

1/25/2012

## Summary

FreshAWL was invited to the Mel Leong Industrial Waste Treatment Plant (MLTP) to introduce FreshAWL® WOW-Air™ for the purpose of better resolving their high levels of aerobic H<sub>2</sub>S at the treatment system head-works with a green sulfide scavenger. The MLTP and the San Francisco Public Utilities Commission (SFPUC) were researching cleaner and more effective alternatives to their treatment methodologies already in place. In addition the WOW-Air was considered because it would not adversely affect any of the plant treatment systems or the NPDES.

During the plant pre-assessment tour and WOW-Air pre-test demonstration the MLTP staff took aerobic readings from the head works which measured as high as 18 ppm at the influent and 14 ppm at the bottom of the open air access stairwell. After demonstrating the intended results, the MLTP invited the SFPUC to take part in the onsite system treatment demonstration.

## Introduction

FreshAWL solutions have a proven record of eliminating greater than 90% of H<sub>2</sub>S and mercaptans. This is possible by inhibiting the activity of sulfur reducing bacteria while encouraging the performance of beneficial bacteria.

Given the history and influent levels which flow at a rate of .5 mgd, it was estimated that the MLTP would require a minimum daily treatment schedule of 80 gallons/day of WOW-Air to maintain H<sub>2</sub>S emissions within compliance. For demonstration purposes, treatment of the head-works was made by direct injection of WOW-Air using a peristaltic pump drip system. WOW-Air was set up to drip into influent flow stream just prior to it reaching the head-works at a rate of 1 ½ gallons per hour (36 gpd) to prevent cascading odors from off-gassing. This kept H<sub>2</sub>S odor from escaping the area and maintained a continued down-line performance of sulfur scavenging. H<sub>2</sub>S ppm levels were monitored over a one (1) hour period at five (5) minute intervals from five (5) different locations to determine that the prescribed amount of WOW-Air performed as expected. Locations ranged from influent source outward.

By using FreshAWL solutions in hydrocarbon treatment systems there are additional value benefits of:

- Reduction of the mercaptan along with H<sub>2</sub>S and sulfur compounds in RHS kerosene
- Corrosion inhibition
- Improved environmental impact through use of non-toxic treatments
- Safety of non-hazardous chemical usage and storage

This pilot-test would demonstrate that FreshAWL solutions will eliminate H<sub>2</sub>S and mercaptan control for the entire MLTP system and maintain control within compliance for all permits and regulations.

## Conclusion

This onsite demonstration was able to effectively show the ease of treatment and remarkably fast results for the complete elimination of measurable H<sub>2</sub>S utilizing FreshAWL WOW-Air. Members of the SFPUC were onsite to witness each step (see photos, page 2) of the WOW-Air application and to participate in the use of their own meters for measuring the H<sub>2</sub>S and odor elimination data. Readings were taken during periodic measurements spread over a 1 hour period beginning at 10:00 am (see DATA RESULTS, page 3). Results show an 18 ppm reduction in less than 45 minutes. There was an increase that occurred 10:23 AM from a sideline influent inflow that comes from the SFO airport which was not planned for. It was agreed by the both the MLTP and SFPUC participants that the results were significant enough to recommend FreshAWL solutions as a viable alternative for further review and possible treatment consideration for future consideration.



Mel Leong Industrial Waste Treatment Plant



Infusion of FreshAWL WOW-Air via peristaltic pump drip



MLTP Headworks where pre-test H<sub>2</sub>S aerobic readings averaged 14-18 ppm



FreshAWL and SFPUC have utilized H<sub>2</sub>S meter with ability to read from 0.0 to 50 ppm or greater are cross checking data results at end of test.

**MLTP DATA RESULTS**

Sample #	Baseline	1	2	3	4
Time	10:11	10:16	10:23	10:26	10:53
H <sub>2</sub> S ppm	18	9.4	10	5.5	0