

Rami Izhiman

From: Khalil- CORTEC ME <kabed@cortec-me.com>
Sent: Monday, August 19, 2013 1:28 PM
To: amalik@swcc.gov.sa
Cc: lyad Alami
Subject: Cortec Corrologic technology for protection of tank bottoms
Attachments: FAILURE ANALYSIS OF BOTTOM PLATE OF POTABLE WATER TANK (SWCC).pdf; 63-CP-10 - Evaluation of Cathodic Protection System Criteria by KOC.PDF; 2242 Mitigating Soil-Side Corrosion on Crude Oil Tank Bottoms Using Vol....pdf; MP Article on AST's June 2011.pdf

Tracking:	Recipient	Read
	amalik@swcc.gov.sa	
	lyad Alami	Read: 8/19/2013 1:37 PM

Dear Mr. Malik,

Further to the telephone conversation we have just had regarding the above attached technical paper that you co-authored in 2005, I would like to thank you for your interest in Cortec CorroLogic® system for mitigation of soil side corrosion of Aboveground Storage Tank bottoms.

Cortec VpCl® Technology is cost effective and practical. It can be applied on CP protected and unprotected new tanks, in-service tanks and also out of service tanks. We also have design solutions for the tanks that have oily/bituminous sand and asphalt pad beneath the floors and can innovate different systems as needed . Our Corrosion Engineering and Field services (CEFS) team has a long history and strong track record in successfully implementing this technology in the united states for more than 300 tanks and more recently in the Middle East. Our Technology is comprehensive and includes a system for introducing the VpCl®, a system for monitoring the corrosion rate and a system for future replenishment, when needed.

In this regard, I would like to share with you couple of technical articles that discuss the challenges of CP systems in providing the anticipated protection for the tank bottoms and the positive impact of using Vapor phase corrosion inhibitors for this application.:

1. **“Evaluation of the Tank Bottom Corrosion and CP Effectiveness at Saudi Aramco Crude Oil Tank Farm”**. The paper highlights the inevitable reason for the malfunctioning of CP in some areas of the tank bottom, which is the gaps between the bottom plates and the sand due to foundation settlement, high density repair patches and the filling-refilling cycles. Other reasons also thought to exacerbate soil side corrosion are; the use of the oily sand and ingress of moisture/water from the periphery of the tank. The use of Vapor phase Corrosion Inhibitors is one of the recommendations in this paper.
2. **Mitigating Soil-Side Corrosion on Crude Oil Tank Bottoms Using Volatile Corrosion Inhibitors**”. This NACE paper describes a pilot project that was conducted in 2011 on an aboveground storage tank (AST) at Saudi Aramco crude oil tank farm. This project was designed to evaluate the procedures for application of volatile corrosion inhibitor VpCl® beneath selected areas of the tank floor and then evaluate the effectiveness of the VpCl® in reducing the corrosiveness of the environment under the tank floor.
3. **Material Performance article on ASTs**: This article describes VpCl® chemistry and presents several case histories of VCI usage in these spaces. It also shows how the application of vapor phase corrosion inhibitor VpCl®

chemistry, combined with a corrosion rate monitoring system, provides an excellent method to mitigate and monitor corrosion within the interstitial spaces of aboveground storage tank bottoms.

I hope to follow this email with a meeting next week at your office to discuss further details about this technology and how SWCC can benefit from it in extending the service life of the tanks and minimize the cost associated with maintenance.

Looking forward to hearing from you soon.

Regards,

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