



Barstow Air Pollution Control System Improvements

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Overview

1. Background:

- The existing operations
- The existing APCS
- Future expansion plans

2. Options:

- Cleaning up air streams – general observations
- Making it work in a particular facility

3. Recommendations

- Two options
- The plan

Background

- The existing operations
 - Spray paint booths
 - Health and safety constraints in any manual paint operation
 - 40,000 CFM: In one 8 hour shift, that means
 - 1.2 million pounds of air
 - 20 pounds of solvent

Background (cont'd)

■ The existing APCs

- The “heroic” approach
 - Banks of UV lamps:
 - UV photolysis
 - Ozone generation
 - Wet scrubber
 - Carbon beds
 - Biological degradation in
 - scrubber section
 - carbon beds
- Unintended consequences
 - adsorption, flow vs. biology: slime
 - reactivity vs. concentration: bed fires

Background (cont'd)

- Future expansion plans
 - New 100,000 CFM facility
 - What to do with existing facility?

Options

- Cleaning up air streams – general observations
 - constraints:
 - residence time: so much air, so little time
 - concentration: much ado about nothing
 - approaches:
 - burn
 - zap
 - trap
- Making it work in a particular facility

Recommendations

■ Two options

- The low near-term risk option: trap and burn
 - proven technology
 - available off-the-shelf
 - costly, but preconcentration minimizes cost
 - downside risks:
 - fuel costs
 - global warming issues
- The backup plan: biological destruction
 - less developed technology
 - available, but little track record
 - ideally, least operating cost, and “greenest” option
 - but how ideal is the reality?

Recommendations (cont'd)

- The plan
 - pilot test in existing facility
 - rely on carbon bed – install under existing permit
 - incorporate concentrator option
 - work with contractor for new facility
 - optimize concentrator to work in conjunction with biological destruction unit
 - evaluate both performance and maintainability

The Phase 2 Project

- Partners (so far):
 - NCMS
 - Barstow Marine Corps Maintenance Center
 - NES A & Associates
 - BioReaction Industries

- For more information

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