



Tracking Performance on the Army's Performance- Based Contracts

***Are they delivering all that was
hoped?***

May 16, 2006

FINAL

Notes

- The Army began use of performance-based contracts (PBC) for environmental remediation in the late 1990's when the Assistant Chief of Staff for Installation Management (ACSIM) encouraged use of "a new generation of cleanup initiatives."
 - ✓ In 1999, the Base Realignment and Closure (BRAC) Office pursued several Guaranteed Fixed Price Remediation (GFPR) contracts at its installations.
 - ✓ In 2001, the US Army Corps of Engineers awarded a GFPR contract at Fort Leavenworth, Kansas.
 - ✓ In 2002, GFPR was approved as an Army and Department of Defense (DoD) Business Initiative Council (BIC) Initiative.
- In 2003 the Army changed the name of the initiative from GFPR to PBC because PBC is broader in terms of contract type (i.e., a guaranteed fixed price remediation contract is one type of performance-based contract). The Army has now awarded more than 40 cleanup PBCs on active and/or excess installations, representing activities in all 10 EPA Regions and 28 states. In addition, more than 10 PBCs have been awarded at Army Base Realignment and Closure (BRAC) installations.
- The goal that was initially set in 2003 of having 3-5% of program dollars on PBCs has increased in FY06 to 60% of program dollars on PBCs, or nearly \$240 million.
- In the Spring of 2004, the Acting Secretary of the Army gave commendations to three Army staff members for their success in implementing the GFPR [PBC] initiative. PBCs reported \$32.9 million cost avoidance at that time.
- Although there is evidence of potential cost avoidance through competitive procurement and the inherent flexibility of the contract mechanism, the real question on PBCs to be answered is:

Are PBCs delivering all that was hoped for?



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hoped?*

Notes

- The Army's primary goal in implementing PBC was to lock in completion dates of cleanup and to cap costs. Because of the period of performance on many of the contracts is 10 years, cost and schedule are difficult to measure early on in the contract execution. In fact, whether performance objectives are consistently being met may not be known for many years.
- One metric that is often reported is the cost avoidance. Cost avoidance refers to the difference between the total cost of the awarded PBC and 1) the independent government cost estimate for the scope of activities encompassed in the PBC; or 2) the Installation estimate to complete the scope of work reflected in the cost-to-complete used for planning and budgeting purposes. While there is some debate as to whether the government projections accurately reflect remediation costs, reducing funding requirements has allowed the Army to effectively increase the amount of money it can program toward new projects. In essence, it has met one of its primary goals -- to get more of the installation restoration program dollars out to installations, addressing real on-the-ground problems. To date, the Army has seen cost avoidance in the range of 21.3% (when comparing to the Independent Government Estimates) and 33.8% (when comparing to the Army's cost-to-complete estimates).

Why did the Army Pursue PBC?

- Performance-Based Contracting is intended to improve cost and schedule performance without compromising cleanups that are protective of human health and the environment
 - ✓ Lowers risk of cost growth
 - ✓ Accelerates cleanup / property transfer through fixed schedules
 - ✓ Reduces contract reporting and oversight
 - ✓ Can be aligned to exit strategies or used to optimize systems
 - ✓ Cost effective / lower remediation costs
 - ✓ Incentivizes use of innovative and cost-effective remedies
 - ✓ Shifts staff time from budgeting to technical review and problem resolution
 - ✓ Promotes use of innovative cleanup approaches

- The Army's intent was to apply proven private sector cleanup management practices to the Army's environmental restoration program

Notes

- Existing data gives some indication of PBC success. Prior to 2003, estimates for completion increased each year and 70% or less of the milestones were met. The Army recognized that it needed to change its cleanup strategy. Part of the change included the use of PBC, which has already realized over \$215M in cost avoidance (see previous discussion).

- So far, PBC contracts have also been effective in locking in costs and final completion schedules through:
 - √ Performance Standards,
 - √ Fixed price contracts, and
 - √ Insurance.

- In conjunction with PBC, US Army Corps of Engineers Districts management and technical support costs have been renegotiated resulting in a savings of \$21M which has been reinvested into additional cleanup projects.

- Since FY 2004, overall Installation completion has surpassed projections.

What do we know from existing data?

There is some indication of the success of PBC

- Cost Avoidance has been achieved
- PBC has been effective in locking in costs and final completion schedules
- Changes in environmental management strategy to line up with PBC goals and intents has resulted in cost savings
- Improvement in Installation completion has been realized

Notes

- Given the challenges in measuring performance mentioned in the previous slide, the Army initiated a study to determine whether milestones originally identified by the PBC contractors in their project management plans could be used as a baseline to measure/track schedule performance.
- Results of individual installation reviews are not included in this report, but data are used anecdotally to substantiate the overall conclusions presented in the presentation. Questions on this briefing should be submitted to PBC.Team@aec.apgea.army.mil.

Performance Analysis of Seven PBC Contracts

- Overview
 - ✓ Purpose of Analysis
 - ✓ Analysis Methodology
 - ✓ Analysis Results
 - ✓ Recommendations for Improvement
 - ✓ Conclusions

Notes

- The purpose of this study is to focus on the original intent of the PBC Initiative – to determine whether the Army has been successful in locking in the completion dates for cleanup and capping the costs for those cleanups. To accomplish this, data were reviewed from the first seven (7) PBCs awarded from 2001 to 2003 at active installations to determine:
 - ✓ Has sufficient work been accomplished to determine whether the contractors are meeting their performance objectives?
 - ✓ Is work being completed on time, and according to the original agreed upon schedule?
 - ✓ Are there identifiable drivers causing either schedule delays or schedule acceleration?

- These installations were selected because the contractors have been working at the installations for 2-4 years. While it was not expected that a large number of the performance objectives would have been reached at the time of the analysis, the Army believed that a trend could be determined based on work completed to date.

- Results of this analysis are being incorporated into the lessons learned and process improvement paper for the PBC Initiative.

Purpose of Analysis

- While there is sufficient evidence that PBCs have demonstrated significant cost avoidance, the Army needed to determine whether contractors working within the PBC framework have improved schedule performance.
- The purposes of this study are to:
 - √ Assess the progress made toward achieving PBC performance objectives
 - √ Identify driving factors for schedule delays and/or acceleration
 - √ Provide input into the on-going lessons learned/process improvement for the PBC initiative

Notes

- The Army reviewed the status of the seven active installation PBCs that were awarded from 2001 to 2003. The review started by obtaining the original schedules provided to the Army by the contractors in their proposals. In the case of the 2003 awards the Army reviewed the Project Management Plan (PMP), the first deliverable required in the PBCs starting in 2003. Within the schedules, the team identified major milestones that could be used to establish a schedule baseline and tracked against progress made to date (as of November 2005). These milestones include activities typically required in a Federal Facility Agreement or RCRA permit (e.g., Remedial Investigation/Feasibility Study (RI/FS) complete, Record of Decision (ROD) signed, Statement of Basis approved, etc.) as well as achievement of site closeouts (as defined by the Defense Environmental Restoration Program (DERP) program guidance) tracked in AEDB-R, including Remedy in Place and Response Complete.

Analysis Methodology

- Compared baseline schedules from approved Project Management Plans (or their equivalent) to current schedules for activities and milestones
 - √ Reviewed 7 PBCs awarded in 2002 and 2003
 - Fort Gordon, GA
 - Fort Leavenworth, KS
 - Fort Jackson, SC
 - Lake City Army Ammunition Plant, MO
 - Fort Dix, NJ
 - Sierra Army Depot, CA
 - Ravenna Army Ammunition Plant, OH

- When available, the milestones used were:
 - √ Remedial Investigation / RCRA Facility Investigation (RI/RFI) or Feasibility Study / Corrective Measures Study (FS/CMS)
 - √ Statement of Basis (SB), Decision Document (DD), or Record of Decision (ROD)
 - √ Response Complete (RC), Remedy in Place (RIP), or No Further Action (NFA)

Notes

Where data on major milestones were not yet available (i.e., the project was not far enough along to have a signed Decision Document or achieve Remedy in Place), internal project milestones were used. These are milestones such as submittal of a Remedial Action Workplan for review and approval, draft documents to the Army for review, major data collection campaigns completed, etc.

The 128 milestones can be categorized as follows:

- 39 Closure/Remedial Action (RA) Complete/Response Complete (RC)/No Further Action (NFA)
- 5 Decision Document (DD)
- 9 Feasibility Study (FS)
- 7 Field Installation
- 7 Final Data Report
- 20 Final Work Plans/RA Work Plan
- 13 RCRA Facility Investigation (RFI)/Corrective Measures Study/Remedial Investigation (RI)
- 3 Record of Decision (ROD)
- 10 Remedy in Place (RIP)
- 5 Soil Removal
- 10 Statement of Basis (SB)

For each milestone identified that was planned to be complete by November 2005 (the date of the analysis), the Army categorized it as completed on time or early; completed behind schedule (by more or less than six months); or past due (and by how much).

Once the schedules were reviewed and data compiled, the Army contacted representatives from the contractors, installations, and the Contracting Officer's Representatives (CORs) to discuss the overall findings, verify that the findings were representative of what they were experiencing at the installations, and to identify reasons for the contractors being ahead of or behind schedule.

Analysis Methodology (cont)

- Where major milestones were not available, discrete activities such as submittal of remedial action work plans were used for comparison
- 128 major milestones or activities at the seven installations were identified and compared to the original schedules
- Milestones or major activities were identified as:
 - √ Completed on time or early,
 - √ Completed late (< 6 months & > 6 months), or
 - √ Past due as of 30 Nov 2005 (< 6 months & > 6 months).
- Discussions were held with appropriate USAEC, US Army Corps of Engineers, and Contractor personnel to determine reasons for early, late, or incomplete milestones and/or tasks


Notes

- When trying to determine why so many of the milestones were late, the underlying activities were examined. What was immediately evident was the “cascade” effect where the first activity in a series of activities required to complete a milestone was late. All the subsequent activities and the associated milestone were late, and in some cases the contractors had not included enough flexibility in their schedule to be able to make up the time. For example, a soil removal activity was late in starting. Assumptions in the schedule for cubic yards removed, number of truck loads, etc., tied down the duration and when the first activity was delayed, all the rest were delayed, even though all associated activities were completed within the proposed schedule durations.
- An average of 54% of the late milestones were the results of previous late activities/milestones. Schedules and milestones that follow are generally completed in the timeframe estimated even though the end date may be delayed. If the initial activities were started on time, it is reasonable to assume that there could have been an additional 38% completed on time, for a potential total of 68% on time completions.


Analysis Results


- Milestones


Of the 128 total milestones/major activities due as of 30 Nov 2005:

 38 (30%) were completed on time or early

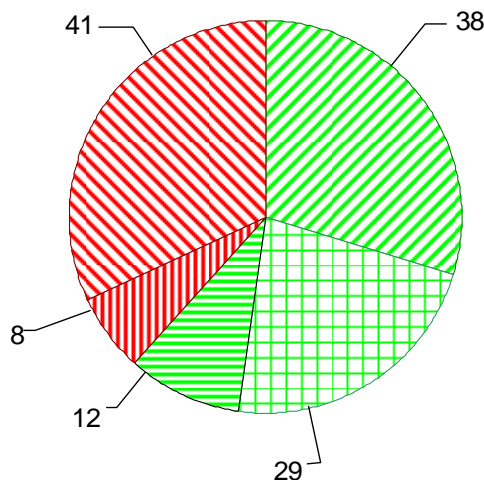
 8 (6%) are less than 6 months overdue

 29 (23%) were completed less than 6 months behind schedule

 41 (32%) are more than 6 months overdue

 12 (9%) were completed more than 6 months behind schedule

Status of Milestones Due as of November 2005



48 Milestones were (or are) late due to a “cascade” effect (i.e., these milestones are late due to earlier milestone schedule delays.)

Notes

- The project schedule milestones at two installations were delayed during the legal review because the decision documents did not clearly demonstrate unacceptable risk, as required by CERCLA, or identify a specific legal driver. Legal had not been kept informed of discussions between all parties and did not understand the decisions being made. Interactions between these parties are dynamic and often result in agreements to keep projects moving forward.
- At one installation, several sites were delayed due to invalid assumptions on the part of the contractor about internal reviews (they assumed regulators would review multiple documents simultaneously), with additional sites delayed for negotiations on how Land Use Controls would be incorporated into the RODs.
- Multiple site schedules were delayed at all 7 installations due to delays in the Regulator review. (e.g., Regulator resources could not support schedule due to issues such as a conflict in priorities, current resource limitations, and lack of authorization to hire or contract new resources.)
- At 3 installations, regulators did not buy in to PBC concepts, especially accelerated schedules, and indicated that they had PBC imposed on them without their concerns addressed prior to contract award.

Analysis Results

-Factors Causing Schedule Delays

Reviews:

- Legal review of documents can result in delays due to a lack of information and understanding of agreements between CORs, project managers, contractors, and regulators.
- Contractors often meet first internal project deadlines, but miss the first milestones that involve a regulator review.
- Regulator review may cause delays due to resource limitations. In addition, regulator priorities may not align with PBC priorities.
- Initial meetings/reviews with regulators often went poorly due to lack of buy-in and support by regulators prior to contract award.
 - √ NOTE: Discussions with regulators indicate that this perception/attitude is changing

Notes

Technical

- At one installation, several delays occurred: 1 site was delayed due to unanticipated size of plume which delayed another site (originally included with the groundwater site). The second site was subsequently separated from the first after additional sampling demonstrated no connectivity between the two; 1 site delayed due to lack of funding; 1 was site delayed due to delay in field activities.
- At one installation, 1 site was delayed due to incorrect technical planning assumptions when the contractor planned the remedial approach based on initial data, prior to completely understanding site issues.

Planning

- At 3 installations, schedules included regulator reviews of more than one site at the same time. Due to resource restrictions, reviews were limited to one at a time.
- At one installation, 1 site was delayed due to a Regulator requirement for new monitoring plan that had not been included in the contractor's PMP;
- At one installation, multiple site milestones were delayed due to collective inclusion in one ROD (i.e., one of the sites in the ROD slowed down progress on other sites because it was more technically challenging than the others.)

Analysis Results

-Factors Causing Schedule Delays

Technical Issues

- Existing data were not always sufficient to correctly plan for the scope of remediation
- Initial data did not lead to the correct remediation approach decisions

Planning Assumptions:

- Schedules prepared in response to performance objectives in the Performance Work Statement (PWS), included assumptions about time saving techniques such as concurrent/parallel reviews of documents which did not work out in practice.
- Schedules did not include enough time to respond to new requirements identified through the regulator review process.
- Consolidating cleanup documents for multiple sites in an effort to improve cost effectiveness delayed meeting individual site milestones.

Notes

- At one installation, 15 sites were delayed due to the incumbent contractor being late in completing their RFIs (in this case, the PBC contractor finally moved forward on doing the RFI's themselves in order to make progress).
- At one installation, RODs were affected by new (unanticipated) state regulations on Land Use Controls.
- After one PBC was awarded & work started, the state imposed new Covenant Statute (land use controls) that required extensive negotiations to develop acceptable ROD language documenting land use controls.
- At two installations, negotiations of existing Land Use Controls delayed permit modifications, remedial designs, and ROD reviews up to one year.
- At all installations, when a site is delayed, resources were not able to be reallocated due to the direct tie of funding to site. (At one installation, a contract change allowed contractor to reallocate resources as long as overall funding authorization was not violated.)

Analysis Results

-Factors Causing Schedule Delays

Other:

- Delays are caused by reliance on incumbent contractors to complete work/hand off, i.e., the lack of incentives has adversely affected turnover and deliverables. Examples:
 - √ In order to maintain schedules, one contractor has taken over finalizing RFIs from incumbent contractors.
 - √ Conclusions by incumbent contractors do not always agree with PBC contractor logic or solutions.
- Unanticipated events such as new state covenant statutes or complete regulator personnel turnover have forced some delays.
- Negotiations between Army and regulators on Land Use Controls delayed permit modifications, remedial designs, and ROD review and approvals by up to one year.
- Structure of PBC contracts prevented moving resources to another site that had not been specifically funded.

Notes

- Quality

- ✓ At one installation, comments indicated surprise to learn that the low bidder would not cut corners during execution.
- ✓ At one installation, the contractor is fully meeting Army expectations and has proposed more than was needed in some cases.
- ✓ At all installations, the quality of work has been reported from good to Going beyond requirements.

- Responsiveness

- ✓ At one installation, the contractor overall is doing very well. “They are responsive and trying very hard to keep on schedule.”
- ✓ At several sites where there were delays due to dependence on incumbent performance, PBC contractors have performed work arounds to keep moving forward during delays.
- ✓ At one installation where the regulator was not ready for PBC resulting in negative feelings towards the whole team, the contractor spent significant effort getting in working with the regulator and agreeing to additional actions in the spirit of partnering.
- ✓ At one installation, the contractor has been “very responsive to both regulator and Army comments.”

Analysis Results

- Quality/Responsiveness

Performance of PBC Contractors in terms of Quality and Responsiveness was indicated through comments received during interviews with CORs; installation POCs, RPMs, & ECs; and AEC RMs

- √ The Quality of the work and documentation of PBC contractors has been good to excellent
- √ PBC contractors have been very responsive to Regulators, Army, and AEC oversight.

Notes

Contractor Considerations:

- Contractor planning and scheduling should take into account:
 - ✓ turnover required from incumbent contractors
 - ✓ tracking individual sites instead of grouping sites
 - ✓ external approval authorities
- None of these factors are bound by PBC contracts, and thus have the potential to adversely affect schedule performance if they are not appropriately planned

Army Considerations:

- Regulator approvals have the potential to significantly affect the ability of the PBC contractor to meet contract requirements. As such, it is imperative that regulators be brought into the planning to attempt to obtain their buy-in to the process and the overall schedule. Regulators should never have the opportunity to assert they have been blind-sided or surprised by the PBC.
- Incumbent contractors have power to affect PBC performance due to a lack of incentive to turnover products/deliverables, records, facilities, etc. to PBC contractors or to support PBC schedules. In many cases, incumbent contractors are unsuccessful bidders for PBCs.

Project managers/AEC managers should be involved with incumbent and PBC contractors to help ensure the orderly and expeditious turnover between contractors and to help resolve issues that may hinder PBC execution.

- In many cases, decisions must be made quickly to ensure projects can continue. These decisions are often made in the field with informal input from involved parties. It is important that these decisions and the logic/basis of the decision be communicated to all reviewing parties to ensure the projects are not held up at the end.

Analysis Results

- Lessons Learned

- Considerations for Contractors
 - √ For activities reliant on incumbent contractors, assumptions on receipt of deliverables or turnover activities may not be valid and contingent planning should be considered.
 - √ Grouping sites in documents to assume efficiencies in document review and approval may lead to overall cleanup delays if one sites has any individual delay.
 - √ Working with the regulator to obtain agreement on document review process is critical to minimize review delays as regulators probably will not be able to support multiple/concurrent document reviews.
 - √ Set up PBC contracts to start when RFI/RI is in draft.
- Army Considerations
 - √ Continued emphasis on regulator buy-in should be an early part of contract/proposal process.
 - √ Strong advocacy and involvement with incumbent contractors, installation personnel, and regulators is needed to ensure the PBC contractor can obtain information needed to effectively execute contract requirements and meet schedule milestones.
 - √ Continuous/effective communication between affected parties (USAEC, Installation, Legal, Regulators, etc.) should be initiated early in contract implementation to keep information between affected parties current.

Notes

- Current information on PBC performance is not consistent or complete. Individual PBC managers may have sufficient knowledge to track individual installation performance, but comparing installations or the overall status of PBC is not possible from currently documented information.
- In order to help ensure AEC can continue to validate the performance of PBC and to continuously improve PBCs, criteria for tracking and status of the program should be developed. The criteria should be developed in such a way that activity performance at all sites is measured similarly.
- For those activities that are delayed, fall behind, or take longer than planned, criteria should be developed to require recovery plans that are proposed, reviewed, and agreed by the contractor, regulators, and AEC.

Recommendations for Improvement

- Current PBC Contracts
 - √ Increase emphasis on periodic contractor status reports against specific performance measurement milestones and schedules.
 - √ Request a specific contractor recovery plan for each PBC that has Sites behind schedule.
 - The plan should include performance measurement milestones.
 - The plan should include periodic contractor status reporting.
 - √ Ensure Quality Assurance Surveillance Plan (QASP) is being implemented.
- Future PBC Opportunities
 - √ Engage Regulators early in the proposal process to ensure PBCs address regulator constraints/concerns.
 - √ Establish schedule development parameters to include specific performance measurement milestones.
 - √ Establish specific periodic status reporting requirements.
 - √ Where/when appropriate include incentives for meeting/beating schedules for truly critical sites.

Notes

- PBC bounds contractors by cost and schedule. Contractors are protecting their investments by innovative approaches to completing the work in a way that meets end state requirements within the contracted schedule limits.

Examples:

- At one installation, a site was behind schedule due to incomplete understanding and incorrect assumptions on technical approach to cleanup. The Contractor is changing its approach and performing a study that is expected to close site with an NFA DD, making up the 2 year lag and completing actions before contract end date.
- At all installations with PBCs, pre PBC contractors in large part were proposing/using “pump and treat” approaches to site cleanup. PBC contractors have used various in-situ approaches to accelerate schedules and cut costs while still meeting cleanup criteria.

Conclusions:

Are PBCs Delivering all that was hoped?

- PBC contractors in general are meeting or beating schedule dates where they have control over resources and deliverables
- Although internal working schedules are shifting and are frequently late when compared to the original baseline schedules, contractors are generally on track to achieve the final performance objectives
- Contractors appear to be on track to meet completion dates for High Relative Risk Site Evaluation (RRSE) Sites
- Bottom Line: PBCs appear to maintain overall schedule performance in spite of the unanticipated glitches encountered and late milestones.
 - ✓ Contractors are taking innovative and/or necessary actions to meet end dates
 - ✓ There is no indication that overall schedule completion will be compromised

For more information:

The USAEC website
<http://aec.army.mil/usaec/cleanup/pbc00.html>
provides additional information on the PBA
initiative.

Questions related to this report or the Army's PBA
initiative should be directed to US Army
Environmental Command
(PBC.Team@aec.apgea.army.mil).