### ****Methodology for Converting Far Unsuitable Data into Suitable Data****

To improve water quality and make the ‘Far Unsuitable’ data points suitable, we will follow a step-by-step process. This method ensures smooth changes while keeping the values realistic.

#### ****1. Finding the Problem Areas****

First, we need to check which water quality parameters are not within the suitable range. We will compare the values of the far unsuitable data with the threshold values of suitable data. This will help us understand which parameters need to be improved.

#### ****2. Gradual Improvement of Parameters****

Instead of making sudden changes, we will gradually adjust the values of the parameters that are outside the suitable range to ensure the modifications remain realistic. One way to do this is through scaling and normalization, where we slowly shift the values closer to the suitable range while maintaining their original patterns. Another approach is interpolation and averaging, where we use nearby data points, such as those from the close unsuitable or overlapping categories, to estimate better values for the parameters that need adjustment. Additionally, we can apply mathematical techniques, such as statistical formulas, to modify the values without disturbing their natural relationships. These gradual changes will help transform the far unsuitable data into suitable data in a logical and effective way.

#### **3. Using Clustering to Guide Adjustments**

The clusters we previously created (close unsuitable, far unsuitable, and overlapping) will help us decide the best way to make changes. By studying the ‘close unsuitable’ cluster, we can determine how to shift the far unsuitable data toward suitability.

#### **4. Using Machine Learning for Better Adjustments**

We can use machine learning techniques, like regression models, to predict how each parameter should be changed. These models will help us make smart adjustments without disturbing the overall data pattern.

#### ****5. Checking and Refining the Data****

Once we make the changes, we will check if the modified data falls within the suitable range. If some values are still not suitable, we will fine-tune the process until the far unsuitable data successfully becomes suitable.