Monitoring Corrosion in Oil and Gas Production with Iron Counts

Monitoring Corrosion in Oil and Gas Production with Iron Counts

This AMPP standard represents a consensus of those individual members who have reviewed this document, its scope, and provisions. Its acceptance does not in any respect preclude anyone, whether he or she has adopted the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not in conformance with this standard. Nothing contained in this AMPP standard is to be construed as granting any right, by implication or otherwise, to manufacture, sell, or use in connection with any method, apparatus, or product covered by Letters Patent, or as indemnifying or protecting anyone against liability for infringement of Letters Patent. This standard represents minimum requirements and should in no way be interpreted as a restriction on the use of better procedures or materials. Neither is this standard intended to apply in all cases relating to the subject. Unpredictable circumstances may negate the usefulness of this standard in specific instances. AMPP assumes no responsibility for the interpretation or use of this standard by other parties and accepts responsibility for only those official AMPP interpretations issued by AMPP in accordance with its governing procedures and policies which preclude the issuance of interpretations by individual volunteers.

Users of this AMPP standard are responsible for reviewing appropriate health, safety, environmental, and regulatory documents and for determining their applicability in relation to this standard prior to its use. This AMPP standard may not necessarily address all potential health and safety problems, or environmental hazards associated with the use of materials, equipment, and/or operations detailed or referred to within this standard. Users of this AMPP standard are also responsible for establishing appropriate health, safety, and environmental protection practices, in consultation with appropriate regulatory authorities, if necessary, to achieve compliance with any existing applicable regulatory requirements prior to the use of this standard.

CAUTIONARY NOTICE: AMPP standards are subject to periodic review and may be revised or withdrawn at any time in accordance with AMPP technical committee procedures. AMPP requires that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of initial publication and subsequently from the date of each reaffirmation or revision. The user is cautioned to obtain the latest edition. Purchasers of AMPP standards may receive current information on all standards and other AMPP/NACE/SSPC publications by contacting AMPP Customer Support, 15835 Park Ten Place, Houston, Texas 77084-5145 (Tel: +1-281-228-6200, email: customersupport@ampp.org).

Document History

2023-06-15: Revised by AMPP Standards Committee (SC) 20, Internal Corrosion Management

2012-03-10: Revised by NACE Task Group (TG) 373, “Monitoring Corrosion in Oil and Gas Production with Iron Counts”

January 1998: Revised by NACE Unit Committee T-1D, “Corrosion Monitoring and Control of Corrosion Environments in Petroleum Production Operations”

January 1992: Approved as RP0195 by NACE TG T-1C-7, a component of Unit Committee T-1C, “Detection of Corrosion in Oilfield Equipment”

AMPP values your input. To provide feedback on this standard, please contact: standards@ampp.org

Monitoring Corrosion in Oil and Gas Production with Iron Counts

Foreword

For several years, NACE Task Group (TG) T-1C-7, “Iron Determination,” examined the problems and successes experienced by oil-producing companies and service companies using iron counts as a corrosion-monitoring method and determined that iron counts on wellhead samples may provide information on the existence of downhole corrosion and the effectiveness of inhibitor treatments. Iron counts may also give information on the corrosion activity in flowlines in waterflood systems and oil-production operations.

Scope

This standard practice describes the use of iron counts as a corrosion-monitoring method and some common problems encountered when using this method. This standard is a guide for those designing corrosion-monitoring programs as well as those carrying out the programs in the field.

Rationale

During the review of the previous revision of this document, it was observed that the document lacked guidelines regarding the conversion of iron count number to corrosion rate. The corrosion rate number provides easy data interpretation and possible actions. The end user will be able to establish key performance indicators using the corrosion rate thus established for the system based on the trends.

Other changes in this revision include:

- Added recommendation to ensure the sampling collection metallurgy for equipment in sour service is compliant with ANSI/NACE MR0175/ISO 15156.
- Replaced Figure 2 with a clearer version.

Referenced Standards and Other Consensus Documents

The latest edition, revision, or amendment of the referenced documents in effect shall govern unless otherwise dated.

AMPP/NACE/SSPC, www.ampp.org:	
ANSI/NACE MR0175/ISO 15156	Petroleum and Natural Gas Industries — Materials for Use in H_2S-containing Environments in Oil and Gas Production
NACE Publication TPC 5	Corrosion Control in Petroleum Production
American Petroleum Institute (API), www.api.org:	
RP 54	Occupational Safety for Oil and Gas Well Drilling and Servicing Operations
RP 45	Recommended Practice for Analysis of Oilfield Waters
ASTM International, www.astm.org:	
ASTM D1068	Standard Test Methods for Iron in Water
ASTM D858-90	Standard Test Methods for Manganese in Water