1. EXECUTIVE SUMMARY

M.P. Pollution Control Board, executed the project entitled ***Bio Mapping of River Narmada***. The project is sponsored by Central Pollution Control Board, New Delhi. Project tenure is of two year w.e.f. May, 2007. Monitoring work was started from October, 2007 with identification of sampling sites in entire river stretch in M.P. Total 30 sampling sites were fixed for monitoring the river.

Eastern Zone cover the river stretch from Amarkantak to Narsingpur with fourteen sampling sites viz., Origin of Narmada (Kund, Amarkantak), Ramghat (Amarkantak), Graveyard (D/S Stop Dam), Kapil Van (Amarkantak), Kapil Dhara (Amarkantak) ,Dindori ghat, Jogi Tikaria (Near Dindori), Raptapul Ghat (D/S Road Bridge), Mandla, Chiri Ghat (Near Mandla), Bargi Reservoir U/S (Near Maikal Resort), Bargi Dam D/S (Jabalpur), Saraswati Ghat (Jabalpur), Jhansi ghat (Shahpura), Barmanghat (Near Narsingpur).

In Central zone the sampling sites were identified at Hoshangabad region with eight sampling locations viz., Ram Mandir (Bandrabhan), Jarrapur (Near Budni), Tawa river, Tawa confluence, Goalgaon (Near Budni Ghat), Mangalwara Ghat (Hoshangabad), SPM Nalla U/S(Hoshangabad), SPM Nalla D/S (Hoshangabad)

Western Zone covers the area of Malwa region and eight sampling sites were identified namely U/S Omkareshwar Dam , Nagarghat D/S Omkareshwar dam, Mamleshwar ghat D/S Omkareshwar dam, Khedighat (Mortakka), Mandleshwar, D/S Dam, MPT Hotel (Maheshwar), Rajghat (Badwani), Koteshwar ghat (Nisarpur).

Monitoring of Physico chemical component and Biological parameters like identification of macro invertebrates were carried out from the above sampling sites. Collection of samples for analyzing these components was as per standard methods. Analysis data were compiled and discussed in detail in the project report. It is revealed that the quality of river water based on physico-chemical analysis is classified in class A to D as per BIS 2296 [1982] at different sampling locations with Class B & C in most of the sampling points classified the water used for out door bathing and other recreation use. The water can also be used for domestic use after treatment and disinfection.

Biological Water Quality Criteria [BWQC] used for evaluating water quality based on identification of macro invertebrate families and awarding a specific diversity score and designate the quality from class A to E [from least to severe pollution respectively] .

In Eastern Zone at origin of river at Amarkantak the biological water quality did not support benthic macro-invertebrates due to lack of any substratum. In subsequent sampling locations the quality of water classified in class B-C based on BWQC score. Deterioration of water quality mainly due to anthropogenic activities within and around the river bed. At one location Kapilvan of Amarkantak region observed class D during January, 2009.

In Central Zone, the biological water quality of the river classified in class B-C. The reason for the degradation of water quality is mainly due to human activities which includes mainly religious, recreational and agricultural. Confluence of domestic effluent is affecting water quality of river.

In Western Zone the BWQC score designate the quality of river water in class B-C at all the sampling location. Sampling site at Raptapul ghat in Mandla showed class A at during November, 07 and Oct, 08,

the reason for improved water quality at this region is mainly due to riffle zone. River water at Saraswati ghat showed class D during November, 2007 indicating heavy pollution. The quality of water at this location improved in April, 2008 due to large volume of river water during the sampling time.

During the entire monitoring of river Narmada, in all the three zones at 30 monitoring sites the quality of water classified at most of the sampling locations from Class B to C based on BWQC score indicate ***river water quality as slight to moderate pollution***.