

SUMMARY

STUDI LITERATUR SISTEM PENGENDALIAN KOROSI DENGAN PROTEKSI KATODIK PADA PIPA DALAM TANAH

LITERATURE STUDY OF CORROSION CONTROL SYSTEM WITH CATHODIC PROTECTION FOR UNDERGROUND PIPELINE

Created by Tri Mariyati Supiin

Subject : Karat dan anti-karat

Keyword : Korosi ; Proteksi Katodik ; Anoda Korban ; Arus Terpasang ; Pipa dalam Tanah.

Description :

Penggunaan logam pada pipa distribusi air minum yang berdiameter lebih dari 650 mm pada jaringan perpipaan dalam tanah, menimbulkan masalah baru terhadap pemakaian logam itu sendiri, yaitu masalah korosi. Metode utama untuk mengendalikan korosi pada pipa dalam tanah adalah dengan penggunaan lapis lindung dan sistem proteksi katodik, baik dengan sistem anoda korban maupun arus terpasang.

Studi literatur dilakukan melalui eksplorasi berbagai literatur, seperti: buku teks, artikel, laporan, modul, internet, maupun jurnal penelitian. Studi kasus diambil dari kondisi riil penerapan sistem proteksi katodik yang ada di lapangan, dilakukan evaluasi dan analisa terhadap teknik pengendalian korosi yang ada, berdasarkan data penunjang yang didapat dan studi literatur yang telah dilakukan. Kasus yang diangkat adalah permasalahan penerapan desain proteksi yang kurang tepat pada Instalasi Penjernihan Air Minum Karang Pilang-Reservoir Pulat Gede dengan sistem anoda korban dan sistem arus terpasang pada pipa induk distribusi air bersih di Jalan Rajawali-Kapasan.

Dari data dan hasil perhitungan, pada Instalasi Penjernihan Air Minum Karang Pilang-Reservoir Pulat Gede membutuhkan anoda Mg yang baru sebanyak 216 buah dengan biaya Rp. 262.066.350,00 dan pipa induk distribusi air bersih di Jalan Rajawali-Kapasan membutuhkan anoda besi silikon kromium sebanyak 1 buah dengan biaya Rp. 17.949.750,00.

Description Alt:

Metal usage for water distribution pipe which has diameter more than 650 mm in the underground pipeline, gives new problem for the usage of metal itself, is corrosion problem. Primary method to control the corrosion for pipeline underground is using the coating and cathodic protection system, sacrificial anode as well as impressed current.

Literature study has done by exploring many kind of literature, like text book, article, report, module, internet, and research journal. Case study is taken from the real condition of cathodic protection system application in the field, evaluation and

analysis instead of corrosion control, based on support data and literature study. The case is about the problem of inappropriate protection design application in Karang Pilang Water Purity Installation-Reservoir Pulat Gede with using sacrificial anode and in main water distribution pipeline of Jalan Rajawali-Kapasan which using impressed current system.

Based on the data and result calculation, the need of new Mg anode are about 216 pcs with amount about Rp. 262.066.350,00 in Karang Pilang Water Purity Installation-Reservoir Pulat Gede and one pc of high silicon cast iron with amount about Rp. 17.949.750,00 in main water distribution pipeline of Jalan Rajawali-Kapasan.

Contributor : Ir. Hari Wiko Indaryanto, MEng.
Date Create : 15/11/2008
Type : Text
Format : pdf.
Language : Indonesian
Identifier : ITS-Undergraduate-3100008031617
Collection : 3100008031617
Call Number : RSL 620.112 23 Tri s
Source : Undergraduate theses, DEPARTMENT OF ENVIRONMENTAL ENGINEERING RSL 620.112 23 Tri s, 2008
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Thank You,

Nur Hasan

