

Headquarters U.S. Air Force

Integrity - Service - Excellence

Environmental Site Closeout Strategies



U.S. AIR FORCE

Mr. Dennis Lundquist

Air Force Center for Environmental Excellence

Ms. Barbara Smith-Townsend

Air Force Center for Environmental Excellence

Fred T. Price, Ph.D.

Mitretek Systems

08 April 2003



Introduction

- **The Air Force has been involved in closing environmental sites for several decades and has accumulated numerous lessons learned and success stories**
- **This presentation describes a paradigm for environmental site closure based on information collected over the life of the site closure program and the authors' experience in the environmental field**





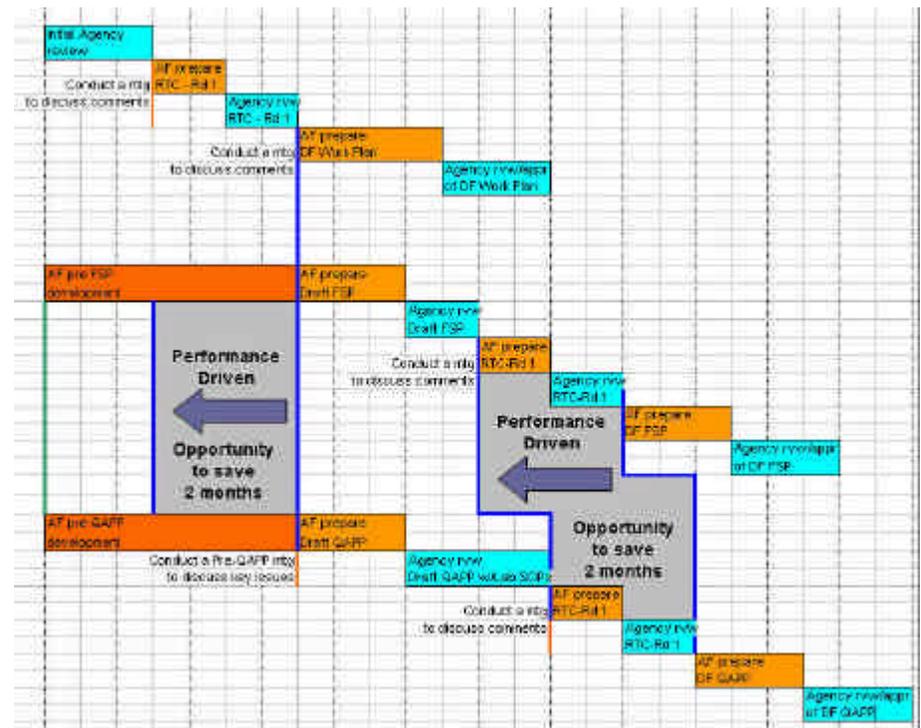
Fundamental Theses

- **There are three fundamental theses of this paradigm:**
 - **Early planning is critical for efficient and effective site closeout**
 - **Opportunities exist for improving the environmental site closeout process if current methodologies are re-examined and new approaches are considered**
 - **It is essential to establish a closeout documentation trail and archival system that focuses and facilitates the site closeout program**



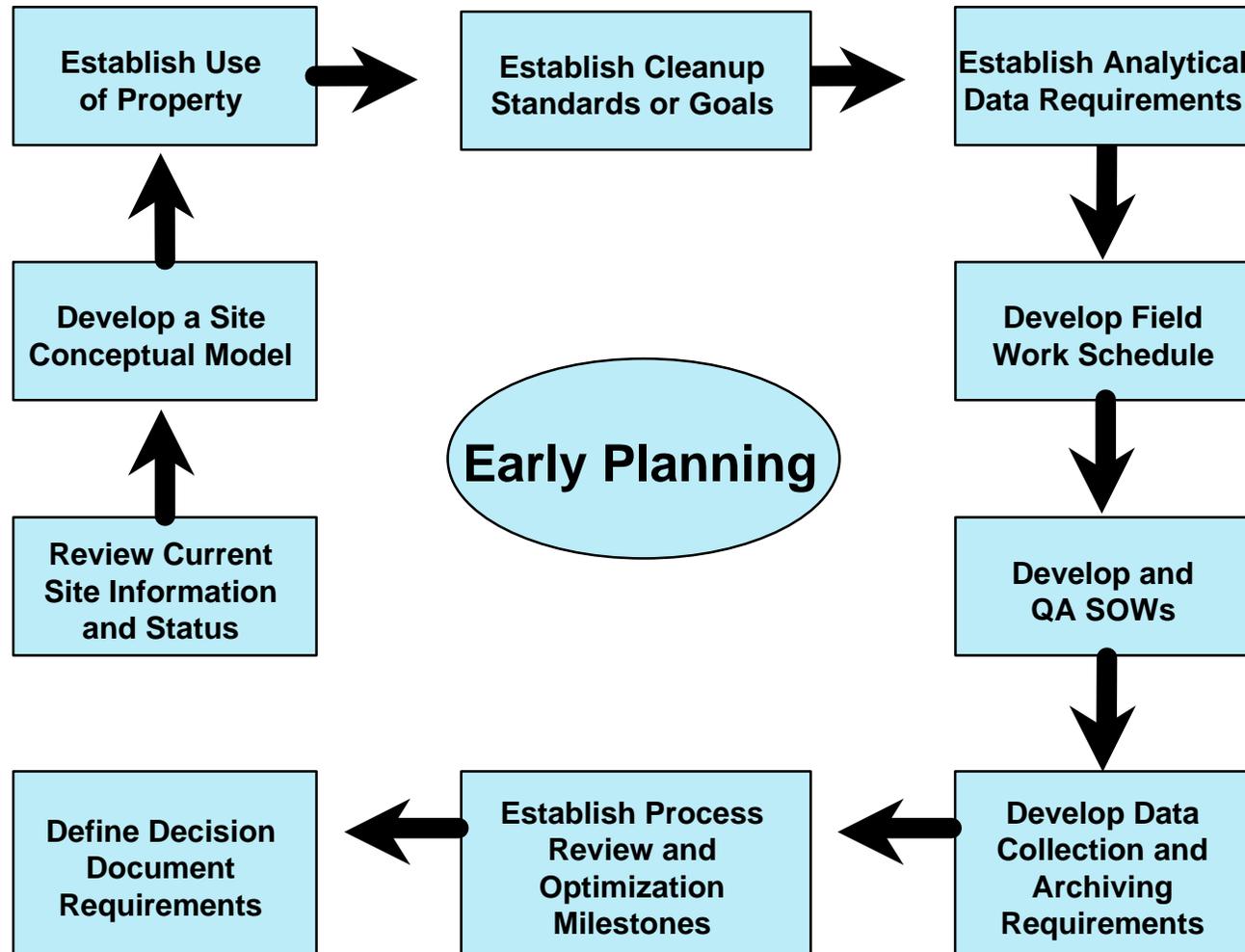
Early Planning for Site Closeout

- Develop a plan for site closeout as early as possible in the process
- Site closeout planning should take place before site characterization and remediation begin
- During the early site closeout planning stage, lay out all of the steps involved in achieving site closeout.





Examples of Steps in Site Closeout Early Planning



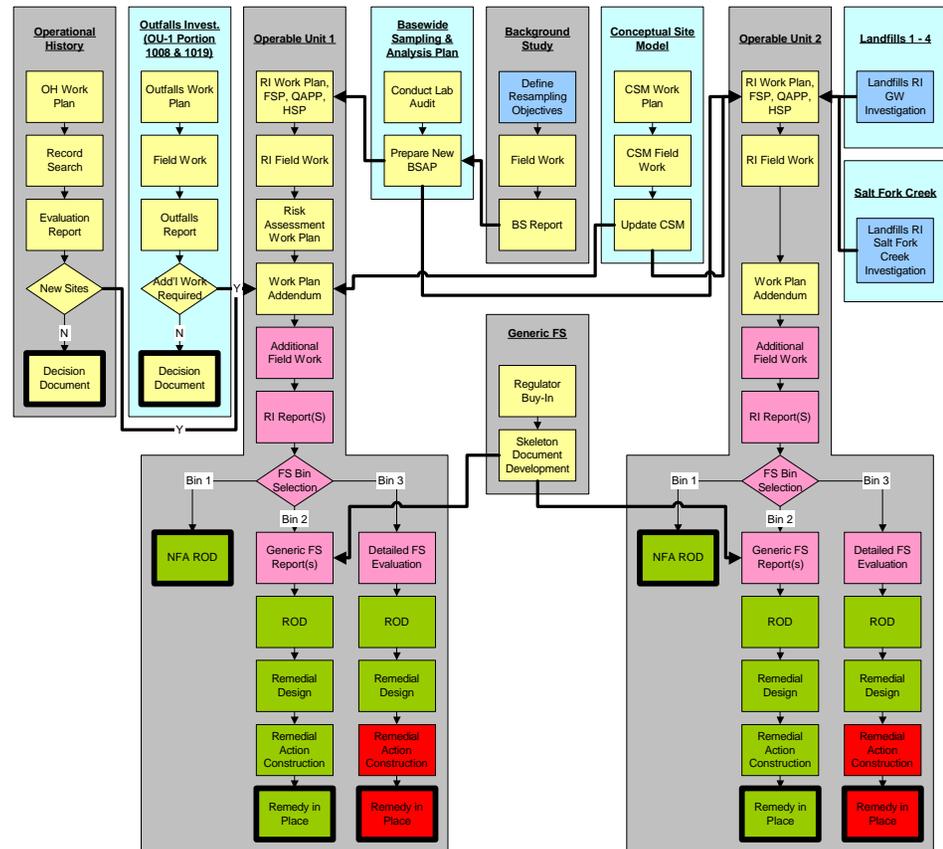
Integrity - Service - Excellence



U.S. AIR FORCE

Combine or Simplify Steps

- Attempt to minimize and simplify the steps before incorporating them into the plan
- Consider combining steps or leaving some out all together, then analyze the impact of this revision on site closeout
- There may be flexibility to combine steps or substitute short steps



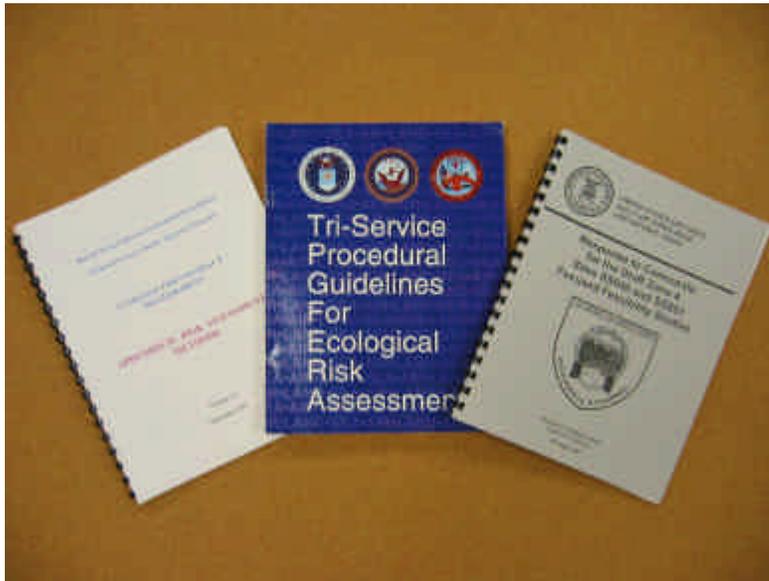


Establish Methodology and Create Backup Documentation

- **A methodology should be established during early planning that will track the data and the program site by site**
- **This methodology should produce a complete file with proper documentation to prove that all steps have been taken and officially recorded at each site prior to site closeout**
- **It is critical to create documentation that will clearly identify sites closed (with adequate backup) and sites that have work yet to be done**



Re-Examine Current Methods and Try New Approaches



- Consider new approaches for standard tasks:
 - Streamlining data collection and management
 - Leveraging external resources
 - Optimizing remedial processes
 - Integrating real estate requirements
 - Applying innovative contracting strategies



Streamlining Data Collection and Management

- **The key to streamlining data collection and management is to determine what data and data quality are required for the task**
- **Draw on early planning to focus the selection of data and to determine the quality of data needed**
- **Build in enough flexibility to permit adding or removing data based on changes at the site**





U.S. AIR FORCE

Leveraging External Resources

- External resources that may contribute to an environmental site closeout include civic and community organizations, municipal and county authorities, and federal organizations
- Where the goals of the external resources overlap with the goals of the environmental program, there may be an opportunity to accomplish a common goal while sharing costs



BexarMet Water District

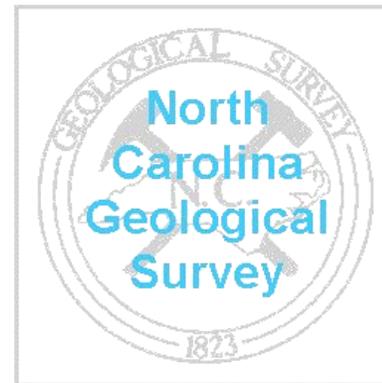
"The Water Resource People"

Integrity - Service - Excellence



Leveraging External Resources (Concluded)

- External resources can sometimes be an entity or organization, such as a bureau of economic geology, a state geological survey, or a local river authority
- Advantages of seeking external resources include the increased credibility that they provide and access to their specialized body of experience
- This approach also provides an opportunity to support local organizations and the community as part of the site closeout process





U.S. AIR FORCE

Optimizing Remedial Processes

- Even before optimization is considered for a remedial process, early planning will help ensure that the appropriate remedial technology is ultimately selected
- This requires an impartial and fair evaluation of technologies, which is sometimes difficult in a profit-driven environment
- In many cases, program technical peer reviews can ensure that state-of-the-art and cost-effective projects are implemented at each site





Optimizing Remedial Processes (Continued)

- Optimization is a good way to reduce both long-term costs and the time required for remedial processes
- The regulatory long-term review processes currently in place tend to focus on meeting regulatory requirements rather than optimizing remedial processes





Optimizing Remedial Processes (Concluded)

- **Once a remedial process is operating, the environmental and engineering systems associated with the process will change**
- **The environmental manager should look at all remedial processes associated with sites at a base to ensure that the overall effect of optimization is beneficial not just to one site but to the base as a whole**



Integrating Real Estate Requirements

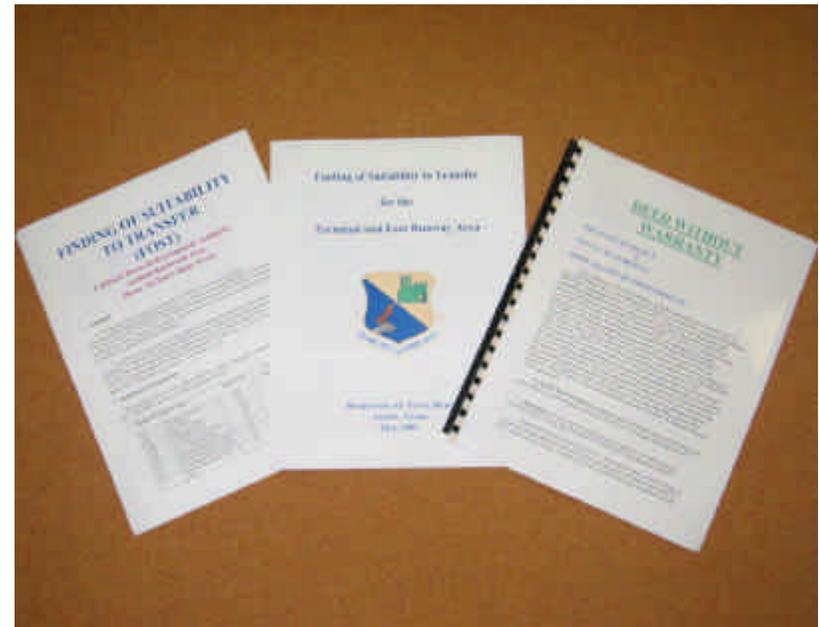
- Real estate and property issues should be considered as part of the early planning process
- At non-closure bases, property may be considered as part of the risk assessment since industrial use is often treated differently from residential use
- At closure bases, real estate requirements may be considered because transfer of property by deed or lease is involved





Integrating Real Estate Requirements (Concluded)

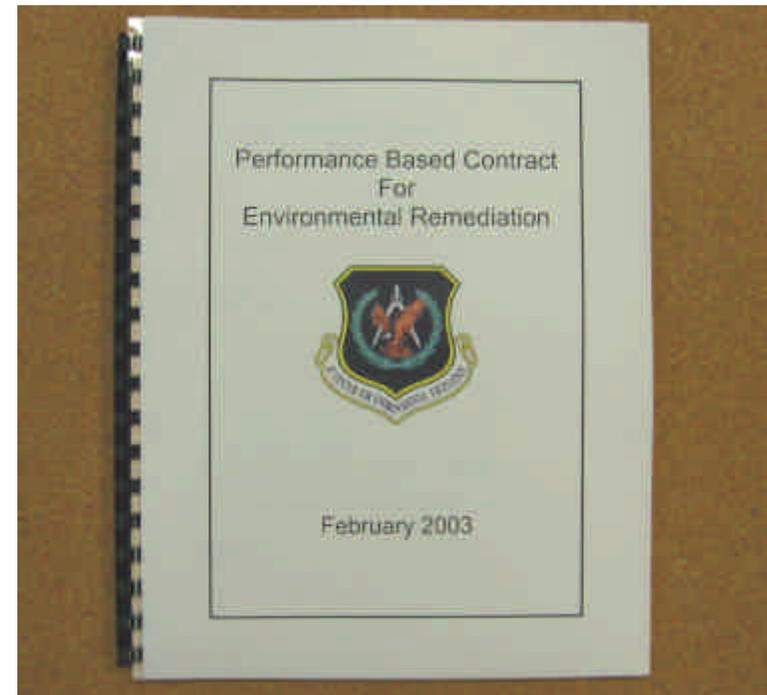
- The environmental program should not be thought of as separate from the real estate requirements
- Since real estate requirements may change over time, it is important to establish clear communication between environmental site closeout and real estate personnel to optimize efficiency
- Where transfer of property is involved, additional variables must be considered, such as the timing of transfer by deed and the responsibilities of all parties before and after the transfer





Innovative Contracting Strategies

- In general, the government would prefer that contracting vehicles shift some of the responsibility for risk to the contractor; this means that contractors would be at least partly responsible for time and cost overruns
- Firm-fixed-price contracts generally meet these requirements, but they are not able to deal with the high degree of variability in the environmental site closeout process





Innovative Contracting Strategies (Concluded)

- **Recently, performance-based contracting (PBC) has become more popular in environmental work**
- **To use PBC successfully, a clear request for proposal must be developed and clear and discriminating proposal evaluation criteria must be established**
- **By considering the entire arsenal of contracting vehicles for every site, it is possible to employ the best contract strategy at each site**



Closeout Documentation and Archival

- In order for environmental sites to be properly closed, there needs to be a complete documentation trail
- A useful tool is a site closeout tracking spreadsheet, which can be used to track the completion of the closeout program site by site

FACILITY	CATEGORY	FINDINGS	REVIEWER	RESULTS
47	7	Based on possible releases of unknown petroleum substances to the soil underlying the washrack. Cracks in concrete related to the washrack.	Hackle	Addressed in MBPB20016665
50	5	Based on the closure of OWS 0050-1 that was closed by Risk Reduction Rule 2 and is awaiting TNRCC approval.		
50	7	Based on an OWS with a holding tank that has not been investigated or verified.		
50	7	Based on OWS-0050-3 that has not been investigated.		
53	7	Based on a UST associated with a gasoline dispenser.	Smithson	Part of ghost tank investigation.
54	7	Based on peeling paint that may be lead based and may be extensively spread in surrounding soils.		
56	7	Based on unknown condition of the below-grade, inactive hydraulic lift.		
58	7	Based on the unknown connection of the floor drain in an area where hazardous materials were stored.		



Closeout Documentation and Archival (Concluded)

- The tracking spreadsheet tool has been used successfully at several Air Force installations and identified sites ready for “official” closeout
- The tool has also identified shortcomings in the documentation trail at sites
- In addition to the traditional data collected for a site, there are other types of site data that should be collected, tracked, and archived

Tracking of Sites Requiring Public Notification								
Total Count	Count per Facility Type	Site ID	Description	POC	Date of NFA Letter	How the Site was closed		
						Compliance Plan Site Closed after August 2001	Compliance Plan Site in RCRA Corrective Action Program	All other closed sites
1	1	CSA-00Z04-01	Lot Z04 Miscellaneous Store Container	Smith	Jan-99			
2	2	CSA-03654-01	Bldg 3654 CSA	Jones	Feb-99			
3	3	CSA-00374-01	Bldg 374 CSA	Landry	Nov-99			
4	4	CSA-03096-01	Bldg 3096 Permitted Storage Facility	Johnson	Jan-00			
5	5	CSA-00324-01	Bldg 324 CSA	Fisher	May-01			
6	6	CSA-00338-01	Bldg 338 CSA	Ashe	May-01			



Documentation Methodology

Examples of Additional Site Data Types
Closure Standards
Decision Documents and Dates
Remedial Actions – How do you know when you are done?
Monitored Natural Attenuation Documentation
Five-Year Reviews and Dates
Operating Properly and Successfully Demonstration
Land-Use Controls and Institutional Controls
Location and Availability of Records
Compliance-Related Closure Status – Document Trail



U.S. AIR FORCE

Summary

- **There are likely additional methods that can be used to optimize environmental site closeout programs**

- **Whatever tactics you choose to use, it is important to remember to:**
 - **Conduct early planning**
 - **Re-examine the current site closure practices**
 - **Consider new approaches**
 - **Establish your site closeout administrative methodology**
 - **Ensure that your documentation is complete**

Integrity - Service - Excellence