



The Solution to Air Compliance

**LA DEQ
GREEN CONFERENCE**



DISCUSSION OVERVIEW

- VAPOR POINT MISSION
- THE VAPOR POINT TECHNOLOGY
- SUCCESSFULLY ENGINEERED APPLICATIONS
- FIELD DATA = DEMONSTRATED SUCCESS
- CASE HISTORY – COST ADVANTAGES
- VAPOR POINT ADVANTAGES

VAPOR POINT MISSION

- Create GREEN TECHNOLOGY– No NO_x/CO Emission
- Answer to industries' emission compliance issues when Carbon, Thermal Combustion and Flaring are not viable operationally and/or economically
- Provide Turn-Key Solution for Emission Compliance
 - Fugitive VOC Emissions
 - H₂S and other hazardous compounds
 - Air Monitoring and Data Logging

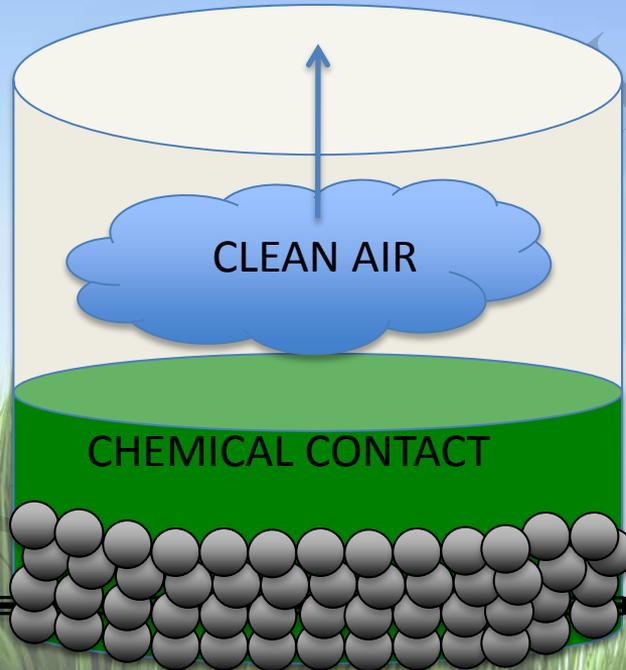
Vapor Point _ Vapor Lock

- Keys to Effectiveness
 - Reaction Chamber Design – creating “Hydraulic Amalgamation” between vapor and recovery chemistry
 - NOT a Traditional Scrubber
 - **PATENTED PROCESS FOR VAPOR RECOVERY**
 - Proprietary Chemistry (Modified based on Application)
 - Dynamic capability [absorptive, adsorptive, solubility]
 - **Recyclable Chemistry**
 - **Recoverable and Reusable Contaminate Gas**
 - Operational Effectiveness
 - No Power Requirements (In positive pressure applications)
 - No Heat Generation or Reactivity
 - Ease of Mobility
 - Ease of Adaptability
 - No Waste Generated or Left Behind
 - Can achieve 100% regulatory compliance

Vapor Lock Process

Contaminated Vapor delivered to Vapor Lock, flow stream requires a minimum of 5 inches water column, plus back pressure resulting from liquid level height.

DIRTY AIR



VAPOR LOCK TECHNOLOGY HAS BEEN ACCEPTED BY TCEQ AND EPA AS A SOLUTION FOR MANAGING AIR COMPLIANCE CONCERNS

Vapor Lock Hydraulic Amalgamation Units



Current Focus

- Industrial Applications

- Vacuum Trucks/Air Movers
- Process Sumps/API Separators
- Process Unit Blow Downs
- Storage Tank Vents/Bladders
- Pipeline Maintenance
- Mobile Frac Tanks

***Successfully
Developed***

- Large Degassing Operations
- Upstream Oil & Gas Tanks
- Barges & Tankers

Currently In R&D Pipe
(Expect to Come to Mkt within 12 mths)

Vapor Point Applications

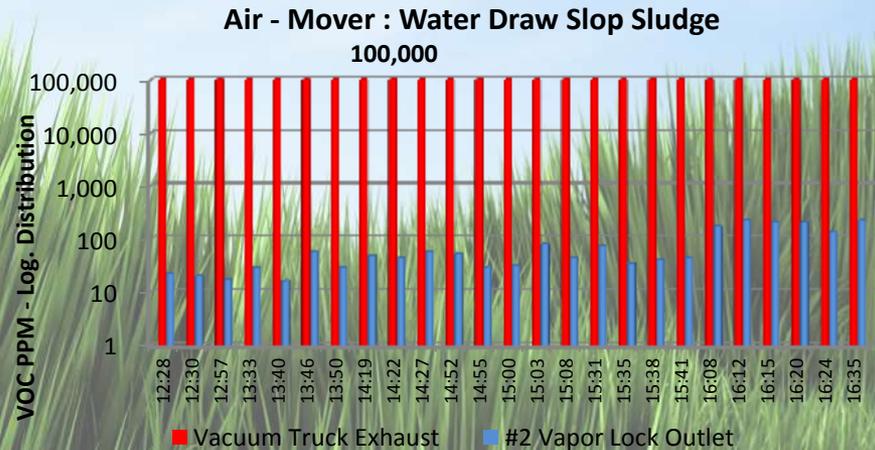
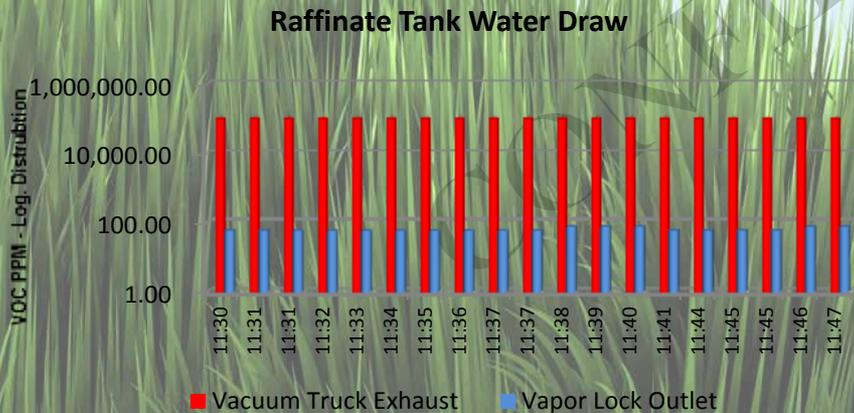
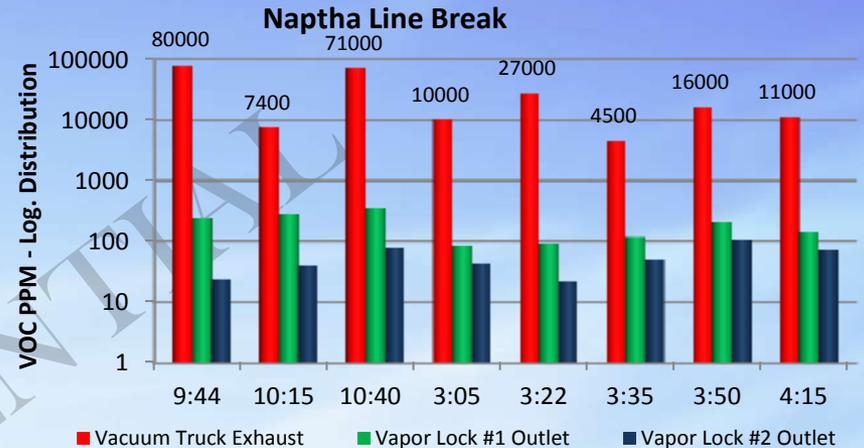
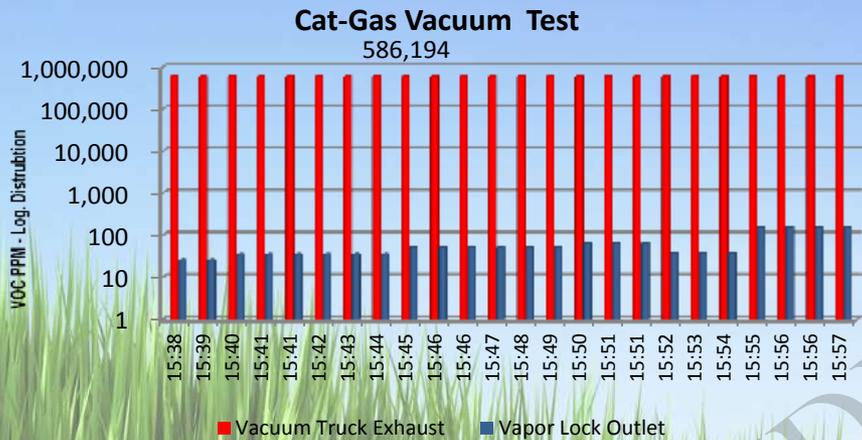
Applications	Vapor Lock	Packed Column	Sparger Scrubber	Thermal Oxidation	Carbon Absorption	Flares
Vacuum Trucks	•	•	•		•	
Air Movers	•					
Sumps and Pits	•	•	•	•	•	•
API Tanks/Seperators	•	•	•		•	•
Above Ground Storage Tank	•			•	•	•
Temporary Storage Tanks	•	•	•		•	
Pipeline Maintenance Applications	•			•		•
Process Unit Maintenance	•			•		•
Oilfield Rig Operations/Gas Busters	•			•		•
Paint Booth Off Gas	•	•	•	•		
Contaminates						
BETX \geq 1000 PPM	•			•		•
BETX \leq 1000 PPM	•	•	•		•	
Total VOCs (\geq C4) \geq 1000 PPM	•			•		•
Total VOCs (\geq C4) \leq 1000 PPM	•	•	•		•	
Total VOCs (\leq C3)	•			•		•
H2S	•	•	•	•		•
Ammonia	•	•	•			
Mercaptans	•	•	•			

Application Review



Vacuum Truck/Air Movers

Field Applications



Cost Comparison _ Crude Sump

Requirement – NESHAP/BWON requirement to control Benzene waste from refinery sump

Old Solution Activated Carbon

- \$287,000 annual cost
- Significant soft cost
- Significant carbon disposal/reactivation volumes

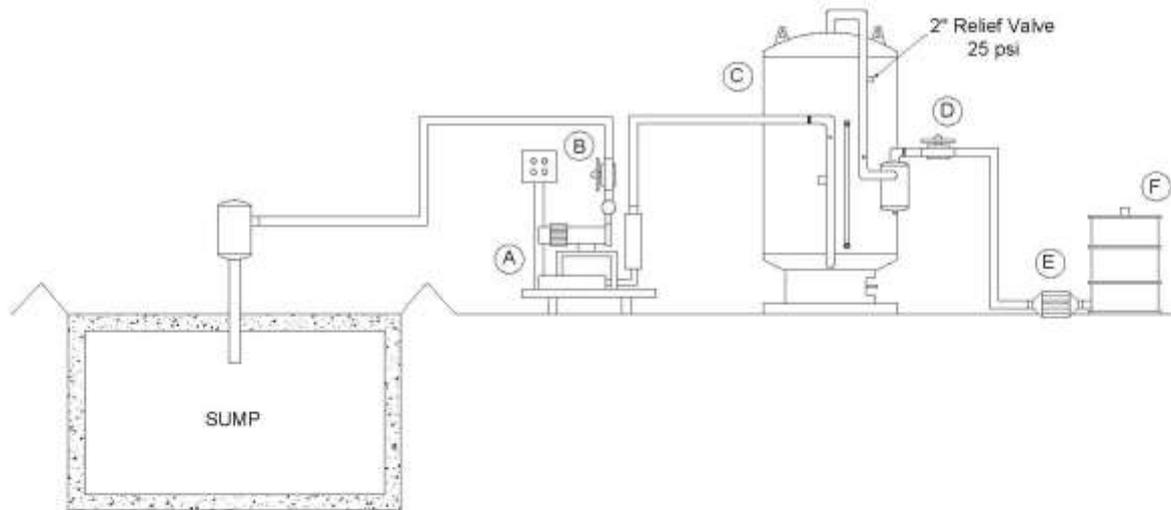
Vapor Point Solution

- Saved client \$70,000
- Reduced carbon footprint
- Vapor Sorb recycled by plant and sold as fuels



Sump Application

LETTER	QUANTITY	DESCRIPTION
A	1	Dekker Vacuum Pump
B	1	Kimray Back Pressure to Vacuum Valve
C	1	48" Vapor Lock VOC Recovery Scrubber
D	1	Kimray Low Pressure Back Pressure Valve
E	1	Flame Arrestor
F	1	Carbon Absorption System (200 or 400 lbs)



Notice: This drawing contains proprietary information. This drawing or any portion thereof may not be reproduced or copied in any form without the expressed written consent of Vapor Point LLC.

Vapor Point LLC
DWG: FHR.PA.API.1001A

June 22, 2010
FHR Submittal

Cost Comparison _ Benzene Tank

Requirement – Fence line monitors frequently showing benzene releases

Old Solution Activated Carbon

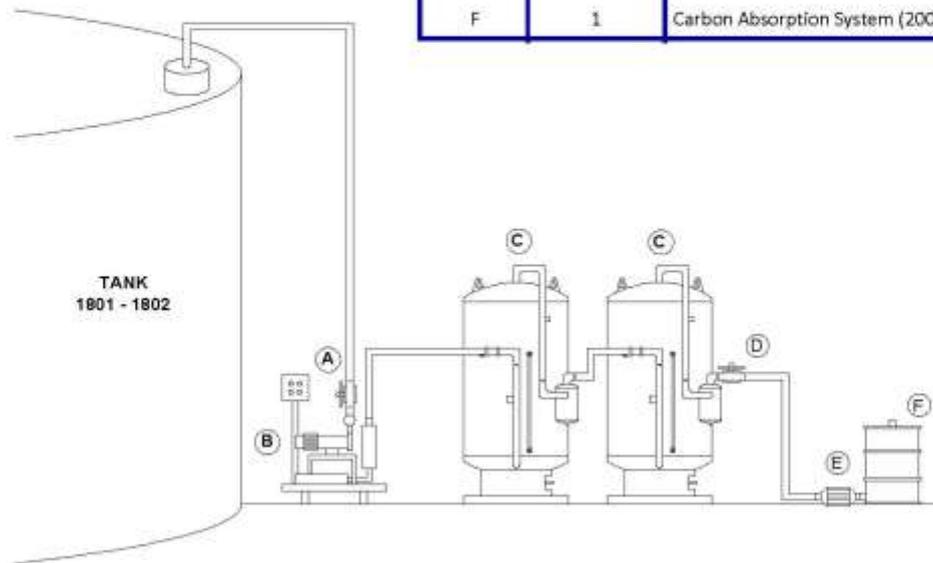
- \$416,000 per year annual cost
- Soft dollar savings associated with management of changeouts (estimated at \$125K)
- Significant carbon disposal/reactivation volumes

Vapor Point Solution

- Saved client \$169,000
- Reduced soft dollar cost
- Reduced carbon footprint
 - Reduced Carbon System Size
- Vapor Sorb recycled by plant as saleable product



Tank 1801—1802



LETTER	QUANTITY	DESCRIPTION
A	1	Vacuum to Back Pressure Valve
B	1	Liquid Ring Vacuum Pump
C	2	36"/48" Vapor Lock VOC Recovery Scrubber
D	1	Back Pressure Regulator
E	1	Flame Arrestor
F	1	Carbon Absorption System (200/400 lbs)

Notice: This drawing contains proprietary information. This drawing or any portion thereof may not be reproduced or copied in any form without the expressed written consent of Vapor Point LLC.

Vapor Point LLC
DWG: ???

July 13, 2010
??? Submittal



Vapor Point Advantages

- ✓ Versatility in controlling Hazardous Emission Sources
 - ✓ Maintenance of Safe Working Atmospheres
- ✓ Regulatory Compliance
 - ✓ Effective Control of VOC Emissions
- ✓ Elimination of Regulated Pollutants
 - ✓ If used appropriate 100% emission recovery
- ✓ Safe Effective Operations
 - ✓ No heating issues
 - ✓ No outside energy sources needed
- ✓ Economically Efficient
 - ✓ Recovered product yields high value fuel
 - ✓ Conserves Carbon Usage
- ✓ Turn-Key Solutions for Complete Fugitive Emission Compliance

Thank you!

