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Testing method for detection of iron bacteria in industrial water

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Industrial Water Association (JIWA)/Japanese Standards Association (JSA), with a draft of Industrial Standard based on the provision of Article 12 Clause 1 of the Industrial Standardization Law. Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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In the event of any doubts arising as to the contents,
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Testing method for detection of iron bacteria in industrial water

1 Scope This Japanese Industrial Standard specifies the testing method for judgement of existence of iron bacteria in industrial water qualitatively by using a microscope.

2 Normative references The standards listed in attached table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) shall be applied.

3 Definitions For the purposes of this Standard, the definitions given in **JIS K 0101**, **JIS K 0102**, **JIS K 0211**, **JIS K 0550** and the following definition apply.

3.1 iron bacteria the generic term of bacteria which inhabit widely in ground water and undercurrent water containing much iron component and have such properties that iron (II) or its compound is oxidized to iron (III), and accumulated in the inside of bacteria form and precipitated on the outside of bacteria form

Remarks : Iron bacteria, which is brown cell and the precipitation form is different in every genus, has the characteristic to form a particular external form. These external form can be directly judged by confirming by using microscope. For the representative, the following two geneses are given.

Gallionella ferruginea shows generally a twisted ribbon shaped external form of 1 μm to 1.5 μm in width and the cell of iron bacteria exists at its tip. For *Leptothrix ochracea*, long bacilli stand in a line in long linear sheaths of approximately 2 μm in width. In addition to this, several kinds of iron bacteria with characteristic external form have been reported.

The propagation of iron bacteria causes the various obstacles such as the production of brownish rusty water or slime, the blockage of filtration layer in water purifying process.

4 Common matters The common matters shall be as follows:

4.1 Glassware The glassware, which are specified in **JIS R 3503** and **JIS R 3505**, shall be generally used. When special instruments are required, an example of it is illustrated or explained respectively.

5 Sample

5.1 Sampling

5.1.1 Reagents The reagents shall be as follows: