

Case History: Coal Tar Treatment System

Situation Analysis

- Old Coal Gasification Site
- Coal Tar Leaking into River
- Collection Trench Installed
- PAHs in Water and Air Phases
- Tankage, Utilities & Building Bought for Conventional Treatment System
- Conventional System Strongly Favored by Consultant

Challenge

	Influent	Effluent
Flow Rate (L/min)	60.0	
NAPL & TSS	Slugs	No NAPL
Total PAH (ppm)	7.3	<0.005
Naphthalene (ppm)	6.0	<0.005
Methyl Naphthalene (ppm)	31.0	<0.005
BTEX (ppm)	5.2	<0.005
Benzene (ppm)	2.6	<0.005
Alkalinity (ppm)	650.0	
Iron (ppm)	<5.0	
Chlorides	Present	



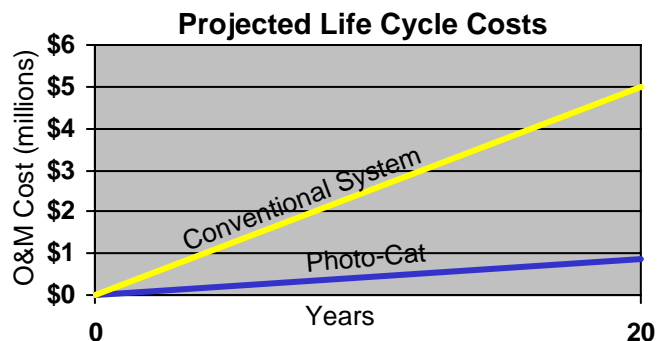
Solution

- Conventional Approach Scrapped
- Photo-Cat Multi-Phase Treatment Installed
- Single Pass Water Purification Technology
- 20,000 Hour Service Interval
- Over 12 Years Fully Compliant Operation in a Variety of Industries
- Remotely Operated: Duty 24/7
- C of A # 6235-5A6PJ3 (air) for Casing Gas



Cost-Effective Removal Technology for:

- Total Suspended Solids
- Slugs of Coal Tar, Oil & Grease
- No Clarifying Pre-Treatment Required
- Full Compliance for 13,632 hours
- Total Vol.—9,500 m³ Treated

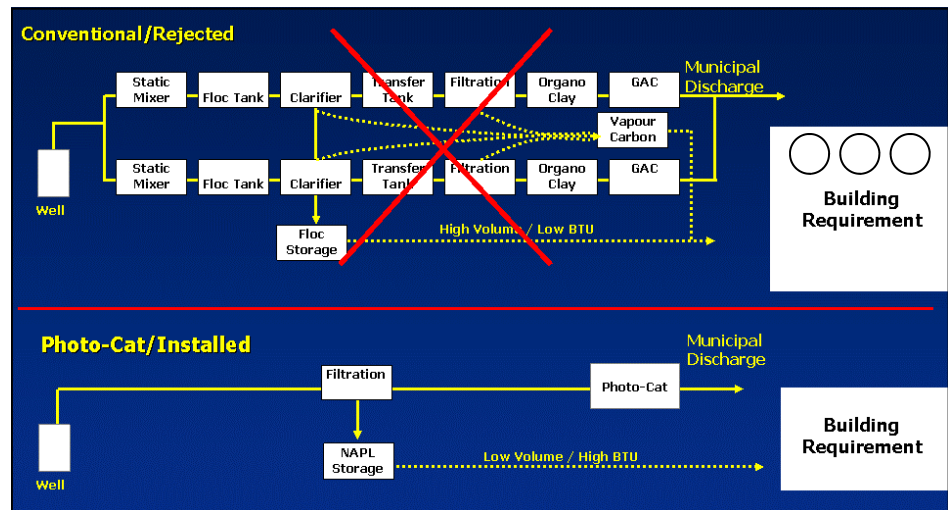


Unique Technologies ... Eliminate Problems ... Achieve Solutions

Benefits

1. Lower Overall Costs Than Conventional Systems
2. Significantly Less Disposal
 - 1 Drum Solids Per Month Vs. Weekly Vacuum Truck of Liquid Waste
3. Construction Savings
 - Self Contained 20' Shipping Container Replaces Building & Tanks
4. Cost Benefit Verified by Operation
5. Management Controls
 - Data Logging, Trend Analysis
 - Complete Security
6. Complexity Reduction
 - In Construction
 - Operations
 - Full Remote Automation
7. Treated to Surface Water Discharge Requirement but Management Chose to Send to Sanitary Sewer Discharge to Avoid C of A.

Reduced Complexity & Footprint



Engineering services include, but are not limited to: packaged plants, design build, applications engineering, project economics, research & development, and project management.

When asked to solve an engineering challenge, we achieve the solution by thinking differently and focusing on the problem, not the symptom. We strive to develop solutions that reduce risk, cost, process emissions, permits, and labour. Where possible, we seek to achieve a closed-loop process.

We do not accept “me too” solutions or employ technologies with undesirable attributes, such as waste, complexity, or vulnerability. To advance our mission of unique solutions, we apply approximately 15% of annual revenue to developing new technologies and processes that provide better options.



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