

South Huron Valley Utility Authority (SHVUA) WWTP Molybdenum SAL



Annual IPP Seminar
September 18, 2014

Plant Background

- ▶ Originally 12 MGD Plant Built 1987.
- ▶ Expanded to 24 MGD ~1999
- ▶ Average Flow 10 MGD
- ▶ 10 Industries - 0.62 MGD
- ▶ 4 Permitted Industries are Landfills
- ▶ 1 Includes Hazardous Waste Leachate

SHVUA RMP History

1987–1999 Sludge was incinerated & land filled

1998 SHVUA formed and purchased treatment plant & collection system

1999 Earth Tech awarded O & M contract

1999–2000 Biosolids storage increased from 1.5MG to 4.0MG

2000 Began land application of biosolids

SHVUA Molybdenum History

- ▶ Molybdenum first appeared in November 2005 in one of four biosolids storage tanks @ 95 mg/kg
- ▶ 2006 sampling for molybdenum in plant influent and effluent. Also sampled each SIU and required self monitoring for molybdenum
- ▶ Molybdenum in two of the four storage tanks in November 2006 @ 83 mg/kg

SHVUA Molybdenum History

- ▶ 2007 Determined that six of the then 12 SIUs contributed various amounts of molybdenum loading
- ▶ 2007 Worked with SIUs to reduce or eliminate molybdenum in discharges to SHVUA WWTP
- ▶ Efforts to reduce Molybdenum helped achieve the goal of Biosolids that could be land applied

HOWEVER...


How to Regulate?????

- ▶ SHVUA MAHL for Molybdenum = 5.64 lbs/day
- ▶ SHVUA MAIL for Molybdenum = 5.48 lbs/day
- ▶ Uniform Allocation Limit Would Have Been:
1.06 mg/L

WAYNE DISPOSAL

- ▶ Invested in an advanced Membrane Bioreactor Treatment System
- ▶ Prior to MBR Average Mo = 5.86 mg/L With Several Results > 7 mg/L
- ▶ After MBR 3.74 mg/L With very few Results > 7 mg/L
- ▶ Hired an excellent specialist in Local Limits Development to contend the limit of 1.06 mg/L
- ▶ SHVUA Local Limit Development of the MAHL, MAIL and UNIFORM Limit was spot on!

A Win/Win Proposal


- ▶ Since Only Half of the Industries Discharge Mo the Idea of a SAL for Mo was proposed.
 - ▶ MDEQ was fine with it so long as...
 - ▶ The legal authority to use SALs is in SUO – CHECK
 - ▶ Written procedures are Approved by MDEQ – CHECK
 - ▶ Total influent mass cannot exceed MAHL – CHECK
 - ▶ Allocated Mass cannot exceed MAIL – CHECK
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MOLYBDENUM ALLOCATION TABLE

Table 1 : LOCAL LIMIT DETERMINATION – Special Allocation of Molybdenum Loading

Industrial Users Regulated for Total Mo ^a	Avg. Mo Discharged (mg/L)	MAX Mo Discharged (mg/L)	Average Mo Discharged (lb/day)	MAX Mo Discharged (lb/day)	Proposed Mo Loading Limits (lb/d) ^b	~[Mo] at Proposed Permit Limits (mg/l) ^c
Wayne Disposal (WDI)	3.739	11	1.744	5.554	3.5	7.72
Flat Rock Metals	0.334	0.69	0.013	0.061	0.2	4.70
FMC–Michigan Casting	0.407	0.61	0.051	0.1	0.2	1.62
Auto Alliance	0.01	0.016	0.038	0.064	0.2	0.05
Huron Monofill	0.021	0.034	0.001	0.002	0.1	1.99
Quala Services, LLC	0.015	0.083	0.001	0.008	0.1	1.22
Ford Woodhaven Stamping	0.005	0.016	0.001	0.003	0.1	0.46
Grand Trunk Railroad	< 0.001	< 0.001	< 0.001	< 0.001	0.02	0.45
Fons Landfill	< 0.001	0.001	< 0.001	< 0.001	0.02	0.13
Marathon					0.02	0.05
Arsenal Road					0.4	
RESERVED	----	----	----	----	0.07	----
Total	----	----	1.85	----	4.93	----

SHVUA APPROACH

- ▶ Influent and Effluent Molybdenum Tested Quarterly – Verifies below MAHL and Removal Rates
 - ▶ Prepared to adjust each Industry's Share as needed
 - ▶ Legal Authority to Revoke SAL if it is not protective of the plant.
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SAL as Defined in SUO

- ▶ **SPECIAL ALLOCATION**
- ▶ Method of determining discharge limitations for specific pollutants where a minority of the SIUs discharge the majority of a given pollutant. This method will be applied at the sole discretion of the SHVUA. Upon applying this method, neither the MAIL nor the MAHL established for the POTW for a given pollutant may be exceeded assuming all SIUs are discharging at their allocated limit.

▶ **QUESTIONS????**