# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Buffalo Field Office
1425 Fort Street
Buffalo, Wyoming 82834-2436

TAKE PRIDE IN AMERICA

APR 04 2007

Dear Operator,

There has been some confusion regarding the submission of information relative to "primary" and "secondary" impoundments so that it does not present an unnecessary economic burden for operators. This letter is intended to clarify the Buffalo Field Office's (BFO) bonding policy in regard to the responses we have received to the Written Orders and Incidents of Non Compliance recently sent to many operators requiring bonding to be filed.

On September 19, 2005, and November 6, 2006, the BLM Buffalo Field Office issued policy on the requirement for bonding of water impoundment facilities developed to handle coal bed natural gas produced water. These letters can be found on our Buffalo Field Office website at: http://www.blm.gov/wy/st/en/field_offices/Buffalo/minerals.html, under the "Letters to Operators" heading.

Our office is requiring that all primary impoundments need to be bonded prior to POD approval. If your company is unsure if you need to construct impoundments that were included in an approved Water Management Plan, we are requesting that you send this office a letter stating that these impoundments are secondary, and are not presently needed. Note that if they are needed in the future, you will be required to send in a Sundry Notice, along with the evidence of the required bonding information, to inform us of your intent to construct the impoundment.

Please be aware that at the time of your POD submittal, primary impoundments that you have identified in your Water Management Plan should have enough capacity for a viable water balance. Companies are strongly encouraged to include secondary water impoundments in your original POD and Water Management Plan so that the NEPA analysis can be completed. This will help expedite approval of these impoundments if their construction becomes necessary.

To clarify "evidence of bond/bond rider submission" as stated in the November 6, 2006 letter, operators are required to provide the Buffalo Field Office a signed copy of the bonding instrument submitted to the respective BLM State Offices that are used to acquire the bond. Please include the following in a cover letter:

1. Place of Bond, (i.e., WYSO, NMSO, MTSO, UTSO, etc.)
2. POD name(s)
3. Impoundment name(s)

4. Legal location(s), Township, Range, Section, ¼, ¼
5. Bond amount of each impoundment and a total
6. Oil & Gas Bond number that the rider is being attached to, if available

For PODs submitted prior to November 6, 2006, that had included professional engineers estimates for their impoundments, operators have the option to either use their existing estimates, or submit new estimates using the unit cost approach.

Our office is encouraging the drilling of investigative wells for shallow ground water detection (WDEQ required monitoring wells) prior to POD submittal to determine the feasibility of constructing impoundments. You will need BLM approval prior to conducting this activity on Federal surface. This will help our field personnel conducting on-sites, and could expedite POD approvals.

The last point that we would like to address concerns by-pass channels. If you are planning to construct by-pass channels around your impoundments, you will be required to include the reclamation costs of these by-pass channels in your impoundment bond amount. The amount of dirt work (cubic yards) involved in construction of the bypass channel will be added to the dam's earthwork volume.

The Buffalo Field Office has updated the Reclamation Cost Estimate for Impoundments. This worksheet can be found at: http://www.blm.gov/style/medialib/blm/wy/bfo/worksheets.Par.25072.File.dat/Engineer_Reclamation_Estimate.doc . We have also enclosed a copy for your reference. The second and third pages of that document can be omitted from submission. These pages are instructions.

If you have any questions about this information, please call Randy Nordsven, Kathy Brus, or Casey Freise at 307-684-1100.

Sincerely,

Chris Hanson
Field Manager

Enclosures
September 19, 2005 Reservoir Bonding Policy Letter
November 6, 2006 Reservoir Bonding Policy Letter
Reclamation Cost Estimate Worksheet

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Buffalo Field Office
1425 Fort Street
Buffalo, Wyoming 82834-2436

TAKE PRIDE IN AMERICA

NOV 06 2006

Dear Operator,

On September 19, 2005, the Buffalo Field Office issued a policy on how we would require bonding of water impoundment facilities developed to handle coal bed natural gas produced water. This letter can be found on our Buffalo Field Office website at http://www.wy.blm.gov/bfo/operator_letters/2005_0919.pdf. The following modifications are intended to simplify and expedite that existing policy. The modifications are (1) the process for approving reclamation estimates for smaller impoundments has been changed by adopting a unit cost approach, (2) evidence of submission of a bond/bond rider will be accepted in lieu of an approved bond/bond rider and (3) the date for POD/APD's requiring bonding prior to approval has been adjusted to January 1, 2007..

Reclamation cost estimates will still be required for all impoundments, but only the ones with an embankment volume over 10,000 cubic yards will require a professional engineer's estimate and certification. The details and criteria for estimates are described below.

Modifications/clarifications made to the September 19, 2005 letter are as follows:

**I. General Requirements**

- Bond amounts will be determined by a unit cost approach where embankments are less than 10,000 cubic yards. For all embankments less than 10,000 cubic yards, multiply the cubic yards (e.g. embankment volume from line 8a on State Engineer's Office Form SW 3 or line 9a on Form SW-4) of the embankment by $2.50 to determine the bond amount.
- Bond amounts will be determined by a professional engineer's estimate where embankments are greater than 10,000 cubic yards. For embankments greater than 10,000 cubic yards, a professional engineer's estimate will be required and the greater of the engineer's estimate or $25,000, will determine the bond amount.
- Evidence of submission of an adequate bond/bond rider to the appropriate BLM State Office will be required in lieu of bond approval prior to POD/APD approval or to meet the 90-day Condition of Approval requirement.

**II. Implementation Timeframes & Processes**

Plans of Development/ APD's that have been approved or will be approved prior to January 1, 2007

- BLM will keep the Condition of Approval on the approved POD/APD that operators will have 90 days from the approval date to submit the bond(s) or bond rider. Reservoirs that are without a submitted bond 90 days after approval will be subject to an enforcement action.

Plans of Development/APD's submitted or approved after January 1, 2007

- PODs submitted without reclamation cost estimates will be considered incomplete and will not be assigned until this requirement has been met.
- Evidence of bond/bond rider submission will be required prior to approval of the POD/APD.

Enclosed are guidelines for developing reclamation cost estimates. This worksheet and narrative explanation should be used for containment structures which are 10,000 cubic yards or greater, but is recommended for all impoundments.

If you have any questions about the applicability of this Federal bonding modification, please see our letter dated September 19, 2005. If you have any other questions, please call Randy Nordsven, Kathy Brus or Casey Freise at 307-684-1100.

Enclosures
-September 19, 2005 Reservoir Bonding Policy Letter
-Guideline for Professional Engineer's Estimate of Reclamation

Sincerely,

Chris E. Hanson
Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Buffalo Field Office
1425 Fort Street
Buffalo, Wyoming 82834-2436

TAKE PRIDE IN AMERICA

SEP 15 2005

3160

Dear Operator,

The Bureau of Land Management (BLM) has been working with the State of Wyoming to develop a process which will cooperatively cover reclamation issues, avoid duplication and insure maximum consistency associated with the construction and bonding of water impoundment facilities that receive produced water from coal bed natural gas (CBNG) wells. The BLM-Buffalo Field Office (BFO) entered into an agreement with the State of Wyoming on October 24, 2002 to address off channel pits. Under that agreement, the Wyoming Oil and Gas Conservation Commission (WOGCC) has bonded off-channel pits located over private and state minerals and BLM agreed to bond pits over federal minerals.

The BLM is currently requiring bonds for water impoundment facilities on federal surface permitted subject to Right of Way (ROW) authority (43 CFR, 2800). The BFO has now developed the processes and criteria for bonding those facilities located over federal minerals that are permitted subject to Oil & Gas authority (43 CFR, 3100). This letter provides CBNG operators the basic requirements and timeframes for this office's water impoundment bonding program subject to both the oil & gas and ROW authorities.

**I. General Requirements**

- The BLM will require bonds or bond riders for on-channel reservoirs and off-channel pits that receive or will receive produced water from Federal CBNG wells related to a federally approved action over federal minerals. Refer to Attachment #1.
- Bond amounts will be determined by a professional engineer's estimate of total reclamation costs
- Bond adequacy will be reviewed by BLM every 5 years and bond adjustments will be required following proper notification and documentation
- No duplicate bonding from both BLM and agencies of the State of Wyoming will be imposed on any water impoundment

## II. Implementation Timeframes & Processes

These provisions became effective on September 1, 2005.

**Oil & Gas Operations**

Plans of Development/APD's approved prior to July, 2003 and No Condition of Approval for Future Bonding was included in the Approval

- BLM will not require a retroactive bond for water impoundments

Plans of Development/APD's approved since July, 2003 and a Condition of Approval for Future Bonding was included in the Approval

- BFO will inventory all PODs approved since August, 2003 and send a separate letter notifying operators of the required bond amount(s) and notice that they will have 90 days to post the bond(s) or bond rider. Where a professional engineer's estimate of reclamation cost was not included in the original POD submission, the operator will be required to submit this information
- BFO will identify any oversights in POD approvals where a Condition of Approval was inadvertently not attached to the POD approval, amend that approval, and notify the operator by separate letter of the bond amount(s) and that they will have 90 days to post the bond(s) or bond rider

Plans of Development/APD's submitted prior to September 1, 2005 but not approved

- BLM will put a Condition of Approval on the approved POD/APD that operators will have 90 days from the approval date to post the bond(s) or bond rider

Plans of Development submitted after September 1, 2005

- Operators must post the bond(s) or bond riders prior to approval of the POD/APD
- Operators who are uncertain whether all proposed water impoundments will be constructed at the time of POD submission should prioritize their water impoundments at the time of POD submission or following the onsite field inspection. BLM will require bonding prior to approval for all "primary" water impoundments and will add a Condition of Approval to the POD that any "secondary" water impoundments must be bonded prior to construction and that a Sundry Notice be submitted to BLM prior to construction.
- The professional engineer's estimate of total reclamation cost must be submitted with the POD/APD submission. The BLM-BFO engineer will determine the adequacy of the proposed bond amount and notify BLM-Wyoming State Office, Fluid Minerals Section (WY-921) of the adequacy of the bond or bond rider with a copy to the operator
- WY-921 will provide a decision of the bond adequacy to the operator with a copy to BFO

Termination/adjustment of Bond(s) or Bond Riders

- All requests for bond adjustment or termination of period of liability must be submitted to BLM-Wyoming State Office, Fluid Minerals Section (WY-921). WY-921 will consult with BFO who will conduct a field inspection prior to a recommendation of bond adjustment. WY-921 will issue a decision regarding bond adjustments
- Operators may request partial bond reduction as individual water impoundments are reclaimed. BLM will consider these on a case-by-case basis, provided that the bond or bond rider has included specific impoundment names or numbers and the associated bond amount
- BLM will consider, on a case-by-case basis, requests from operators to leave water impoundments in place in lieu of reclamation on fee surface overlying federal minerals. This determination will only be considered at the time of abandonment with a signed waiver from the current fee surface owner that waives liability to the United States for all past and future activities

**Rights-of-Way (ROW)**

- Operators must submit a bond prior to right-of-way approval
- A separate bond must be filed for each ROW action. Similar facilities may be included in a single ROW action
- The professional engineer's estimate of total reclamation cost must be submitted with the right-of-way submission. The BLM-BFO engineer will determine the adequacy of the proposed bond amount and advise the realty staff
- All requests for bond adjustment must be submitted to BLM-Buffalo Field Office realty staff. BFO realty staff will conduct a field inspection prior to a recommendation of bond adjustment. BFO will issue a decision regarding all bond adjustments
- Operators may request partial bond reduction as individual water impoundments are reclaimed. BLM will consider these on a case-by-case basis, provided that the bond has included specific impoundment names or numbers and the associated bond amount

## III. Bonding Authorities, Types and Requirements

The BLM-BFO is implementing the existing authority found at 43 CFR, Part 2805 (Rights-of-Way) and 43 CFR, Part 3104 (Oil & Gas Operations) for these bonds.

The types of bonds, bond forms and information about submitting bonds are provided in Attachments #2 and #3 to this letter. Additional information is available by contacting Debra Olsen @ 307-775-6166 or Judy Oldenburg @ 307-775-6188, Land Law Examiners at the BLM-Wyoming State Office.

The applicability of BLM's water impoundment bonding requirements is associated with determining whether there is a Federal action over Federal minerals. The chart found in Attachment #1 and the scenarios found in Attachment #4 are provided to assist operators in determining the applicability of the federal and state bonding requirements. Additional information is available by contacting Richard Zander, Randy Nordsven or John Kolnik at the BLM-Buffalo Field Office at 307-684-1100.

Sincerely,

Chris E. Hanson
Field Manager

Attachment(s) 4

Attachment 1

**Side by Side Comparison of the State of Wyoming and U.S. Bureau of Land Management Bonding Requirements for CBNG Produced Water Retention Reservoirs / Pits**

| Scenario No | Surface Estate | Mineral Estate | On-Channel Reservoirs | Off-Channel Pits |
|---|---|---|---|---|
| 1 | Private | Private | WDEQ[1] | WOGCC[2] |
| 2 | Private | State | WDEQ[1] | WOGCC[2] |
| 3 | Private | Federal | BLM[3] | BLM[3] |
| 4 | State | State | WDEQ[1] | WOGCC[2] |
| 5 | State | Federal | BLM[3] | BLM[3] |
| 6 | Federal | Federal | BLM[3] | BLM[3] |
| 7 | Federal | State or Private | BLM[3] | BLM[3] ROW in coordination w/ the WOGCC[2] and/or OSLI[2] |

[1] Denotes WDEQ bonding requirement as follows:

- $7,500 for reservoirs less than 5,000 cubic yards of earthwork;
- $12,500 for reservoirs greater than 5,000 and less than 10,000 cubic yards of earthwork;
- For reservoirs greater than 10,000 cubic yards of earthwork, the security amount must be based upon a certified professional engineer's estimate of reclamation including costs to remove pipes, concrete and other structural components.

[2] Denotes WOGCC or the Office of State Lands and Investments (OSLI) bonding requirement is as follows:

- The security amount is based upon a written estimate prepared by a Wyoming registered professional engineer's estimate with expertise in surface pit remediation.

[3] Denotes BLM bonding requirement as follows:

- The security amount is based upon a professional engineer's estimate of reclamation costs for the facilities required as part of a POD or Right-of-Way submission.

Attachment #2
Oil and Gas Bonds: 43 CFR, 3104

- Bonds may be posted in the form of a new bond or as a rider to an existing individual lease bond, statewide bond or nationwide bond. If a bond rider is filed, it must be of the same type (i.e. personal or surety bond) as the underlying lease, State or Nationwide bond.
- A bond must be posted to cover the facility or facilities in the full amount (even dollars rounded up to the nearest dollar) of a professional engineer's estimate
- Acceptable forms of bonds are a Surety Bond or a Personal Bond accompanied by the following: Certificate of Deposit, Cashiers Check, US Treasury Security or an Irrevocable Letter of Credit (Form 3000-4)
- A new bond or bond rider must specify each facility being bonded by name or number and bond amount
- All reservoirs, pits and treatment facilities in a single POD can be covered by one bonding action
- Bonds or bond riders must be submitted to the: Wyoming State Office-Fluid Minerals Section (WY-921); P.O. Box 1828; Cheyenne, WY 82003
- The period of liability for bonds may be released after reclamation is successfully completed as determined by the authorized officer or the surface owner agrees in writing to the BLM to accept responsibility for the facilities after the wells in the POD have been plugged

Attachment #3

Right of Way (ROW) Bonds: 43 CFR, 2805

- A bond must be posted to cover the ROW facility or facilities in the full amount (even dollars rounded up to the nearest dollar) of a professional engineer's estimate prior to approval of the ROW
- All reservoirs, pits and treatment facilities can be covered by one ROW bonding action provided they are similar facilities and associated with a single ROW
- Bonds must specify each facility being bonded by name or number and bond amount
- Bonds will be released or adjusted after reclamation is successfully completed as determined by the authorized officer
- Acceptable forms of bond under a ROW action are cash, surety, or book entry deposit (Forms 2800-16 and 2800-17)
- Bonds must be submitted to the: Buffalo Field Office; 1425 Fort Street; Buffalo, WY 82834

Attachment #4
Bonding Scenarios

These examples are provided to assist operators in determining the type of bond that will be applicable (See also, Attachment #1)

1. Federal minerals/federal surface are being developed and produced water will go to a facility on the federal lease being developed. **3104 bond**
2. Federal minerals/federal surface are being developed and produced water will go to a facility on an adjacent federal lease/federal surface which is also being developed. **2805 bond (ROW required)**
3. Federal minerals/federal surface are being developed and produced water will go to a facility on an adjacent federal surface not being developed. **2805 bond (ROW required)**
4. Federal minerals/private surface are being developed and produced water will go to a facility on the federal lease being developed. **3104 bond**
5. Federal minerals/private surface are being developed and produced water will go to an adjacent federal lease being developed. **3104 bond**
6. Federal minerals/private surface are being developed and produced water will go to an adjacent private surface/federal lease not being developed. **3104 bond**
7. Private minerals being developed and produced water will go to facilities located on federal surface. **2805 bond (ROW required)**
8. Federal minerals/private surface are being developed and produced water will go to an adjacent private surface/private minerals. **Bond will be required by the State of Wyoming.**

**Enclosure**

**Guideline for Professional Engineer's Estimate of Reclamation**

- A professional engineer's estimate is required for reservoirs over 10,000 cubic yards. The bonding requirement will be the greater of the engineer's estimate or $25,000. The engineer's estimate shall be based on the following criteria and assumptions:

    - Mobilization and Demobilization costs. These costs may be calculated based on reclamation of multiple sites within close proximity.

    - Treatment of contaminated soil. BLM may require testing sediment deposits for the standard suite of cations, ions, and nutrients that will be monitored in surface water testing and any trace metals found in the CBNG discharges at concentrations exceeding detectable limits. For estimating purposes, assume that all contaminated sediments can be treated or buried on site.

    - Monitor wells will be plugged and abandoned as directed by the Wyoming Department of Environmental Quality.

    - Topsoil stripping. Remove topsoil from embankments and areas to be re-contoured.

    - Excavated material from the reservoir and dam structure shall be placed to meet the approximate original contours. This includes the re-establishment of any previous channel as well as earthwork in surrounding areas that provides a natural appearance closely matching the original landforms, or as otherwise approved during the permitting process. Assume that no large amounts of rock will be moved and that no additional water, mixing, or compaction will be required.

    - Any work on disturbed areas will be scarified prior to placement of reclaimed soils.

    - Channel restoration shall provide a stable profile, matching the original channel characteristics as closely as possible in order to avoid any adverse impacts upstream or downstream of the restoration.

    - Remove and provide off-site disposal for any outlet structures from the original construction.

    - Apply topsoil to the graded areas.

- Scarify, seed and mulch. A BLM approved seed mix and mulch will be used to re-establish vegetation.

- Fence if required. An approved fence design will be used if required to meet the range management goals in the area.

- Erosion Control Measures. Utilize best management practices to design and install erosion control, if required.

- The Engineer's Estimate must be stamped and signed by a professional engineer, registered in the state of Wyoming, and a reclamation plan narrative must be submitted as an attachment to the Engineer's Estimate. The narrative will be reviewed as part of the engineering submittal. Reclamation guidelines will be discussed, reviewed, and approved by BLM personnel during the APD process, and additional information or plan sheets may be requested by the reviewing engineer, on a site-specific basis.

- BLM will evaluate the reclaimed site after two complete growing seasons to determine the efficacy of reclamation efforts in meeting the goals of the surface owner and surface management agency. Bond release will follow successful reclamation and final abandonment of the impoundment area.

- The bond amount will be **re-analyzed every five years,** by field and state office personnel to examine the adequacy of the initial bond costs compared to actual costs at the time.

Engineer's Estimate of Reclamation Costs for Containment Structures

Prepared for

Bureau of Land Management, Buffalo Field Office

1425 Fort Street

Buffalo, WY 82834

Company: _____ Reservoir Name: _____

Prepared By: _____ Drainage: _____

POD Name: _____ Vegetation Type: _____

Lease Number: _____ Soil Type: _____

Legal Description: _____ Embankment Fill: _____

| Item | Unit | Description | Quantity | Unit Cost | Total Cost |
|---|---|---|---|---|---|
| 1 | Lump Sum | Mob/Demob | | | |
| 2 | Lump Sum | Soil and water Treatment | | | |
| 3 | CuYd | Topsoil Stripping | | | |
| 4 | CuYd | Excavation and Contouring | | | |
| 5 | Lump Sum | Remove outlet Structure | | | |
| 6 | CuYd | Apply topsoil | | | |
| 7 | Acre | Scarify, Seed and Mulch | | | |
| 8 | Lump Sum | Fence construction | | | |
| 9 | Lump Sum | Erosion Control Measures | | | |

**NOTE: The Engineer's Estimate must be stamped and signed by a professional engineer, registered in the state of Wyoming. Submit a reclamation plan narrative as an attachment to the estimate.**

Reclamation Cost Estimate for Impoundments
Prepared for
Bureau of Land Management, Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834

Company: _____ Reservoir Name: _____

Prepared By: _____ Drainage: _____

POD Name: _____ Vegetation Type: _____

Lease Number: _____ Soil Type: _____

Legal Description: _____ S.W. 3 or S.W. 4 Contents (See Note B): _____

S.W. 3 or S.W. 4 Contents (<10,000 $yds^3$) X $2.50 = Bond Amount (See Note B): _____

| Optional for Impoundments less than 10,000 $yds^3$ | | | | | |
|---|---|---|---|---|---|
| **Item** | **Unit** | **Description** | **Quantity** | **Unit Cost** | **Total Cost** |
| 1 | Lump Sum | Mobilization/Demobilization | | | |
| 2 | Lump Sum | Soil and Water Treatment | | | |
| 3 | Cubic Yards | Topsoil Stripping | | | |
| 4 | Cubic Yards | Excavation and Contouring | | | |
| 5 | Lump Sum | Remove Outlet Structure | | | |
| 6 | Cubic Yards | Apply topsoil | | | |
| 7 | Acres | Scarify, Seed and Mulch | | | |
| 8 | Lump Sum | Fence construction | | | |
| 9 | Lump Sum | Erosion Control Measures | | | |
| | | | | **Grand Total** | |
| Reclamation Narrative: | | | | | |

**NOTES:**

**A. For embankments of 10,000 cubic yards or more, the estimate must be stamped and signed by a professional engineer, registered in the state of Wyoming. The total cost will be the bond amount (minimum $25,000.00).**

**B. For all embankments of less than 10,000 cubic yards, multiply the cubic yards (e.g. Contents from line 8a on State Engineer's Office Form S. W. 3 or line 9a on Form S.W. 4) of the embankment by $2.50 to determine the bond amount. These estimates do not require a Professional Engineer's Certification.**

## Please omit the following from submission:

**Guideline for Professional Engineer's Estimate of Reclamation**

- A professional engineer's estimate is required for reservoirs over 10,000 cubic yards. The bonding requirement will be the greater of the engineer's estimate or $25,000. The engineer's estimate shall be based on the following criteria and assumptions:
    - Mobilization and Demobilization costs. These costs may be calculated based on reclamation of multiple sites within close proximity.
    - Treatment of contaminated soil. BLM may require testing sediment deposits for the standard suite of cations, ions, and nutrients that will be monitored in surface water testing and any trace metals found in the CBNG discharges at concentrations exceeding detectable limits. For estimating purposes, assume that all contaminated sediments can be treated or buried on site.
    - Monitor wells will be plugged and abandoned as directed by the Wyoming Department of Environmental Quality.
    - Topsoil stripping. Remove topsoil from embankments and areas to be re-contoured.
    - Excavated material from the reservoir and dam structure shall be placed to meet the approximate original contours. This includes the re-establishment of any previous channel as well as earthwork in surrounding areas that provides a natural appearance closely matching the original landforms, or as otherwise approved during the permitting process. Assume that no large amounts of rock will be moved and that no additional water, mixing, or compaction will be required.
    - Any work on disturbed areas will be scarified prior to placement of reclaimed soils.
    - Channel restoration shall provide a stable profile, matching the original channel characteristics as closely as possible in order to avoid any adverse impacts upstream or downstream of the restoration.
    - Remove and provide off-site disposal for any outlet structures from the original construction.
    - Apply topsoil to the graded areas.
    - Scarify, seed and mulch. A BLM approved seed mix and mulch will be used to re-establish vegetation.
    - Fence if required. An approved fence design will be used if required to meet the range management goals in the area.

- Erosion Control Measures. Utilize best management practices to design and install erosion control, if required.

- The Engineer's Estimate must be stamped and signed by a professional engineer, registered in the state of Wyoming, and a reclamation plan narrative must be submitted as an attachment to the Engineer's Estimate. The narrative will be reviewed as part of the engineering submittal. Reclamation guidelines will be discussed, reviewed, and approved by BLM personnel during the APD process, and additional information or plan sheets may be requested by the reviewing engineer, on a site-specific basis.

- BLM will evaluate the reclaimed site after two complete growing seasons to determine the efficacy of reclamation efforts in meeting the goals of the surface owner and surface management agency. Bond release will follow successful reclamation and final abandonment of the impoundment area.

- The bond amount will be **re-analyzed every five years,** by field and state office personnel to examine the adequacy of the initial bond costs compared to actual costs at the time.