

Izzo, Victor@Waterboards

From: Amanda Ludlow <aludlow@rouxinc.com>
Sent: Thursday, January 03, 2013 1:26 PM
To: Izzo, Victor@Waterboards
Subject: ENS for Sulfates and some low metals

Victor,
I apologize for not getting back to you before the holidays, but I wanted to get you the information for sulfate and arsenic removal. I took a look at your data and conceptualized a natural media filter (NMF) composed of compost plus an iron amendment (still will need to identify if the local slag is an option based upon leachability). For the NMF to operate for 10 years, the size of a system would be about 1-acre with about 4 vertical feet of the compost media for every 20gpm. This translates to less than \$1MM in construction and design costs. If you want to run the filter longer, it just makes the NMF bigger. I think it would be cheaper to replace the compost mixture when it is exhausted than to make the system bigger. I wouldn't size the system for less than 5 years based upon the HRT needed to precipitate the sulfate, so costs could go down to \$500k.

Feel free to give me a call if you want to discuss further.

Thank you,

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From: "Izzo, Victor@Waterboards" <Victor.izzo@waterboards.ca.gov>
Date: December 11, 2012, 11:09:35 AM PST
To: "abayley@rouxinc.com" <abayley@rouxinc.com>
Subject: ENS for Sulfates and some low metals

Hi Mr. Bayley

I work for the California Regional Water Quality Control Board and I received some of your company literature on ENS from Peter Graves of BLM. We are trying to find a remedial technology that works to