calibration of Gaseous Analyzer in stack (SOx, NOx, CO_2, O_2 etc.)

Industry: **Process to which CEMS attached:** **Stack ID:**

S. No.	Information on		Detail information	Remarks
01.	How many stacks are connected with this process		1 2 >4	
02.	Name of emission point, where CEMS installed as per Industry nomenclature for ex. Stack 7B1			
03.	Location of CEMS at individual stack (Height from the Ground Level)			
04.	Type of APCDs connected with individual emission point		ESP Scrubber Cyclone Beg Filters Others	
05.	Parameter Monitored and continuous data made available to CPCB/SPCBs/PCCs indicate clearly. Like Sox/NOx continuous & CO2 & O2 are done through flue gas analyser etc. once in a month or at the time of calibration.		SO_2 NOx O_2 CO_2 Others	
06.	Type of Technology used		Extractive In- Situ Dilution Open Path Others	
07.	Measurement Technology	Extractive	Chem. UV- Flour NDIR IR-GFC PARAM NDUV FTIR Fl. I El. Chem.	
		In- Situ	NDIR Zirconium Oxide	
		Open Path	UV-DOAS RD-DOAS	

		Others	Tunable Diode	

S. No.	Information on		Detail information	Remarks
08.	Measurement Technology (Parameter wise)	SO_2		
		NO_x		
		CO_2		
		O_2		
		Others		
09.	Instrument Details	SO_2	**Location** **Make** **Model** **S. No.** **Approval**	
		NO_x		
		CO_2		
		O_2		
		Others		
10.	Heated Line for Sample Transport		**Yes** **No**	
11.	If Yes, Heating Temperature (°C)			
12.	Condition at Measurement Point		**Temperature (°C)** **Moisture (%)**	
13.	Calibration Frequency		Every 10 Days 15 Days 30 days More	What is prescribed by the supplyer?

S. No.	Information on		Detail information	Remarks
14.	Multipoint Calibration Frequency		Monthly ☐ Quarterly ☐ Half Yearly ☐	If use multi calibrator.
15.	Calibration Gas Details	SO_2	**Conc.** ☐ **Tracea.** ☐ **Validity** ☐ **Manuf.** ☐	
		NO_x	☐ ☐ ☐ ☐	
		CO_2	☐ ☐ ☐ ☐	
		O_2	☐ ☐ ☐ ☐	
		Others	☐ ☐ ☐ ☐	
16.	Date of First Multipoint Calibration		**SO_2** ☐ **NO_x** ☐ **CO_2** ☐ **O_2** ☐ **Others** ☐	
17.	Measurement Range		**0-200** ☐ **0-500** ☐ **0-1000** ☐	
18.	Unit of measurement (Reported)		**PPM** ☐ **PPB** ☐ **mg/m^3** ☐ **$\mu g/m^3$** ☐	
19.	Concentration at which calibration made (ppb/ppm)	SO_2	☐ ☐ ☐	
		NO_x	☐ ☐ ☐	
		CO_2	☐ ☐ ☐	
		O_2	☐ ☐ ☐	
		Others	☐ ☐ ☐	

S. No.	Information on		Detail information	Remarks
20.	Distance between Sampling system and analysers (Ext. System)			
21.	Sample Conditioning system (Ext. System)			
22.	Zero (Drift) Observation in 30 days.	SO_2	**Week 1** ☐ **Week 2** ☐ **week 3** ☐ **Week 4** ☐ **Monthly** ☐	**Zero Check is to be performed but correction is not permitted.**
		NO_x	☐ ☐ ☐ ☐ ☐	
		CO_2	☐ ☐ ☐ ☐ ☐	
		O_2	☐ ☐ ☐ ☐ ☐	
		Others	☐ ☐ ☐ ☐ ☐	
23.	Span (Drift) Observations in a month	SO_2	**Week1** ☐ **Week 2** ☐ **Week 3** ☐ **Week 4** ☐ **Monthly** ☐	**Span Check is to be performed but correction is not permitted.**
		NO_x	☐ ☐ ☐ ☐ ☐	
		CO_2	☐ ☐ ☐ ☐ ☐	
		O_2	☐ ☐ ☐ ☐ ☐	
		Others	☐ ☐ ☐	

S. No.	Information on		Detail information			Remarks
24.	Gain/K Factor of each Analyzer	SO_2	**Before Calibration** ☐	**After Calibration** ☐		
		NO_x	☐	☐		
		CO_2	☐	☐		
		O_2	☐	☐		
		Others	☐	☐		
25.	Value of Each Parameter at the time of calibration	SO_2	**Before Calibration** ☐	**After Calibration** ☐	**Deviation (%)** ☐	
		NO_x	☐	☐	☐	
		CO_2	☐	☐	☐	
		O_2	☐	☐	☐	
		Others	☐	☐	☐	
26.	Cleaning Mechanism		**Automatic** ☐	**Manual** ☐		

PART H - IT Protocol to be submitted even if a single parameter is being monitored in the industry.

Data for each parameter is to be submitted separately.

Sl. No.	Details to be provided	observations	Actually followed practice	Remarks

02	How long system is used as unattended	<5 Days	<15 Days	<30 Days Or more
03	Calibration performed on date (Last three)	Date Value with unit:	Date Value with unit:	Date Value with unit:
04	Zero check value measured last three	Date Value with unit:	Date Value with unit:	Date Value with unit:
05	Span Calibration value measured	Date Value with unit:	Date Value with unit:	Date Value with unit:
06	Calibration status	As on date: Regular	Last calibrated on: Once in month	Last Calibrated on: Once in 3 months/Not Done

07	Calibration frequency	in 1 M	in 2 M	in Other specify
	Inbuilt zero and span facility available in the system or not	Y/N	Whether, online Zero & Span calibration is being done at 10:00 am	Y/N if Yes at what frequency Y/N
	Online zero and span facility available in the system or not	Y/N	Whether, online Zero & Span calibration is being done at 10:00 am	Y/N if Yes at what frequency Y/N
09	Whether corrections (span & Zero) are being done automatically or manually	Auto/Manual		Y/N
	Whether data notification facility is available or not	Y/N	Whether data notification acceptance or rejection by SPCBs is practiced.	Y/N
11 IT	Whether raw data and validated data is being sent through online mechanism	Y/N	Remote management available Y/N	Multi server data submission possible or not Y/N

	directly to the server			
13	Log files data recorded ? Y/N	If yes provide location in the station computer file like d:\data	Is there in any intermediate PC or plant server Y/N	Config. Change alarm setting is possible Y/N Y/N
	Events logs recording location address: 182.12.12.12\data\NO2 etc.		Is there any in between PLC	Whether data is integrated at Central Control Room of Industry
	Independent analysis, notification, calibration provisions for each specific parameter availability	Y/N	If yes at what address available for CPCB to view it.	
	Non volatile memory storage capacity	06 Months or 01 year	01-02 years	2 to 5 years Or more
	Remote calibration data availability at central server available	Y/N	If Yes provide location details:	
	User friendly maintenance data visualisation &	Y/N	If Yes provide location details	Duration for which this data is available

	diagnostic features data			
	Continuous measurements on 24x7 basis Y/N	Change of units possible or not Y/N	What channel used for data transfer RS 232/RS485/LAN/USB	
	Analog outputs are available with each analyser and connected to the plant central control room	Y/N	In case no in which parameters it is not available	
	Data sent is in encrypted format Y/N	Data is linked to Data Acquisition and Handling Center Y/N	Software is operating on open API and REST technology Y/N	Systems records 15 minute values Y/N
		Y/N		
	Data quality codes defined or not? Y/N	Please provide the list of codes defined through cems.cpcb@nic.in	Instantaneous data visualization is possible or not Y/N	Data from this system is being sent on SPCB server Y/N

	The data validation mechanism is available in the system Y/N	 Y/N	Is there any procedure to submit the data manually Y/N	If yes provide the location details
	Is data being displayed on the industry's own website Y/N	The data can be depicted on map or not? Y/N	Database for calibration for last six months is available in the system Y/N	Data can be visualised by industry in terms of Statistical mean mode and median, SD etc Y/N
	The data can be visualised in tabular and graphical format or not? Y/N	Visualization w.r.to Standard limits is being done or not? Y/N	Which transmission channel is being used for data submission GPRS/Data Cards/Leased Line 1 MB or 2 MB/BroadBand	Data storage availability >1>2>3>5Year
	Backup power source Y/N	If Yes : capacity of the	Is data being displayed on	

	available	power source. a. offline/online b. backup Hours:	the industry's own factory gate Y/N	
	Location of DAHS installed in the industry. *i.e. Control Room* *i.e. AQMS Room etc*		Single or Multiple DAHS available	

Signature with Name of Industry Representative & with Seal