

Central Pollution Control Board
Waste Management Division-I

Status of Contaminated Sites in India

Background

There are several contaminated dumpsites in various parts of country where hazardous and other wastes dumped historically, which resulted in contamination of soil, groundwater and surface water thereby posing health and environmental risks. Most of the contaminated sites created when industrial hazardous wastes disposed by occupiers in unscientific manner or in violation of the rules prescribed. Some of the sites were developed historically when there was no regulation on management of hazardous wastes. In some instances, polluters, responsible for contamination, have been either closed down their operations or the cost of remediation is beyond their capacity, thus the sites remains a threat to the environment.

Contaminated sites may include production areas, landfills, dumps, waste storage and treatment sites, mine tailings sites, spill sites, chemical waste handler and storage sites located in various land-uses. Basic types of contaminated sites are as under;

- "Point" sites, such as dumps of waste or individual contaminated facilities;
- "Area" sites, a site within a broader area of on-going and legacy contamination where the site of concern needs to be addressed in this wider context. An example of this is an individual dump within an industrial area, where there are also other sources of pollution;
- Municipal dumps, which may contain hazardous substances dumped before the municipality gained effective control;
- Brown-fields, which may, or may not, have clear ownership and which have development potential if the contamination problems can be successfully resolved.

Contaminated sites often pose multi-faceted health and environmental problems. Dumping or spillage of hazardous wastes or chemicals would adversely impact/affect the surrounding environment, particularly soil, surface water and groundwater and as result, people in impact zone are knowingly or unknowingly exposed to toxic substances. These sites need to be investigated in detail and thereafter remediation activity should be carried out to reduce human health risks and environmental impacts by adopting appropriate remediation technologies.

Remediation of contaminated sites involves cleaning of contaminated media i.e. soils, groundwater, surface water and sediments by adopting various in-situ or ex-situ clean-up technologies up to a predefined remediation target levels for each identified constituent.

Definitions

As per the guidance document published by MoEF&CC, definition of probably contaminated and contaminated sites is given below:

Probably Contaminated Sites: "Sites with alleged (apparent, purported) but not scientifically proven presence of constituents of contaminants or substances caused by humans at concentrations and characteristics which can either pose a significant risk to human health or the environment with

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regard to present or future land use plan [pattern] or exceeding specific concentrations or standards prescribed for human health and or the environment"

Contaminated Sites: "Contaminated sites are delineated areas in which the constituents and characteristics of the toxic and hazardous substances, caused by humans, exist at levels and in conditions which pose existing or imminent threats to human health and/or the environment".

Brief Summary – Status of Contaminated Sites in India

1. Total No. of Sites covering in 21 states (As submitted before Hon'ble NGT)	291*
2. No. of Probable contaminated sites (Assessment needed)	175
3. No. of Contaminated sites (Confirmed)	116

* Inventory of contaminated sites in India is given at 'Annexure-I'.

Implementation of Assessment and Remediation works

There is limited experience in the country on remediation of contaminated sites. Projects initiated by MoEF&CC under Capacity Building for Industrial Pollution Management Project (CBIPMP) and National Clean Energy Fund (NCEF) helped CPCB and SPCBs to understand the gaps in existing institutional & legal framework and also for deriving an implementation framework by undertaking actual remediation projects as pilot basis.

1.1 Project on Remediation of contaminated dumpsites (containing multiple sites) under National Clean Energy Fund (NCEF)

S.No	State	Name of the Area	No. of Sites	Status
1	Kerala	Eloor-Edayar, Kochi	4	DPRs completed
2	Odisha	Ganjam	3	
3	Odisha	Orichem, Talcher	1	
4	Tamil Nadu	Ranipet	1	
5	Uttar Pradesh	Rania, Kanpur Dehat	2	
6	Uttar Pradesh	IPL & Deva Road, Lucknow	4	
7	West Bengal	Nibra Village, Howrah	1	
8	Madhya Pradesh	Ratlam	4	DPR under progress
Total Sites			20	

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1.2 Projects initiated for detailed site investigation and remediation by responsible parties on directions of SPCBs and Hon'ble NGT

CPCB jointly with concerned SPCBs have regularly monitoring and evaluating the performance of assessment and remediation works:

- i) Oil contaminated site due to leakage of underground oil pipelines of BPCL near Tondiarpet, Tamil Nadu (NGT, O. A. No. 562/2018);
- ii) Pesticides and heavy metals contaminated land and creeks at Eloor, Kerala (NGT O. A. No. 560/2018);
- iii) Chromium contaminated sites at Rania, UP (NGT, O. A. No.200/2014&985-986/2019);
- iv) Disposal of hazardous waste (e-waste processing black powder) lying on the banks of river Ramganga, Moradabad, UP (NGT , O. A. No. 621/2018);
- v) Mercury contaminated soil at Kodaikanal, Tamil Nadu;
- vi) Mercury contaminated sites at Ganjam, Odisha;
- vii) Chromium contaminated sites at Ranipet, Tamil Nadu; and
- viii) Chromium contaminated groundwater at Lohia nagar, UP;
