

Central Pollution Control Board

(Ministry of Environment, Forest and Climate Change, GoI)

Parivesh Bhawan, East Arjun Nagar, Delhi 110032

B-31011/BMW(94)/2020/WM-I

April 19, 2020

By E-mail To,

MoEF&CC / MoH&FW / MoHUA / State Departments of Health

SPCBs/PCCs/ Association of CBWTFs/State Departments of Urban Development

Sub: Guidelines for Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Revision 2 dated 18/04/2020– reg.

Encl.: As above



Issued by

**(Prashant Gargava)
Member Secretary**

List of Ministries/Departments

1.	The Special Secretary, Ministry of Health & Family Welfare, Room No. 344-A, Nirman Bhawan, Near Udyog Bhawan Metro Station, Maulana Azad Road, New Delhi, Delhi -110011
2.	The Principle Secretary, Ministry of Urban Development, (NULM) Room No. 114-C, Nirman Bhawan, New Delhi.
3.	Joint Secretary, HSM Division, Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi-110 003
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List of all the State Pollution Control Boards (SPCBs) & Pollution Control Committees (PCCs)

1.	The Member Secretary Telangana Pollution Control Board Paryavaran Bhawan, A-III Institutional Estate, Sanathnagar Hyderabad - 500018.	11.	The Member Secretary Shiekh-ul-Campus, behind Govt. Silk Factory, Raj Bagh, Srinagar(J&K)
2.	The Member Secretary Andhra Pradesh Pollution Control Board D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre, Chalamvari Street, Kasturibaipet, Vijayawada - 520 010	12.	The Member Secretary Jharkhand State Pollution Control Board T.A. Building, HEC, P.O. Dhurwa, Ranchi-834 004
3.	The Member Secretary Arunachal Pradesh Pollution Control Board Department of Environment & Forests, Paryavaran Bhawan, Yupia Road, Papu Nalah, Naharlagun- 791110	13.	The Member Secretary Karnataka State Pollution Control Board "Parisara Bhavan", #49, 4th & 5th Floor, Church Street, Bangalore-560001
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5.	The Member Secretary Bihar Pollution Control Board Parivesh Bhawan, Plot No. NS-B/2 Patliputra Industrial Area, Patliputra, Patna (Bihar)-800023	15.	The Member Secretary Maharashtra Pollution Control Board Kalptaru Point, 2nd - 4th floor, Opp. Cine Planet, Sion Circle, Sion (E), Mumbai - 400 022
6.	The Member Secretary Chhattisgarh Environment Conservation Board Paryavas Bhawan, North Block Sector-19, Naya Raipur (C.G.)- 492002	16.	The Member Secretary Madhya Pradesh Pollution Control Board Paryavaran Parisar, Sector E-5, Arera Colony, Bhopal - 462 016
7.	The Member Secretary Goa Pollution Control Board Opp. Saligao Seminary, Saligao - Bardez Goa - 403511	17.	The Member Secretary Manipur Pollution Control Board Near Imphal West D.C. Office Complex, Lamphelpat, Imphal - 795 004.
8.	The Member Secretary Gujarat Pollution Control Board Paryavaran Bhawan, Sector 10-A, Gandhi Nagar - 382010	18.	The Member Secretary Meghalaya Pollution Control Board Arden, Lumpyngngad, Shillong - 793 014
9.	The Member Secretary Haryana Pollution Control Board C-11, Sector-6 Panchkula Haryana-134 109	19.	The Member Secretary Mizoram Pollution Control Board New Secretariat Complex, Khatla, Aizawl, Mizoram - 796001
10.	The Member Secretary Himachal Pradesh Pollution Control Board Paryavaran Bhawan, Phase-III, Below BCS, New Shimla - 171 009.	20.	The Member Secretary Nagaland Pollution Control Board Signal Point, Dimapur, Nagaland - 797112
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		22.	The Member Secretary Punjab Pollution Control Board Vatavaran Bhawan, Nabha Road Patiala - 147 001
		23.	The Member Secretary Rajasthan Pollution Control Board 4, Institutional Area, Jhalana Doongri Jaipur - 302 004, Rajasthan.

24.	The Member Secretary State Pollution Control Board Forest, Environment Wildlife Management Department Government of Sikkim Forest Secretariat Annex I, Ground Floor, Deorali, Gangtok -737102 East Sikkim
25.	The Member Secretary Tamil Nadu Pollution Control Board No. 76, Mount Salai Guindy, Chennai - 600 032
26.	The Member Secretary Tripura Pollution Control Board, Parivesh Bhawan, Pandit Nehru Complex, Gorkhabasti P.O. Kunjaban, Agartala Tripura - 799 006,
27.	The Member Secretary Uttar Pradesh Pollution Control Board Building No TC-12V Vibhuti Khand, Gomti Nagar Lucknow - 226 010
28.	The Member Secretary Uttarakhand Environment Protection & Pollution Control Board 29/20, Nemi Road, Dehradun - 248001.
29.	The Member Secretary West Bengal Pollution Control Board Parivesh Bhawan, 10A, Block- LA, Sector III, Salt Lake City, Calcutta- 700106
30.	The Member Secretary Chandigarh Pollution Control Committee Paryavaran Bhawan, Ground Floor Madhya Marg, Sector C19-B, Chandigarh - 160 019
31.	The Member Secretary Delhi Pollution Control Committee 4th Floor, ISBT Building, Kashmere Gate, Delhi - 110006.
32.	The Member Secretary Daman, Diu & Dadra & Nagar Haveli Pollution Control Committee Fort Area, Court Compound, Moti Daman- 396220
33.	The Member Secretary Lakshadweep Pollution Control Committee Lakshadweep Administration, Dept. Of Sc. and Technology & Environment Kavaratti Island-682 555
34.	The Member Secretary Andaman & Nicobar Pollution Control Committee Dept. Of Sc. and Technology Dollygunj Van Sadan, Haddo P.O. Port Blair - 744 102
35.	The Member Secretary Puducherry Pollution Control Committee Department of Science, Technology and Environment IIIrd floor, PHB Building, 5, Anna Nagar, Puducherry - 605005

List of State Urban Development Department

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4.	Deputy Director Urban Development & Housing Department, Room No 107 Vikash Bhavan Belly Road, New Secretariat,Patna-800015	15.	Principal Secretary Directorate of Municipal Administration, Government Transport Service Building, Sir Pochakhanwala Road, Worli,Mumbai-400030
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8.	Special Secretary-cum-Mission Director State Urban Development Agency, SCO No.20, 1st Floor, Sector 7 C, Madhya Marg,Chandigarh-160019	19.	Project Director (NULM) Urban Development & Poverty Alleviation Department, Thakthing Tlang,Aizwal-796001
9.	Director Urban Development Department, Palika Bhavan,Talland,Shimla-171002	20.	Joint Director State Urban Development Agency, Nagaland,Kohima-797004
10.	Director Housing & Urban Development Department, Room No 3/9,Civil Secretariat,Jammu-181001	21.	Mission Director Housing & UD Department, Odhisha Secretariat,Bhubaneswar-751001
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27.	Director Urban Development Directorate, 43/6 Mata Mandir Marg, Dharampur, Dehradun-248001
28.	Director State Urban Development Agency, Nav Chetna Kendra, 10, Ashoka Marg, Lucknow-226001
29.	Director State Urban Development Agency, H Block, Sector 3 Salt Lake, ILGUS Bhavan, Bidhan Nagar, Kolkata- 700106
30.	Joint Secretary Urban Development, A&N Administration, Port Blair-744101
31.	Joint Commissioner Municipal Corporation of Chandigarh, Room No.202, Sector 17, New Delux Building , Municipal Corporation, Chandigarh- 160017
32.	Joint Secretary Urban Development Department, Administration of Dadra & Nagar Haveli, U.T., Silvassa-396220
33.	Collector Collectorate Dholar Modi Daman-396220
34.	Special Secretary Urban Development, A Wing, 10th Level Room 1004, Delhi Secretariat, IP Estate, New Delhi-110002
35.	Project Director Pondicherry Urban Development Agency, No.16 Suffren, Puducherry-605001

36.	Collector- cum Development Commissioner Kavaratti-682555
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List of Health Department

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26.	Principal Secretary, (Public H&FW) Department of Health & Family Welfare Government of Maharashtra, 10th Floor, B Wing GT Hospital Complex Building Mumbai - 400001, Maharashtra
27.	Addl. Chief Secretary (H&FW), Department of Health & Family Welfare Government of Punjab, R. No. 314, 3th Floor, Mini Secretariat Punjab, Sector 9, Chandigarh, Punjab- 160009
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List of Health Department

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35.	Secretary (H&FW) Department of Health & Family Welfare Government of Puducherry, Chief Secretariat, Government of Puducherry

Puducherry - 605 001

Revision 2:

**Guidelines for Handling, Treatment and Disposal of Waste Generated during
Treatment/Diagnosis/ Quarantine of COVID-19 Patients**

18th April, 2020

**[In suppression of earlier guidelines uploaded at CPCB website on 25/03/2020. Text pertaining to
additional information is underlined]**



Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi – 110032

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Rev. 2

In order to deal with COVID-19 pandemic, State and Central Governments have initiated various steps, which include setting up of quarantine centers/camps, Isolation wards, sample collection centers and laboratories.

Following specific guidelines for management of waste generated during diagnostics and treatment of COVID-19 suspected / confirmed patients, are required to be followed by all the stakeholders including isolation wards, quarantine centers, sample collection centers, laboratories, ULBs and common biomedical waste treatment and disposal facilities, in addition to existing practices under BMW Management Rules, 2016.

These guidelines are based on current knowledge on COVID-19 and existing practices in management of infectious waste generated in hospitals while treating viral and other contagious diseases like HIV, H1N1, etc. These guidelines will be updated if need arises. This Revision-2 of guidelines is mainly to incorporate specific requirements and responsibilities of persons operating sewage treatment plants at Healthcare Facilities and to clarify on management of general waste from quarantine homes and masks/gloves from other households.

Guidelines brought out by WHO, MoH&FW, ICMR, CDC and other concerned agencies from time to time may also be referred.

Guidelines for handling, treatment and disposal of COVID-19 waste at Healthcare Facilities, Quarantine Camps/ Quarantine-homes/ Home-care, Sample Collection Centers, Laboratories, SPCBs/PCCs, ULBs and CBWTFs is give below;

(a) COVID-19 Isolation wards: (isolation wards are those where COVID-19 positive patients are being kept for treatment / diagnosis)

Healthcare Facilities having isolation wards for COVID-19 patients need to follow these steps to ensure safe handling and disposal of biomedical waste generated during treatment;

- Keep separate color coded bins/bags/containers in wards and maintain proper segregation of waste as per BMWM Rules, 2016 as amended and CPCB guidelines for implementation of BMW Management Rules.
- As precaution double layered bags (using 2 bags) should be used for collection of waste from COVID-19 isolation wards so as to ensure adequate strength and no-leaks;
- Collect and store biomedical waste separately prior to handing over the same CBWTF. Use a dedicated collection bin labelled as “COVID-19” to store COVID-19 waste and keep separately in temporary storage room prior to handing over to authorized staff of CBWTF. Biomedical waste collected in such isolation wards can also be lifted directly from ward into CBWTF collection van.
- In addition to mandatory labelling, bags/containers used for collecting biomedical waste from COVID-19 wards, should be labelled as “COVID-19 Waste”. This marking would enable CBWTFs to identify the waste easily for priority treatment and disposal immediately upon the receipt.
- General waste not having contamination should be disposed as solid waste as per SWM Rules, 2016.

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Rev. 2

- Maintain separate record of waste generated from COVID-19 isolation wards
- Use dedicated trolleys and collection bins in COVID-19 isolation wards. A label “COVID-19 Waste” to be pasted on these items also.
- The (inner and outer) surface of containers/bins/trolleys used for storage of COVID-19 waste should be disinfected with 1% sodium hypochlorite solution daily.
- Report opening or operation of COVID-19 ward and COVID ICU ward to SPCBs and respective CBWTF located in the area.
- Depute dedicated sanitation workers separately for biomedical waste and general solid waste so that waste can be collected and transferred timely to temporary waste storage area.
- Feces from COVID-19 confirmed patient, who is unable to use toilets and excreta is collected in diaper, must be treated as biomedical waste and should be placed in yellow bag/container. However, if a bedpan is used, then faeces to be washed into toilet and cleaned with a neutral detergent and water, disinfected with a 0.5% chlorine solution, then rinsed with clean water.^{a1}
- Collect used PPEs such as goggles, face-shield, splash proof apron, Plastic Coverall, Hazmet suit, nitrile gloves into Red bag; a²
- Collect used masks (including triple layer mask, N95 mask, etc.), head cover/cap, shoe-cover, disposable linen Gown, non-plastic or semi-plastic coverall in Yellow bags. a³

[^{a1 to a3} Inserted in Rev. 2 of guidelines dated 18/04/2020]

(b) Sample Collection Centers and Laboratories for COVID-19 suspected patients

Report opening or operation of COVID-19 sample collection centers and laboratories to concerned SPCB. Guidelines given at section (a) for isolation wards should be applied suitably in in case of test centers and laboratories. Pre-treat viral transport media, plastic vials, vacutainers, eppendorf tubes, plastic cryovials, pipette tips as per BMWM Rules, 2016 and collect in Red bags.^{b1}

[^{b1} Inserted in Rev. 2 of guidelines dated 18/04/2020]

(c) Responsibilities of persons operating Quarantine Camps/Homes or Home-Care facilities*

Less quantity of biomedical waste is expected from quarantine Camps / Quarantine Home/ Home-care facilities. However, the persons responsible for operating quarantine camps/centers/home-care for suspected COVID-19 persons need to follow the below mentioned steps to ensure safe handling and disposal of waste;

- General solid waste (household waste) generated from quarantine centers or camps should be handed over to waste collector identified by Urban Local Bodies or as per the prevailing local method of disposing general solid waste.

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Rev. 2

- Biomedical waste if any generated from quarantine centers/camps should be collected separately in yellow colored bags (suitable for biomedical waste collection) provided by ULBs. These bags can be placed in separate and dedicated dust-bins of appropriate size.
- Persons operating Quarantine camps/centers should call the CBWTF operator to collect biomedical waste as and when it gets generated. Contact details of CBWTFs would be available with Local Authorities.
- Persons taking care of quarantine home / Home-care should deposit biomedical waste if any generated from suspected or recovered COVID-19 patients, by following any of the following methods as may be arranged by ULBs;
 - Hand over the yellow bags containing biomedical waste to authorized waste collectors at door steps engaged by local bodies; or
 - Deposit biomedical waste in yellow bags at designated deposition Centers established by ULBs. The bag again be stored in yellow bag or container; or
 - Handover the biomedical waste to waste collector engaged by CBWTF operator at the doorstep.
- Persons operating Quarantine camps/centers or Quarantine-homes/Home-care should report to ULBs in case of any difficulty in getting the services for disposal of solid waste or biomedical waste.

Clarifications:

- Quarantine Camps / Quarantine-Home are the places where suspected people or the contacts of suspected / confirmed cases who have been directed by authorized hospitals or local authorities to stay at home for at least 14 days or more for observation for any symptom of COVID-19, if any.
- Homecare – Home care facility is a home where care is to be provided to a COVID-19 positive patient at home. ^{c1}
- Biomedical waste at Quarantine Camps / Home-care may also comprise of used syringes, date expired or discarded medicines, used masks/gloves and in case of patients with other chronic diseases may also include drain bags, urine bags, body fluid or blood soaked tissues/cotton, empty ampules etc.
- Biomedical waste generated from Quarantine Camps / Quarantine-Home / Home-care would be treated as 'domestic hazardous waste' as defined under Solid Waste Management Rules, 2016, and shall be disposed as per provisions under Biomedical Waste Management Rules, 2016 and these guidelines.
- General waste from Quarantine Camps / Quarantine-Home / Home-care shall be disposed as solid waste as per provisions under SWM Rules, 2016
- Used masks and gloves generated form home quarantine or other households should be kept in paper bag for a minimum of 72 hours prior to disposal of the same as general waste. It is advisable to cut the masks prior to disposal to prevent reuse. ^{c2}

[*Amended in Rev. 1 of guidelines dated 25/03/2020]

[c1 and c2 Amended in Rev. 2 of guidelines dated 18/04/2020]

[c2: Criteria for 72 hours is as per CDC guidelines for Decontamination and Reuse of Filtering Facepiece Respirators]

**Guidelines for Handling, Treatment, and Disposal of Waste Generated during
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(d) Duties of Common Biomedical Waste Treatment Facility (CBWTF):

- Report to SPCBs/PCCs about receiving of waste from COVID-19 isolation wards / Quarantine Camps / Quarantined homes / COVID-19 Testing Centers;
- Operator of CBWTF shall ensure regular sanitization of workers involved in handling and collection of biomedical waste;
- Workers shall be provided with adequate PPEs including three layer masks, splash proof aprons/gowns, nitrile gloves, gum boots and safety goggles;
- Use dedicated vehicle to collect COVID-19 ward waste. It is not necessary to place separate label on such vehicles;
- Vehicle should be sanitized with sodium hypochlorite or any appropriate chemical disinfectant after every trip.
- COVID-19 waste should be disposed-off immediately upon receipt at facility.

In case it is required to treat and dispose more quantity of biomedical waste generated from COVID-19 treatment, CBWTF may operate their facilities for extra hours, by giving information to SPCBs/PCCs.

- Operator of CBWTF shall maintain separate record for collection, treatment and disposal of COVID-19 waste.
- Do not allow any worker showing symptoms of illness to work at the facility. May provide adequate leave to such workers and by protecting their salary.

(e) Duties of SPCBs/PCCs

- Shall maintain records of COVID-19 treatment wards / quarantine centers / quarantine homes in respective States.
- Ensure proper collection and disposal of biomedical waste as per BMW Rules, 2016 and SoPS given in this guidance document;
- Allow CBWTFs to operate for extra hours as per requirement;
- May not insist on authorisation of quarantine camps as such facilities does not qualify as health facilities. However, may allow CBWTFs to collect biomedical waste as and when required;
- In case of States not having CBWTFs as well as rural or remote areas, not having access to CBWTFs, the existing captive facilities of any hospital may be identified for disposal of COVID-19 waste as per provisions under BMWM Rules, 2016 and these guidelines. This may include permitting use of deep burial pits for disposal of yellow category waste as per standards prescribed in Schedule II of Bio-medical Waste Management Rules, 2016 .^{g1}
- Coordinate with CBWTFs and ULBs in establishing adequate facilities for collection and disposal of COVID-19 waste.
- In case of generation of large volume of yellow color coded (incinerable) COVID-19 waste, permit HW incinerators at existing TSDFs to incinerate the same by ensuring separate arrangement for handling and waste feeding.

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Rev. 2

[e¹Amended in Rev. 2 of guidelines dated 18/04/2020]

(f) Duties of Urban Local Bodies +

Urban Local Bodies are responsible for ensuring safe collection and disposal of biomedical waste, if any, generated from Quarantine Camps/ Quarantine Homes/ Home Care for COVID-19 suspected persons.

- Information on each Quarantine Camps/ Quarantine Homes/ Home-Care should be available with local administration and provide updated list to SPCBs from time to time;
- In case of quarantine camps, ensure that biomedical waste is collected directly by CBWTFs identified by ULB. Waste from quarantine camps to be lifted by CBWTFs on call basis as and when the biomedical waste gets generated. Provide contact details of CBWTF operator at Quarantine Camps;
- Provide necessary support, security including authorisation to staff of CBWTFs;
- ULB shall engage CBWTF operator for ultimate disposal of biomedical waste collected from quarantine home/home care or waste deposition centers or from door steps as may be required depending on local situation; ULB shall make agreement with CBWTF in this regard.
- ULBs envisage following options to facilitate safe collection and disposal of biomedical waste from quarantined homes/Home care;
 - a) Engage authorized waste collectors for door steps collection of biomedical waste and transfer to collection points for further pick-up by CBWTF; and/or
 - b) In case number of quarantined homes/Home-care units are less, ULBs may engage services of CBWTFs to collect the waste directly from door-steps.
- Provide yellow colored bags (designated for BMW) to the persons responsible for operating Quarantine Camp or home-care. If required, such bags may be provided through CBWTF.
- ULBs shall ensure the following in engaging authorized waste collectors at door-steps or at waste deposition centers;
 - o Create a separate team of workers who shall be engaged in door step waste collection at waste deposition centres or at quarantine homes or home care.
 - o Ensure that only designated staff collects biomedical waste from quarantine homes or home care.
 - o Training should be provided for sanitization, about collection of biomedical waste, precautionary measures to handle biomedical waste.
 - o Impart training to waste collector in handling of biomedical waste including methods of sanitization. Training to waste collectors should be arranged through CBWTF operators;
 - o The staff involved in handling and collection of waste from quarantine homes or home care centers shall be provided with adequate Personnel Protective Equipment such as three layer masks, splash proof aprons/gowns, heavy-duty gloves, gum boots and safety goggles. These PPEs are required to be worn all the time while collecting of waste from quarantine center/quarantine homes/home care/waste deposition centres.

Guidelines for Handling, Treatment, and Disposal of Waste Generated during Treatment/Diagnosis/ Quarantine of COVID-19 Patients – Rev. 2

- Use dedicated carts / trolleys / vehicles for transport of biomedical waste. Ensure sanitization of vehicles with 1% hypochlorite after each trip.
- Ensure that, waste collectors arriving at quarantine center or at home care shall spray the disinfectant (1% hypochlorite solution) on the bin used for yellow bag.
- Establish common waste deposition centers (as stipulated under SWM Rules, 2016) for receiving / collection of biomedical waste. For this purpose, existing Dhalaos if any may be converted suitably.
- The general solid waste collected from quarantine homes or home care shall be disposed off as per SWM Rules, 2016.
- Services of Common Biomedical Waste Treatment & Disposal Facilities (CBWTFs) and staff associated with CBWTFs for collection, transportation, treatment and disposal of biomedical waste generated from hospitals including COVID-19 isolation wards, Quarantine Camps, etc. may be considered an essential service as part of health infrastructure.
- Facilitate smooth operations of CBWTFs.
- Local agencies / ULBs may take additional measures considering prevailing ground situations and feasibility, however while implementing such measures requirements outlined in these guidelines should be complied.^{f1}

[* Inserted in Rev. 1 of guidelines dated 25/03/2020]

[^{f1} Amended in Rev. 2 of guidelines dated 18/04/2020]

(g) Management of wastewater from HCFs / Isolation Wards ^{**}

As per the information available at CDC, the risk of transmission of virus that causes COVID-19 through sewerage systems is thought to be low. Transmission to operators may be possible during treatment of sewage treatment plants, however there is no evidence to date that this has occurred. Therefore, following guidance recommended for HCFs and the operators of STPs;

- Responsible agencies are Healthcare Facilities / Isolation Wards / operators of terminal sewage treatment plants (PHED/Jal Board/etc.).
- HCFs and the agencies operating Sewage Treatment Plants should continue to ensure disinfection of treated wastewater as per prevailing practices to inactivate coronaviruses.
- Operators of ETPs/STPs attached with discharge from Healthcare Facilities and isolation wards should adopt standard operational practices, practice basic hygiene precautions, and wear personal protective equipment (PPE) prescribed for operation of STPs. PPEs should include Goggles, face mask, liquid repellent coveralls, waterproof gloves and Rubber boots.
- During the period of COVID-19 pandemic, utilization of treated wastewater in utilities within HCFs may be avoided.

[^{**} inserted in Rev. 2 of guidelines dated 18/04/2020]
