

DESIGNATED BEST USE CLASSIFICATION OF STREAMS

1. DESIGNATED BEST USE (Definition)

In preparing use-map for a river the problem arises, when the segment of a river has more than one use that which use is to be designated to it. A Designated Best Use Classification of Streams was evolved by the Central Board in its report entitled Scheme for Zoning and Classification of Indian Rivers, Estuaries and Coastal Waters (ADSORBS/3/1978/-79).

The Central Board classified the inland surface waters into five categories (A to E) on the basis of designated-best-use. The principal concern here is the end use to which the water may be put to by man. The classification has been made in such a way that the water quality requirement becomes progressively lower from A to E. Besides, the water quality of any one of the five categories also satisfies the requirements of categories lower than the chosen one. An area or stretch of a body may be subjected to a number of uses. The area or the stretch is designated by that particular use which demands the highest/purest quality is the best possible way the Designated-best-use can be defined. The existing quality status is not the guiding factor. The quality based use of this stretch of the river may belong to a lower category (ADSORBS/4/1980-81). The limits of tolerance adopted by the Indian Standards Institution (1982) for the five categories were in a slightly modified form of the Central Board's parameters. The system of classification based on designated-best-use for fresh and saline waters are quoted below (ADSORBS/2/1980-84,/4/1980-81 AND/7/1983-84) :

FRESH WATERS

Designated best uses	Classifications
Drinking water source without conventional treatment but after disinfection	A
Outdoor bathing, swimming and water contact sports.	B
Drinking water source with conventional treatment followed by disinfection	C
Propagation of wild life and fisheries.	D
Irrigation, industrial cooling and controlled waste disposal	E

PRIMARY WATER QUALITY CRITERIA

Designated Best Use	Class of Water	Criteria
Drinking Water source without conventional treatment but after disinfection	A	<p>1. Total coliform organisms MPN/100 ml shall be 50 or less. Note : If MPN count is noticed to be more than fifty then regular Tests should be carried out. The criteria would be satisfied if during a period of time not 1 more than 5% of the samples show greater than 200 MPN/ 100 ml and not more than 20% of samples show more than 50 MPN/ 100 ml.</p> <p>2. pH: between 6.5 and 8.5</p> <p>3. Dissolved Oxygen 6 mg/1 or more.</p> <p>4. Biochemical Oxygen Demand (5-day at 20⁰C):2 mg/1 or less.</p> <p>Note : There shall be no visible discharge of domestic and industrial wastes into class A.</p>
Outdoor bathing, (Organized)	B	<p>1. Total coliform organisms (MPN/100 ml shall be 500 or less. Note : If MPN count is noticed to be more than 500 MPN/100 ml then regular tests should be carried out. The criteria would be satisfied if during a period of time not more than 5% of the samples show greater than 2000 MPN/100 ml and not more than 20% of samples show greater than 500 MPN/100 ml</p> <p>2. pH: between 6.5 and 8.5</p> <p>3. Dissolved Oxygen: 5 mg/1 or more.</p> <p>4. Biochemical Oxygen Demand (5-day at 20⁰C):3 mg/1 or less.</p> <p>5. Note : All domestic and industrial wastewater discharge upstream of bathing places shall be so regulated that the stream standards are maintained and that there is no visible floating matter including oils at the bathing places.</p>
Drinking water source	C	<p>1. Total coliform organisms (MPN/100 ml shall be 5000 or less.</p>

		<p>Note : If MPN count is noticed to be more than 5000 MPN/100 ml then regular tests should be carried out. The criteria would be satisfied if during a period of time not more than 5% of the samples show greater than 20,000 MPN/100 ml and not more than 20% of samples show greater than 5000 MPN/100 ml</p> <ol style="list-style-type: none"> 2. pH: between 6 and 9 3. Dissolved Oxygen: 4 mg/l or more. 4. Biochemical Oxygen Demand (5-day at 20⁰C):3 mg/l or less. 5. Note : All domestic and industrial wastewater discharge into Class C waters shall necessarily be treated to ensure maintenance of stream standards are and the discharge points shall be kept sufficiently away form the abstraction points.
Propagation of wild life, fisheries	D	<ol style="list-style-type: none"> 1. pH: between 6.5 and 8.5 2. Dissolved oxygen: 4mg/l or more. 3. Free Ammonia (as N): 1.2 mg/l or less
Irrigation, industrial cooling and controlled waste	E	<ol style="list-style-type: none"> 1. pH: between 6.0 to 8.5 2. Electrical conductivity at 20⁰C/mho/cm:Max 2250 3. Sodium Absorption Ratio : Max 26. 4. Boron : Max 2 mg/l.

source : Water Quality Atlas of India (June 1994) Prepared by CPCB