New EPA Guidance - Effective Contracting Approaches for Operating Pump and Treat Systems

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Accelerating Site Closeout, Improving Performance, and Reducing Costs through Optimization

Dallas, TX – June 15-17, 2004

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Presenters

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Presentation Objective

- Introduce the new EPA fact sheet titled

Effective Contracting Strategies for O&M of Pump and Treat Systems

OSWER 9283.1-21FS, EPA 542-R-04-002 (Coming Soon!)

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Presentation Objective

- Please note that there are three other new companion EPA fact sheets
  - *Elements for Effective Management of Operating Pump and Treat Systems*
    - OSWER 9355.4-27FS-A, EPA 542-R-02-009, December 2002
  - *O&M Report Template for Ground Water Remedies with Emphasis on P&T Systems*
    - OSWER 9283.1-22, EPA 542-R-04-003, Coming Soon!
  - *Cost-Effective Design of Pump and Treat Systems*
    - OSWER 9283.1-20FS, EPA 542-R-04-004, Coming Soon!
    - Presented at 2:00pm on Day 2, Track A

Look for all of the fact sheets at www.cluin.org/optimization

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Background

- All of these fact sheets were inspired by the results of a nationwide pilot to optimize operating Fund-lead P&T systems
  - 20 optimization evaluations (RSEs) were conducted
  - RSEs identified a number of useful practices
  - RSEs also identified over 200 opportunities for improvement
    - Over 60 related to improving or evaluating protectiveness
    - Over 60 related to cost reduction

Results suggested need for more specific guidance on O&M

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Background

- These fact sheets are intended to
  - Demonstrate the need for active management during O&M
  - Outline primary responsibilities during O&M
  - Provide general information, tools, and “rules of thumb” for addressing those responsibilities

- They are NOT intended to
  - Replace hydrogeological or engineering expertise
  - Replace the need for external or independent optimization evaluations

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Effective Contracting Approaches for Operating Pump and Treat Systems

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Topics

- Essential contract components
- Options for contract type
- Considerations specific to contracts for operating P&T systems
- Optimization

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General Themes

- A contract governs the relationship between the customer and the contractor
- A good contract…
  - Is beneficial to both parties
  - Clearly outlines roles and responsibilities
  - Allows for flexibility and modifications to account for changes in site conditions and system requirements

Contract Components

- Scope of work
- Schedule and deliverables
- Level of effort and/or pricing
- Period of performance
- Terms and conditions
- Points of contact
- Procedures for contract changes
- Special clauses
- Others…

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Contract Types

- Fixed-price – contractor must complete scope, regardless of cost
  - Firm-fixed price
  - Fixed-price with economic price adjustment
  - Fixed-price incentive
- Cost-reimbursable
  - Cost plus fixed fee
  - Cost plus incentive fee
  - Cost plus award fee
- Time and materials
  - May be open-ended or may include a “not to exceed” clause

Contract Types

Consideration	Fixed-Price	Cost-Reimbursable or T&M
Risk to contractor	Higher risk	Lower risk
Definition of tasks	Appropriate for tasks with predictable components	Appropriate for tasks with unpredictable components
Contractor incentive	Encourages contractor to work efficiently	No incentive within contract for contractor to work efficiently
Invoice information	Fewer details to review	More details to review
Risk to customer	Lower risk	Higher risk

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Considerations for Operating P&T Systems

- Operating P&T systems have the following characteristics
  - They are long-term activities
  - Actual O&M is generally routine, but P&T systems are often associated with complex sites with non-routine activities
  - Site conditions change over time. Some items remain predictable while others are unpredictable

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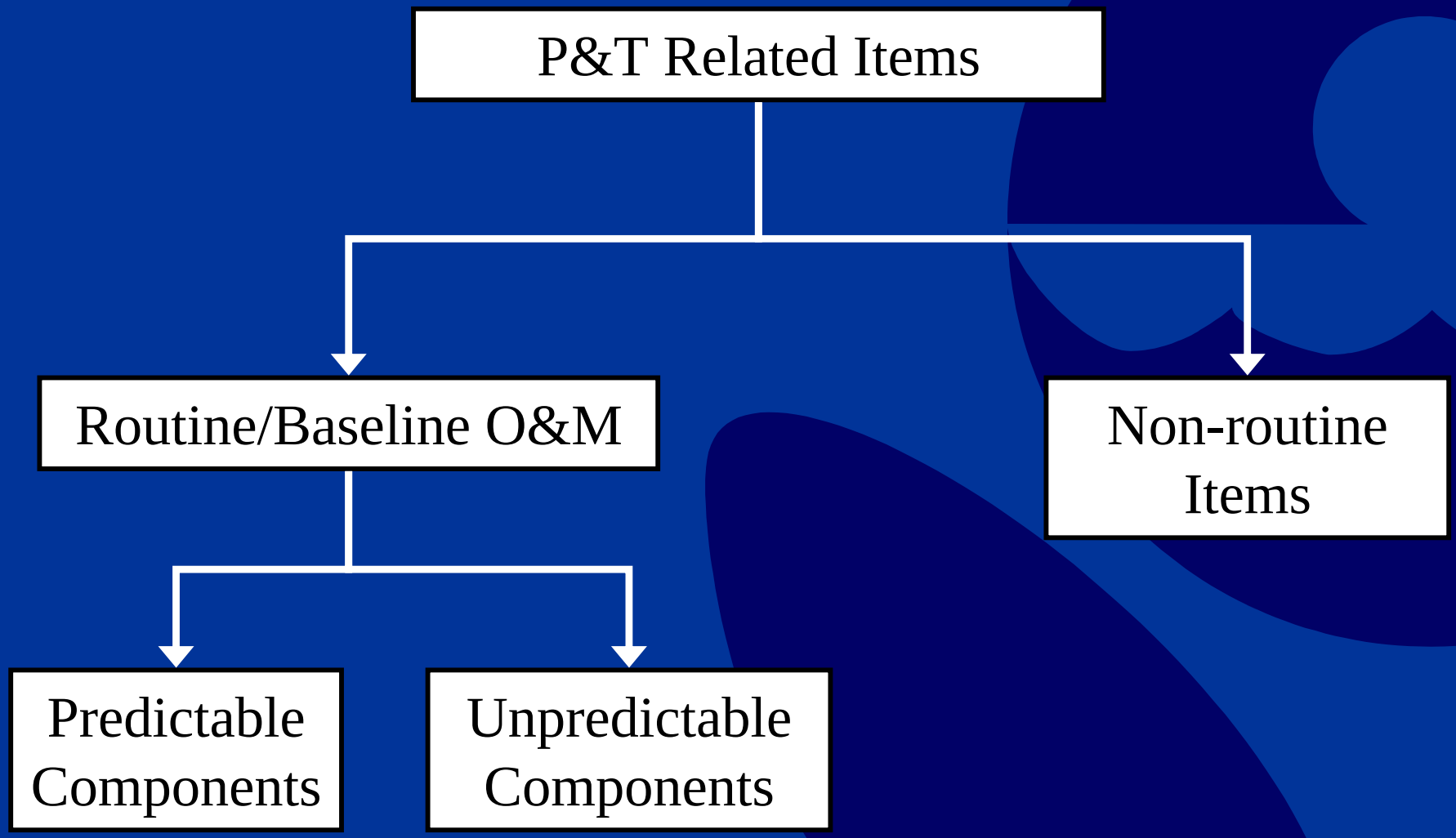
Considerations for Operating P&T Systems



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Considerations for Operating P&T Systems

- Routine vs. non-routine
  - Non-routine items might include
    - Non-routine maintenance
    - Community relations
    - Evaluations (e.g., receptor evaluations, 5-year Reviews)
    - Source area investigations
    - Etc.
- Consider the scenario on the following slide to see why non-routine items should be tracked separately from routine items

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Considerations for Operating P&T Systems

Year	General Tasks	Approach 1 (Recommended)	Approach 2
1	• Baseline O&M • Non-routine tasks	$125,000 $100,000	$225,000
2	• Baseline O&M • Non-routine tasks	$150,000 $70,000	$220,000
3	• Baseline O&M • Non-routine tasks	$175,000 $50,000	$225,000
4	• Baseline O&M • Non-routine tasks	$205,000 $20,000	$225,000

With Approach 2, a customer may not see the cost increase for baseline O&M, which may signal contractor inefficiency or changes in O&M costs that need to be addressed

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Considerations for Operating P&T Systems

- Predictable vs. unpredictable

Lump Sum	Cost-Reimbursable or T&M
• Project management • Reporting/data analysis • Process monitoring/analysis* • Groundwater monitoring/analysis* • O&M labor and routine maintenance	• Non-routine maintenance and plant upgrades • Utilities • Consumables • Disposal

Fixed prices per unit item allow for reductions or increases depending on site conditions.

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Optimization

- As part of providing quality service, the contractor should continually work to optimize the system, but…
  - Contractors may be hesitant to recommend changes that reduce their level of effort
  - This consistent effort should not necessarily require an additional optimization line item
- A contract could outline incentives or awards to foster contractor-based optimization
- Contractors should receive awards for optimization, NOT simple reductions in scope
- More comprehensive optimization should be provided by an independent party that does not gain or lose from changes in the O&M level of effort

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Optimization

- Examples of optimization include
  - Using a new oxidant that will increase efficiency of a metals removal system
  - Replacing a thermal oxidizer with GAC to treat air stripper or SVE offgas
  - Improving automation
- Examples of scope reductions include
  - Reducing groundwater monitoring due to established trends
  - Reducing process monitoring locations due to demonstrated system effectiveness
  - Reducing operator labor because the system operates continually without incident
  - Discontinuing a treatment process because the plant influent already meets effluent criteria

Other Reminders

- Eliminate services no longer required after construction completion (e.g., trailers)
- Utilize technical assistance resources to scope work properly prior to O&M contract
- Each level of subcontracting costs money with no direct return
- Beware of O&M bids based on worst-case data from remedial investigation
- Use the contract to establish the O&M reporting requirements

Discussion

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