

Meghalaya State Pollution Control Board

Forests & Environment Department, Government of Meghalaya

'ARDEN' Lumpyngngad, Shillong - 793014

Website : <http://megspcb.gov.in>

(40)



No. MPCB/GEN-285/ANNEXED IX B/2024-2025/40

Dated Shillong the 24th Sept 2024

To,

The Secretary,
Government of India,
Ministry of Jal Shakti,
Department of Water Resources, River Development & Ganga Rejuvenation,
Shram Shakti Bhawan Rafi Marg,
New Delhi -110001.

Email: ruby.raju@nmcg.nic.in

Sub: **Submission of Monthly Progress Report for ensuring compliance to the Hon'ble NGT matter OA No 673 / 2018 for the month of July to September 2024.**

Sir/Madam,

With reference to the above, please find enclosed herewith the Monthly Progress Report for the month of July to September 2024 for favour of your kind information and necessary action.

Yours faithfully

Enclo: As stated

(Dr. C.H. CHYRMANG, MFS)
MEMBER SECRETARY
MSPCB, SHILLONG

Memo No. MPCB/GEN-285/ANNEXED IX B/2024-2025/40-A

Dated Shillong the 24th Sept 2024

Copy to: -

1. Shri. P. K. Mishra, DH, WQM-I, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi – 110032 for kind information. Email: eepkm.cpcb@nic.in/suniti.cpcb@gov.in
2. The Principal Chief Conservator of Forest (Working Plan, Research & Training) cum Chairman of River Rejuvenation Committee, Meghalaya, Shillong-793001 for favour of information.
3. The Director of Urban Affairs cum Member Convener of the RRC, Meghalaya, Shillong for information.

MEMBER SECRETARY
MSPCB, SHILLONG

o/c

NATIONAL MISSION FOR CLEAN GANGA

FORMAT FOR SUBMISSION OF MONTHLY PROGRESS REPORT IN THE NGT MATTER OA NO.673 OF 2018 (IN COMPLIANCE TO NGT ORDER) DATED 24.09.2020 FOR THE MONTH OF JULY TO SEPTEMBER 2024 FOR THE STATE OF MEGHALAYA

Overall status of the State:

- I. Total Population: Urban Population & Rural Population (5,95,450 & 23,71,439) 29,64,007
- II. Estimated Sewage Generation (MLD) (2025) 51.87 MLD in Urban areas
- III. **Details of Sewage Treatment Plant**
 - Existing no of STPs and Treatment Capacity (MLD) 19
 - Capacity Utilization of existing STPs (MLD) 3.0 MLD in Urban Areas
 - MLD of Sewage being treated through alternate technology 18.63 (Other forms of treatment of septic tank)
 - Gap in treatment Capacity in MLD 48.87 MLD in urban areas (13.14 MLD- Ongoing Project & 21.5 MLD- propose for treatment under SBM 2.0, Urban)
 - No of operational STPs 19
 - No of complying STPs 19
 - No of non-complying STPs

Details of Each Existing STP in the State

SN	Location	Existing STP Capacity MLD	Capacity being utilised MLD	Operational Status of STP	Compliance status of STP
1	Residential colony of Meghalaya Cements Ltd., Thangskai, East Jaintia Hills District	0.1	0.06	Operational	Complying
2	Residential colony of Star Cements Ltd., Lumshnong, East Jaintia Hills District	0.4	0.239	Operational	Complying
3	North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Mawdiangdiang	1	1	Operational	Complying
4	Residential colony of M/S Lafarge Umiang Mining Pvt. Ltd., Nongtra	0.12	0.03	Operational	Complying
5	Residential School -JNV, Mawphlang	0.1	0.02	Operational	Complying

6	Polo Market, Shillong	0.05	0.05	Operational	Complying
7	Green valley industries Ltd ,Nongsning,EJH	0.03	0.03	Operational	Complying
8	Dalmia Cement (Bharat) Ltd,Thangskai,EJH	0.05	0.04	Operational	Complying
9	Septage Treatment plant,Shillong	0.115	0.06	Operational	Complying
10	FSTP Marten, Shillong	0.115	0.115	Operational	Complying
11	FSTP Doldegre, Tura.	0.05	0.05	Operational	Complying
12	FSTP Resubelpara Municipal Board.	0.03	0.03	Operational	Complying
13	FSTP Baghmara Municipal Board	0.015	0.015	Operational	Complying
14.	STP. Police Bazaar Shillong, Marriot	0.25	0.25	Operational	Complying
15	STP Polo Municipal Market, Shillong	0.075	0.075	Operational	Complying
16.	Parking Lot Anjalee, Shillong	0.06	0.06	Operational	Complying
17	Shillong Municipal Board,FSTP	0.35	0.35	Operational	Complying
18	Jowai Municipal Board	0.055	0.055	operational	Complying
19	Williamnagar Municipal Board	0.03	0.03	operational	Complying

Liquid Waste management (LWM) facilities already constructed and LWM facilities under construction in Shillong & Jowai Towns

Shillong					
SN	Location	No of in-situ nullah Treatment Plants	%of	Remarks	July 2024 Updated Status
			construction		
1	Pomdngiem Drain (also referred as Wah Thangsniang Drain)	1	100% completed	Trial run has been completed	1.27 MLD of grey water is being treated by operational of the Nallah In-situ Remediation
2	Oakland Drain	1	100% completed	Trial run has been completed	
3	Lawmali Drain	1	100% completed.	Water Treatment infra ready for installation and will be installed soon after the monsoon	
				Water Treatment	

4	Wahingdoh - Raimohan Drain	1	100% completed	infra ready for installation and will be installed soon after the monsoon	
5	Polo Drain	1	100% completed.	Water Treatment infra ready for installation and will be installed soon after the monsoon	

Jowai

SN	Location	No of in-situ nullah Treatment Plants	February 2024 Status %of construction	Remarks
1	SyntuKsiar (near Myntwa Stream)	1	87%	So far, treatment of 0.65 MLD of grey water is being initiated by Nullah In-situ Remediation Plants installed in Jowai.
2	Panaliar	1	95%	
3	Caroline Colony	1	95%	
4	Ladthadlaboh west	1	95%	
5	Khimusniang	1	92%	
6	Umshangiar	1	85%	
7	lawmusniang	1	90%	
8	Mynthong1	1	90%	
9	Mynthong2	1	85%	
10	PanaliarMutong	1	90%	
11	Liar Kdongtreri at Panaliar	1	85%	

Status of Liquid Waste Management projects under consideration.

SN	Particulars	Approved no.	Approved Capacity/numbers	Remarks
1	Desludging Vehicles	8	8 Nos	Procurement of Cesspool Vehicles is under progress
2	STPs	8	21.5 MLD	1. Identification of Lands by ULBs is under progress
3	I & D (Interception & Diversion Drains)	8	23 KMs	2. Engagement of Technical Support Unit-Consultants is under finalization for preparation of Design & DPRs
4	Rampyrthai, Jowai	1	540 KLD	Proposals have been submitted for consideration of funds under Compensation for Restoration of Environment

Details of under construction FSSMs/FSTPs in the State

SN	Name of ULBs	No of Treatment Plants	Capacity	Status Present Status	Remarks
1	Faecal Sludge & Septage management, Khliehriat	1	0.04 MLD	95%	To be made operational.

Details of under construction STPs in the State

SN	Location	No of Treatment Plants	Capacity	Present Status	Remarks
1	Municipal filling point, Kenches Trace	1	3.17 MLD	99%	Construction of STPs of capacity 13.14 MLD in Shillong has been completed and will be made operational by October 2024
2	Junction of Wahingdoh and Umkhrah	1	7.12 MLD	99%	
3	Junction of Wahdasoi and Umkhrah	1	0.85 MLD	99%	
4	By the site of Wahpomdngiem behind SMB Complex at Bishop Cotton Road	1	2.00 MLD	99%	
5	Junction of Wahthangsniang and Umkhrah	1	0.28 MLD		Yet to start because of land ownership issues

IV. DetailsofIndustrial Pollution

• No. of industries in the State	1559
• No. of water polluting industries in the state	260
• Quantity of effluent generated from the industries in MLD	3.5
• Quantity of hazardous sludge generated from the industries in TPD	1.3105
• No. of industrial units having ETPs	255
• No of Industrial units connected to CETPs	Nil
• Compliance status of the ETPs	Complying
• No and total capacity of CETPs {details of existing/under construction /proposed}	Nil

Town	Noof Industries	Industrial discharge (MLD)	Status of ETPs	Status of CETPs (existing, under construction &proposed)
Shillong	221	1.9	Complying	-
Byrnihat	30	0.69	Complying	-
Nongstoin and Mairang	8	0.13	Complying	-
Ladrymbai&Khliehriat	12	0.02	Complying	-
Jowai	28	0.95	Complying	-
Khliehriat,Myndihati&Lumshnong	11	0.15	Complying	-
Tura	24	0.30	Complying	-
Umiam	15	0.1	Complying	-

STATUS OF ULB WISE MANAGEMENT OF SOLID WASTE

V. Solid Waste Management

- Total number of Urban Local Bodies and their Population: **10 Nos, (7,25,247)**
- Current Municipal Solid Waste Generation: **311 TPD**
- Current Waste Process: **159 TPD (Composting: 94 TPD, RDF: 7 TPD Others: 58 TPD)**
- Number, installed capacity and utilization of existing MSW processing facilities in TPD (bifurcated by type of processing eg. Waste to Energy (Tonnage and Power Output), Compost Plants (Windrow, Vermi, decentralized pit composting), biomethanation, MRF etc.: Action plan to bridge gap between Installed Capacity and Current Utilization of processing facilities (if Gap> 20%):

EXISTING SWM PLANTS IN MEGHALAYA						
SN	Town	Facility Type	Installed Capacity	Nos.	Utilization	Remarks
1	Shillong	Waste Recovery centre	8TPD	4	6TPD	All 4nos. are made operational.
2.	Tura	Waste to Compost	40TPD	1	0TPD	Yet to be made operational
3	Nongpoh	Waste to Compost	15TPD	1	0TPD	Yet to be made operational
4	Shillong	Waste to Compost	170TPD	1	90TPD	The plant is 100% operational
5	Jowai	Waste Recovery centre	1 TPD	1	1TPD	Operational
6	Khliehriat	Composting Plant	0.1 TPD	1	-	Completed and is on trial stage.

- No. And capacity of C & D waste processing plants in TPD (Existing, proposed and under construction): **None**
- Total no. Of wards, having door to door collection service, no. Of wards practicing segregation at source:
- 97 wards have door to door collection service; 75 wards practicing segregation at source.**
- Details of MSW treatment facilities proposed and under construction (no. Capacity, and technology)

Status of Solid Waste Management currently undertaken

Approved Solid Waste Management Project by (ULBS)				
Sl.no	Particular	Approved No	Approved Quantity(TPD)	Remarks
1	Sanitary Waste Incinerator: Shillong	1	4	Installation Completed, the plant is under trial and shall be made functional by October 2024
2	Compost Plant in Khliehriat	1	10	Tendering process completed and work is under progress.
3	Decentralized Wet Waste Processing	8	35.5	I. One Decentralized waste processing unit of 3 TPD capacity is completed and training of SHG to operate the facility is under progress. II. Work on 3 (Three) Decentralized waste processing units of 14.5 TPD capacity has been initiated. III. iii. Detail Project Reports are under preparation by the ULBs for 18 TPD.
4	Material Recovery Facility for Dry Waste processing	10	58.5	i. Work on 4 (Four) Decentralized waste processing units of 43 TPD capacity has been initiated. ii. Details Project Reports are under preparation by the ULBs for 15.5 TPD.

- No. And area (in acres) of uncontrolled garbage dumpsites and Sanitary Landfills: Current status of setting up Sanitary Landfills sites in various ULBs in Meghalaya

Towns	Distri ct	Location	Area	Progress	Present Status
Shillong	East Khasi Hills	Nonghali (new and Alternate Site)	200 Acre	1. Land Survey comple ted. 2. Environ ment Impact Assess ment (EIA) is under progres s.	1. Land Survey Completed 2. Environment Clearance process ongoing i. Online application completed ii. Environment Baseline Monitoring Report completed iii. Prepararion of EIA/EMP plan is under progress
		Marten (existing and old but functional)		It is currently being used	Bio Remediation of 155,600 Tons of Legacy Waste in an area of 4Acre in Marten has been started.
Jowai	West Jaintia Hills	--	--	New Expression of interest floated on 8 th June 2023	New Expression of interest floated on 1 st August 2024 as the proposal received earlier were not feasible.
Tura	West Garo Hills	Wakkagre	21.02 Acre	Direct Purchased which 1.5 Crorewas paid	1. Land acquisition Completed 2. Environment Clearance process to be taken up
Williamnagar	East Garo Hills	Rongakgre	37 Acre	Proposal moved to Governme nt by Director, Urban Affairs to go for Direct Purchased	1. Land acquisition Completed 2 . Environment Clearance process to be taken
Resulbelpara	North Garo	ElachiApal	14 Acre	Awaiting for approval from the Directorate on the Site Finalization	1. Proposal for land has been received. 2. Direction has been sent to task Force

	Hills				for further examination and other details for purchase.
Baghmara	South Garo Hills	Arapara	15 Acre	Awaiting for approval from the Directorate on the Site Finalization	Instruction has been issued to the Task Force for submitting report on the feasibility of the site.

VI. Bio-medical Waste Management:

- Total Bio-medical generation: **2840.66 Kg/day**
- No. of Hospitals and Health Care Facilities: **1066**
- Status of Treatment Facility/CBMWTF:

- Common Bio-Medical waste treatment is completed and is in operation.
- The Urban Affairs has procured three Bio-medical Wastes vehicles solely for transport of Bio-medical Wastes

VII. Hazardous Waste Management:

- Total Hazardous Waste generation: **498.4434 KL/annum**
- No. of Industries generating Hazardous waste: The following 19 (Nineteen) units are authorized under the hazardous & other waste (Management & Transboundary Movement) Rules, 2016. waste

1. M/s Star Cement Ltd., Lumshnong, EJH District
2. Mis Star Cement Meghalaya Ltd., Lumshnong, EJH District
3. Mis Megha Technical Engineers Pvt. Ltd., Lumshnong, EJH District
4. Mis Dalmia Bharat (Cement) Ltd, Thangskai, EJH District
5. Mis Meghalaya Cements Ltd., Thangskai, EJH District
6. Mis Amrit Cements Ltd., Umlaper, EJH District
7. Mis Green Valliey Industries Ltd., Nongsning, East Jaintia Hills District
8. Mis Goldstone Cement Ltd., Musiang Lamare (Old), East Jaintia Hills District
9. Mis Hills Cement Company Ltd., Mynkre, East Jaintia Hills District
10. Mis CMJ Breweries Pvt. Ltd., Extended EPIP, Bymihat, Ri-Bhoi District
11. Mis Shyam Century Ltd., EPIP, Bymihat, Ri-Bhoi District
12. Mis Maithan Alloys Ltd., EPIP, Bymihat, Ri-Bhoi District
13. Mis NTL Steels, EPIP, Bymihat, Ri-Bhoi District (**Galvanising Unit**)
14. Mis Nezone Pipes & Structures, Extended EPIP, Byrihat, Ri-Bhoi District (**Galvanising Unit**)

15. Mis Godrej Consumers (P) Ltd., 15th Mile, Bymihat, Ri-Bhoi District
16. Mis Pioneer Carbide (P) Ltd., Upper Baliyan, Umtru Road, Bymihat, Ri-Bhoi District
17. *Mis* Lafarge Umiam (P) Ltd, Nongtra, East Khasi Hills District
18. *Mis* Meghalaya Power Ltd., Lumshnong, East Jaintia Hills District (8MW)
19. *Mis* Meghalaya Power Ltd., Lumshnong, East Jaintia Hills District (43 MW)

- Treatment Capacity of all TSDF's: **Not available**
- Avg. Quantity of Hazardous waste reaching the TSDF's and Treated: **Nil**
- Details of on-going or proposed TSDF: **Types of hazardous wastes generated are recyclable & Landfillable. All the recyclable hazardous waste generated are either sold to the registered CPCB recyclers or reuse by the Industria units as lubricants or as fuel particularly by Cement plants. It may be informed that out of these, there are 2 Galvanishing Units producing landfillable hazardous wastes in the state of Meghalaya. Since there is no common Hazardous waste Treatment & Disposal facilities in the entire North East Region, these units have established their own in-house disposal facility for such wastes provided with a proper covered cemented floor and liner on top to prevent contamination of soil and underground water.**

VIII. Plastic Waste Management:

- Total Plastic Waste generation: **2223.6 TPA**
- Treatment/Measures adopted for reduction or management of plastic waste:
 - (a) The plastic wastes are collected as municipal waste. The plastic waste was segregated from the dry waste at the dumpsite and collected for compaction and bailing and send to Cement Plants for co-processing to be used as Fuel.
 - (b) Used for roadmaking in some parts of Tura, and Nongstoin.
 - (c) Recyclable plastic sends for recycling to Assam by Tura Municipal Board.

IX. Details of Alternate Treatment Technology being adopted by the State/UT:

X. Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment:

XI. Details of Nodal Officer appointed by Chief Secretary in the State/UT: **The Government has constituted a Monitoring Committee under the chairmanship of the Principal Secretary to the Govt. of Meghalaya, Forests & Environment Department vide no. ENV.4/2018/426; Dated Shillong the 19th June 2020.**

XII. Details of meetings carried under the Chairmanship Chief of Secretary in the State/UT:

XIII. Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river: **Enclosed as II A to Annexure IX B**

XIV. Ground water regulation: **For Domestic purpose - District Level Committee Ground Water Resource (Deputy commissioner of respective District as Chairman and official of Water resources as Member Secretary) looks after it and grant NOC For Commercial purpose -**

State Level Committee Ground Water Resource (Commissioner & Secretary, Water Resources as Chairman and Regional Director, CGWB, NER, as Member Convener) looks after it and grant NOC.

XV. Good irrigation practices being adopted by the State: **Traditional Bamboo Drip Irrigation**

XVI. Rain Water Harvesting: (a) **Rain water harvesting implemented for Schools and government buildings. (b) Incorporated as one of the condition while giving permission for any house construction**

XVII. Demarcation of Floodplain and removal of illegal encroachments: (a) **Network design including the proposed additional installation submitted. Field Survey report of Umkhrach, Nonbah**

,Umtrew and Myntdu have been submitted and various inputs for catchment models have also been prepared .80% of the work have been completed.

(b) Setting up of HO stations was completed. Hydro-meteorological data from the installed instruments have been collected and compiled for the month of July

(c) The rain gauges and staff gauges have been installed in all the four study river basins and data collection was initiated from 1st May 2022.

(d) Flood models of Umkhrach, Nonbah ,Umtrew and Myntdu have been simulated for 2,5,10,25,50, and 100 years return period floods and team is reviewing the results.

(e) Calibration of flood models for different flood events have been started. Method to estimate areal rainfall from observed point rainfall is being analysed.

(f) Major work of Draft Feasibility Study Report is completed in July 2022.

(g) Flood inundation scenarios with and without considering the flood protection at various locations in Umkhrach, Nonbah, Umtrew and Myntdu have been generated.

(h) Draft report on Flood Plain Zoning and Flood Mitigation Measures has been submitted and is under review by the Department

XVIII. Maintaining minimum e-flow of river: **Perennial rivers**

XIX. **Plantation activities along the rivers: Creation of Temporary nursery and preliminary works completed for the catchment area of Nonbah river. 1800 sapplings planted in the catchment of Umkhrach covering an area of 3.5 km. 500 sapplings planted in the catchment of Umtrew covering an area of 0.5 Ha.**

XX. **Reuse of Treated Water: Stand-alone ETPs are operational in 260 number of hotels/guesthouse/health care centers /Industries and treated wastewater are reuse for gardening/cleaning purpose.**

i. **Model River being adopted by the State & Action Proposed for achieving the bathing quality standards:**

XXI. **Status of Preparation of Action Plan by the 13 Coastal States: Not applicable to the State of Meghalaya**

XXII. **Regulation of Mining Activities in the State/UT: Mining activities in the State is being**

regulated under the following acts and rules

- a) Mines and Minerals (Development and Regulation} Act 1957 and its subsequent amendments
- b) EIA notification ,2006 and its subsequent amendments
- c) Meghalaya Minor mineral Concession Rules 2016 and its subsequent amendments
- d) EP Acts, 1986
- e) The Air (Prevention and Control of Pollution} Act,1981 and the Water (Prevention and Control of Pollution} Act,1974

XXIII. Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring:

- a) Units which failed to comply to the consent conditions have been issued directions, show cause notice and closure notices
- b) Units which have been operating without consent from the Pollution Control Board have been issued closure notices under relevant Acts and Rules
- c) Filing of Complaints to the District Courts

ANNEXURE

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES -JULY 2024

Stations Parameter\N	Umshyrpi		Umkhrah				Umtrew at Byrnihat	Nonbah at Nongstoin	Myntdu at Jowai	Lunar River (Tributary of Lukha River) at Myndihati	Kyrhukhla River
	Near Law College	Umshyrpi Bridge	Demthring	Umkaliar	Near Slaughter House	Mawpdang					
<i>pH</i>	6.7	6.9	6.9	7.1	7.3	7.0	6.8	6.7	6.9	2.9	3.1
<i>Dissolved Oxygen(mg/l)</i>	4.8	6.1	4.9	6.4	4.9	4.7	7.4	7.4	7.5	7.3	7.0
<i>Bio-chemical Oxygen Demand (mg/l)</i>	15	7.9	10.0	4.0	12.0	15.0	2.0	2.1	1.8	1.9	2.0
<i>Faecal Coliform (MPN/100ml)</i>	23000	3100	11000	2500	17000	21000	410	580	330	<1.8	<1.8
<i>Total Coliform (MPN/100ml)</i>	94000	11000	24000	5400	70000	84000	3500	4300	2700	<1.8	<1.8
<i>Faecal Streptococci (MPN/100m</i>	6300	1100	3300	920	6300	7000	170	240	150	<1.8	<1.8

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES – AUGUST 2024

Stations→ Parameters↓	Umshyрпи		Umkhrah				Umtrew at Byrnihat	Nonbah at Nongstoin	Myntdu at Jowai	Lunar River (Tributary of Lukha River) at Myndihati	Kyrhukhla River
	Near Law College	Umshyрпи Bridge	Demthring	Umkaliar	Near Slaughter House	Mawpdang					
pH	6.7	6.7	6.8	6.8	6.9	6.8	6.9	6.8	7.0	2.9	3.6
Dissolved Oxygen(mg/l)	4.0	5.2	4.6	5.6	4.5	4.3	7.5	7.6	7.6	7.1	6.9
Bio-chemical Oxygen Demand (mg/l)	17.0	6.4	12.0	4.4	14.0	16.0	1.9	1.7	1.6	2.0	2.2
Faecal Coliform (MPN/100ml)	24000	3800	12000	2700	21000	22000	430	550	340	<1.8	<1.8
Total Coliform (MPN/100ml)	110000	14000	27000	6300	79000	94000	4300	4100	2400	<1.8	<1.8
Faecal Streptococci (MPN/100m	7900	1700	3100	1100	840	7900	150	210	140	<1.8	<1.8

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES - SEPTEMBER 2024

Stations Parameters,	Umshyrpi		Umkhrah			Umtrew at Bymihati	Nonbah at Nongstoin	Myntdu atJowai	Lunar River (Tributary of Lukha River) at Myndihati	Kyrthuhkha River
	Near Law College	Umshyrpi Bridge	Demthring	Umkaliar	Near Slaughter House					
pH	6.8	7.1	6.7	6.8	7.0	7.3	7.0	7.0	3.0	3.2
Dissolved Oxygen(mg/l)	4.6	5.8	5.0	5.8	4.8	7.2	7.3	7.4	7.3	7.2
Bio-chemical Oxygen Demand (mg/l)	15.6	6.1	9.3	4.7	13.0	2.3	2.0	1.7	1.6	1.8
Faecal Coliform (MPN/100ml)	22000	3500	9400	2700	20000	510	490	430	<1.8	<1.8
Total Coliform (MPN/100ml)	84000	12000	22000	5800	70000	4600	4300	3300	<1.8	<1.8
Faecal Streptococci (MPN/100m	7000	1200	2700	920	7900	210	240	210	<1.8	<1.8