

Headquarters U.S. Air Force

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Remediation Performance Optimization in the Age of Performance Contracts



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- **Background**
- **Evolution of Optimization Concepts**
- **Evolution of Contract Strategies**
- **Current Role of Optimization and Surveillance**



■ **Then**

- **DoD remediation liability estimate (1987)**
 - \$14B and 13 years
- **Limited technical & programmatic experience**
 - Led to great uncertainties
- **Development of process-intensive regulatory models**

■ **'Recently'**

- **DoD remediation liability estimates (2004)**
 - \$50B and beyond 2014
- **20 years of experience, knowledge & innovation**
 - Led to methodology to address uncertainties
- **Optimization**
 - Focus on results not simply the process



What Happened?

- **Initial environmental restoration efforts focused on investigation...
...and never seemed to end**
- **Interim remedies were originally thought to clean up a site within a few years...
...which didn't happen**

Optimization became a means of changing activities in the hope that performance would be improved



Optimization – First Steps

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- **Optimization focused on system and site specific data**
 - **Improve system operation**
 - Add / remove / modify wells and other equipment
 - Established performance goals
 - **Adjust monitoring for performance tracking**
 - Largely investigation related monitoring networks
 - Select the appropriate subset of wells to evaluate remedy performance
 - **Adjust site-wide and installation-wide Long Term Monitoring**
 - Identify specific endpoints for monitoring

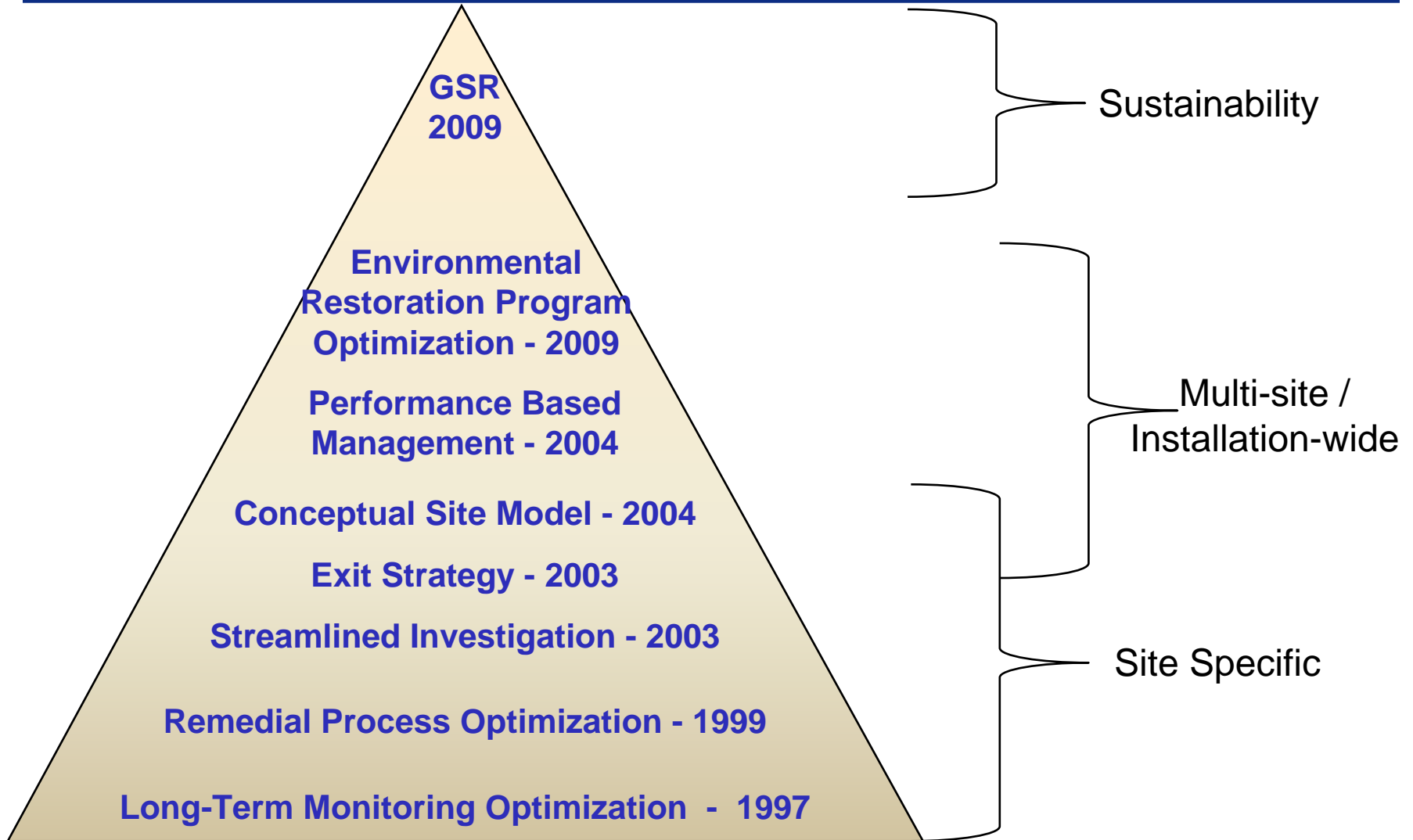


But we've always done it this way...



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Optimization Concepts Evolved



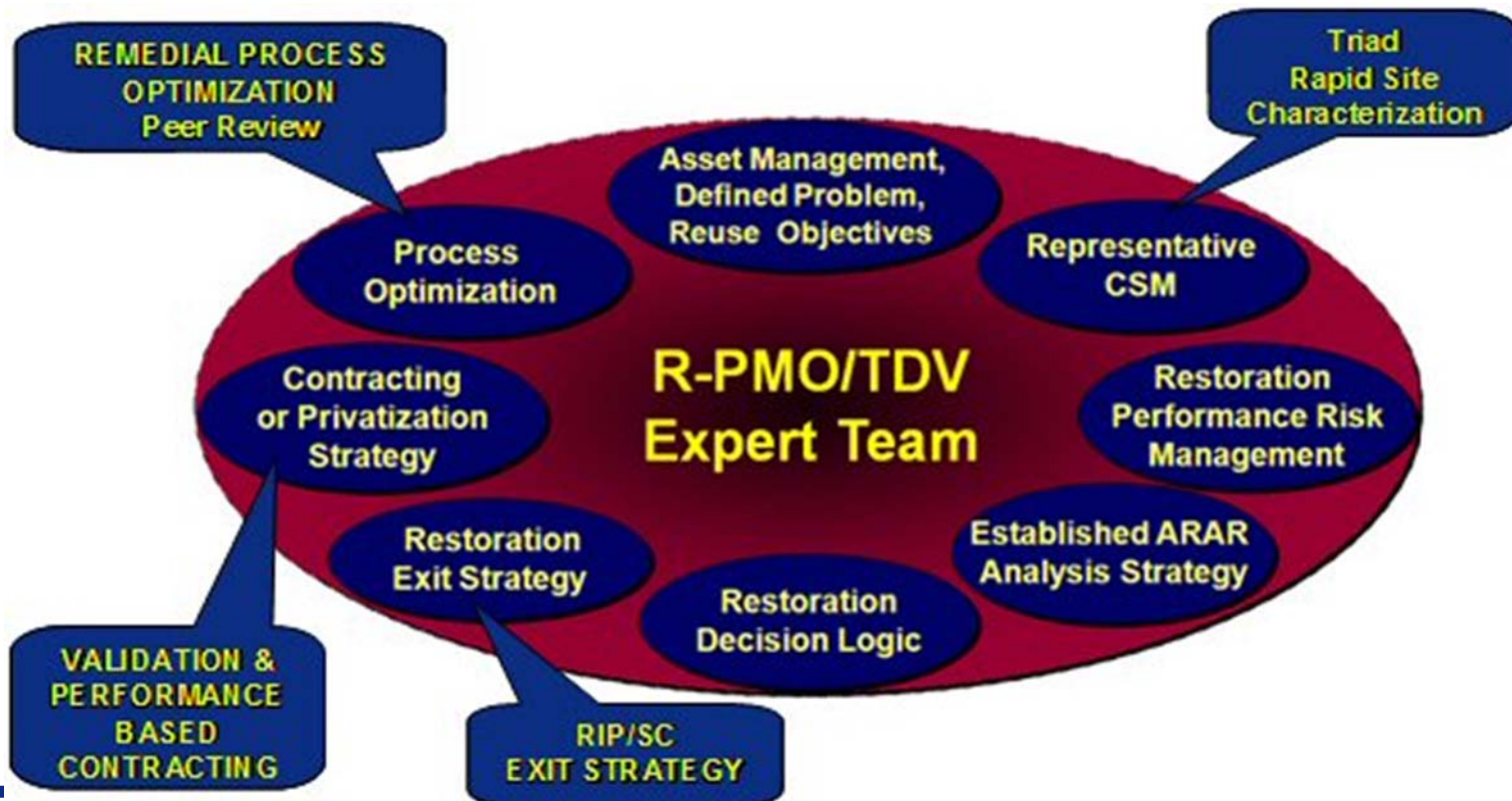


Optimization – Second Step

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■ Performance Based Management

- First holistic approach for environmental restoration programs
- Emphasis on achieving site closure and/or returning land to beneficial use





Optimization – Next Steps

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- **Focus on Remedy in Place by 2012**
- **Optimization concepts applied to the restoration program... ERP-O**
 - **Sites were evaluated for meeting the RIP goals**
 - **Recommendations developed to facilitate RIP achievement**
 - **Installations responsible for implementing recommendations**
- **Surveillance**
 - **Periodic review of ERP-O recommendations**
 - **Funding for recommended actions**
 - **PBR contract site status reviewed 1 yr before end of PoP**



ERP-O Experience

- **Original intent was to hold off on independent ERP-O review until the end of a PBR**
 - **Avoid ‘interference’ with PBR contractor**
- **Case Studies:**
 1. **Conducted review of 13 sites at one installation which were to have progressed from RI to ROD**
 - **RIs were deficient, all funding expensed**
 - **Caused 2 year delay**
 2. **Conducted review of 7 sites at one installation with site closure goals**
 - **Inadequate preparation for remedy execution**
 - **Lacked progress towards goals**
 - **Expended approximately 85% of the budget**



■ What Happened?

■ Work Plans lacked detail

- “We’ll figure out what needs to be done in the field”
- Default decision logic cycled back to “get more funding”

■ Poor document trail for changes

- Significant inconsistencies between WP and reports

■ Significant data gaps remained

- Poor presentation of data (maps & text)

■ Hindsight

- There were missed opportunities to catch and correct the execution problems



Case Study 2

■ What Happened?

- PBC was awarded to the contractor who promised the most sites closed

- Execution lacked critical data collection

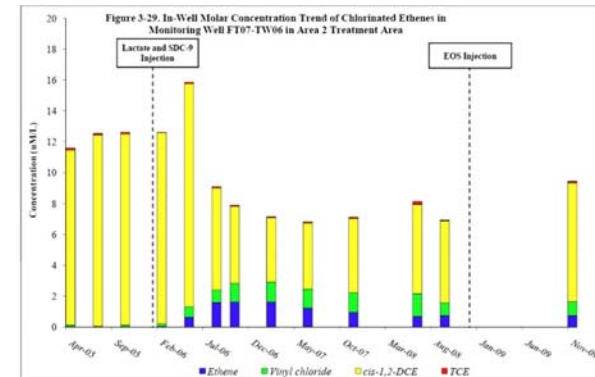
- No aquifer response test
- No evaluation of data gaps
 - Source zones within aquifer

- Poor progress towards closure

- Concentration trends generally stable , some increasing/decreasing

■ Hindsight

- ERP-O evaluation had been requested 1 year earlier
- Technical review of performance goes beyond the ‘words’ in the report.





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Focus on Site Closure

- **February 24, 2011 Policy for Refocusing the Air Force Environmental Restoration Program from the Assistant Secretary (Installations, Environment, and Logistics)**
 - **Cleanup objectives to focus on fence-to-fence accelerated SC**
 - **SC is... no further investments of time or money**
 - **Unrestricted Use and Unlimited Exposure (UU/UE)**
 - **Primary contracting mechanism – Performance-based**



Reinforced Drive for PBR

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- **PBR emphasizes contractor's responsibility for making appropriate decisions**
 - **Contractors implement RPO and LTM-O**
 - **Technically feasible optimization**
 - **Regulatory acceptable optimization**
 - **Optimization for site closure**
 - **May result in increased frequency of sampling**
 - **Additional sampling points may be needed for verification**

- **Air Force evaluations and recommendations can only be for information and not direction of remediation**



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ERP-O Adapts

■ Pre-PBR Contribution

- Provide programmatic evaluation to support fence-to-fence PBRs
- Highlight potential performance metrics

■ During PBR – Surveillance

- Support execution of the Surveillance Plan
- Evaluate progress against performance metrics and milestones

■ Post PBR – Evaluation and preparation for next PBR

- Insight into progress made towards meeting remediation goals
- Identification of next set of goals

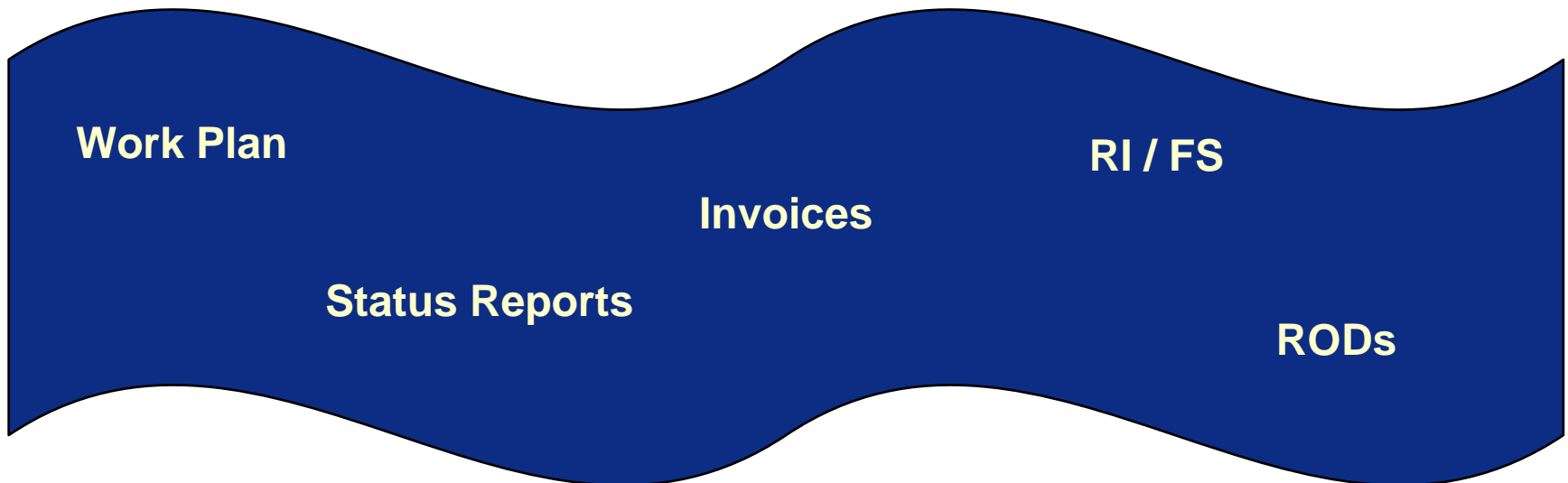




Surveillance of PBRs

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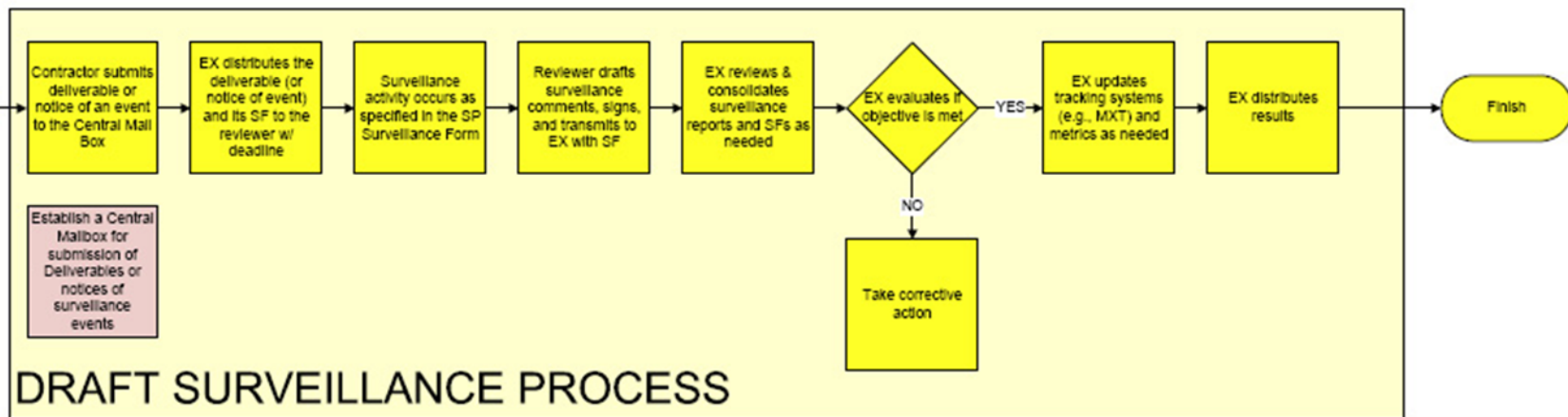
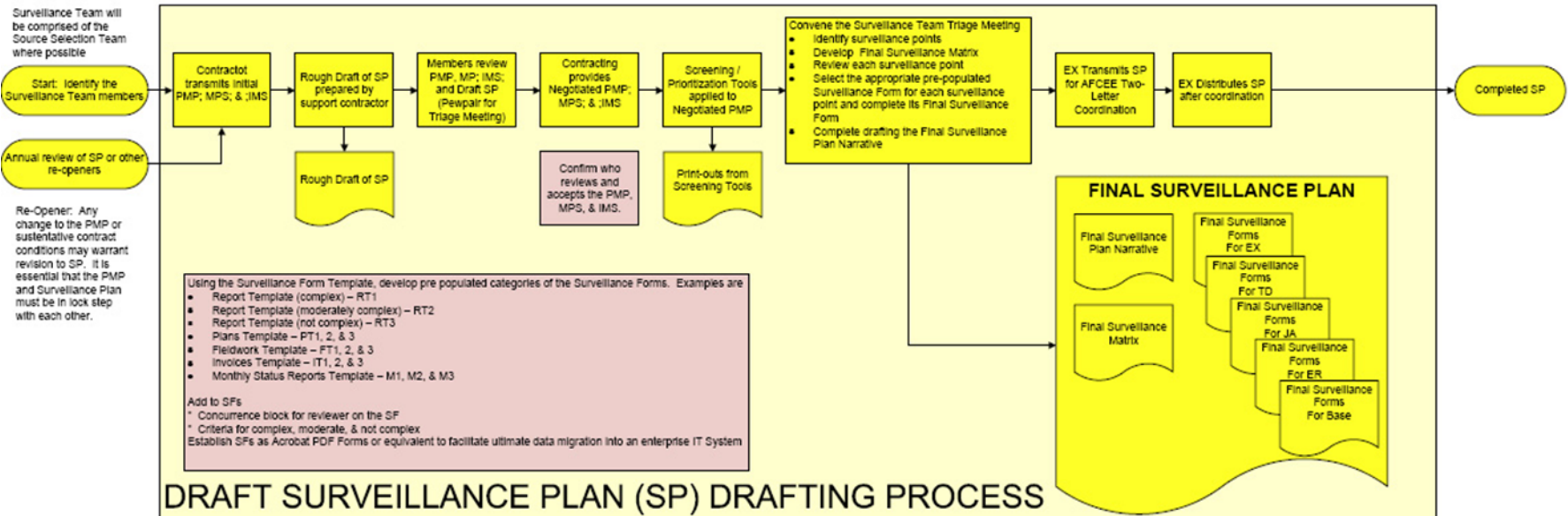
- Contractor develops the Project Management Plan and Integrated Master Schedule
 - Milestones
 - Performance Goals
- Air Force develops the Surveillance Plan
 - Documents surveillance activities and points to verify the contractors progress





Potential Surveillance Process

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QUESTIONS?

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RPO Resources

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- **ASTM:** <http://www.astm.org/DATABASE.CART/WORKITEMS/WK23495.htm>
- **AFCEE ERP-O:** <http://www.afcee.af.mil/resources/restoration/erp-o/index.asp>
- **AFCEE RPRM:**
<http://www.afcee.af.mil/resources/restoration/rprm/index.asp>
- **US Navy:**
https://portal.navfac.navy.mil/portal/page/portal/NAVFAC/NAVFAC_WW_PP/NAVFAC_NFESC_PP/ENVIRONMENTAL/ERB/OPT
- **US Army:**
http://www.environmental.usace.army.mil/rse_checklist.htm
- **US EPA:**
<http://epa.gov/superfund/cleanup/postconstruction/optimize.htm>
- **ITRC RPO:** http://www.itrcweb.org/teampublic_RPO.asp
- **ITRC RRM:** http://www.itrcweb.org/teampublic_RRM.asp



Objectives and Targets

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Accelerated Completion Objectives

	Target 1	Target 2
BRAC Sites		
Accelerated completion	75% of all Sites by 2012	90% of all Sites by 2015
Non-BRAC Sites		
Accelerated completion	50% of all Sites by 2012	75% of all Sites by 2015



Objectives and Targets

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For Sites not yet Completed, ensure:

	Target 1	Target 2
BRAC Sites		
Under Performance Based Contract	75% of Sites by 2011	95% of Sites by 2014
Non-BRAC Sites		
Under Performance Based Contract	60% of Sites by 2012	90% of Sites by 2015