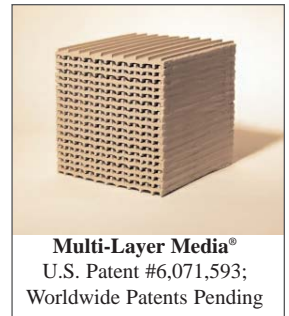


Multi-Layer Media Solves Plugging and Pressure Drop Problems. Saves \$100,000 per Year Over Five Years Operating Experience at Hatfield WWTP

Introduction

The waste water treatment plant at Hatfield, PA has a RTO (regenerative thermal oxidizer). This unit is needed to destroy VOC (volatile organic compound) and other odor causing compounds that would otherwise escape into the atmosphere from a multiple hearth incinerator at the site. This RTO treats 8,000 scfm of air and is a typical three canister design. The canisters originally contained 8 ft each of 1" ceramic saddles as heat recovery media.



This RTO was a maintenance headache with saddles. Pressure drop across inlet / outlet of the RTO was approximately 9 in WC when the saddles were first installed. Pressure drop quickly rose after saddle installation to 20 in WC inlet / outlet. This increase would take place every 10 to 14 days. The frequent wash outs required as a consequence of this rapid pressure drop increase were extremely expensive due to the extensive overtime pay involved. The frequent washes were also less than totally effective, as pressure drop of clean, new saddles was never achieved.

Retrofit to MLM, July 1998

In July of 1998 the saddles in the RTO unit at Hatfield were replaced with 4 ft of MLM-180 supplied by Lantec Products. The results of the retrofit were remarkable:

Hatfield WWTP RTO Retrofit Results

1. The inlet / outlet pressure drop fell to less than 4 in WC as a result.
2. There was no loss in thermal efficiency (~ 95%).
3. Wash events every two weeks or less were replaced with washes three to four times per year.
4. Additionally, after washing MLM, the original low pressure drop was restored.
5. Power Reduction + Labor Savings = \$100,000 per year³

Comparison: Five year old saddles vs. Five year old MLM



MLM installed August 1996. Photo taken 2002²

1. Photo supplied courtesy of Fitchburg, Massachusetts WWTP.
2. RTO in San Bernadino, CA, of special note - this RTO continues to operate with MLM in 2004 as when photo was taken in 2001, or as when first installed in 1996.
3. Cost of 26 washes per year, vs. cost of 4 washes per year, plus power savings.
4. Pete Dorney, Executive Director, 3600 Advance Lane, Hatfield, PA 18915, 215-822-1869 (fax), 215-822-9300 (phone)



New Saddle (Insert) contrasted with Saddles after five years RTO service¹

MLM 5+ Years Service: Pressure Drop Remains Low

As previously mentioned, when the RTO contained saddles, the pressure drop over time was observed to 'creep' upward despite frequent washing. This is a common phenomenon of saddles and other random dump heat recovery medias.

This affect does not exist with MLM, please note the following data, supplied courtesy of the Hatfield WWTP.⁴

Recent RTO Pressure Drop Data - Hatfield WWTP

Wash Date	Inlet / Outlet Pressure (in WC) Drop	
	Before Wash	After Wash
12/22/02	14 in	4.3 in
3/15/03	16.7	4.6
6/15/03	13.1	4.0
11/15/03	11.2	5.0
2/7/04	11.2	3.7

Conclusion

The remarkable ability of MLM to resist fouling in a well maintained and operated RTO has now been demonstrated at Hatfield for an extended period of time. Switching media in an RTO to MLM can result in profound savings in operation and maintenance costs.