



Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.




Matthew H. Mead, Governor

Todd Parfitt, Director

MEMORANDUM

To: Wyoming Coal Operators

From: Alan Edwards, DEQ Deputy Director/Acting Land Quality Administrator 

Date: January 29, 2015

RE: **New version of the Coal Annual Report Format (CARF)**

Please find attached the revised version of the CARF, signed on December 31, 2014. This revised CARF replaces the November 18, 2011 version. The revisions to this version of the CARF were reviewed and commented on by the Coal Working Group. This group includes Land Quality Division (LQD) staff members, Wyoming Coal operators, consultants, a representative of the Wyoming Mining Association, and representatives from the Office of Surface Mining.

An additional revision was implemented by the LQD on the first page of the document. This revision is in bold at the end of the first paragraph, and states "The operator must respond to the Land Quality Division within 30 days of receiving Land Quality Division comments." This requirement was added because of the long period that frequently occurs between when the annual report is received and the bond amount is set. The LQD is charged with ensuring that adequate bond amounts are held for all permits, and the long periods of delay are not consistent with this responsibility.

Although the completion date of the CARF guidance document is December 31, 2014, and operators are encouraged to use it immediately, required use of the CARF will not be imposed until May 1, 2015.

The CARF will be available on the LQD website: <http://deq.wyoming.gov/lqd/coal/resources> in the Annual Report section. Please note this website is still in development, so your patience is appreciated.

If you have any questions, please contact the LQD District Supervisor for your permit(s):

Cheyenne office (District 1) Robin Jones (307) 777-8956
 Lander office (District 2) John Erickson (307) 335-6939
 Sheridan office (District 3) Mark Rogaczewski (307) 675-5616

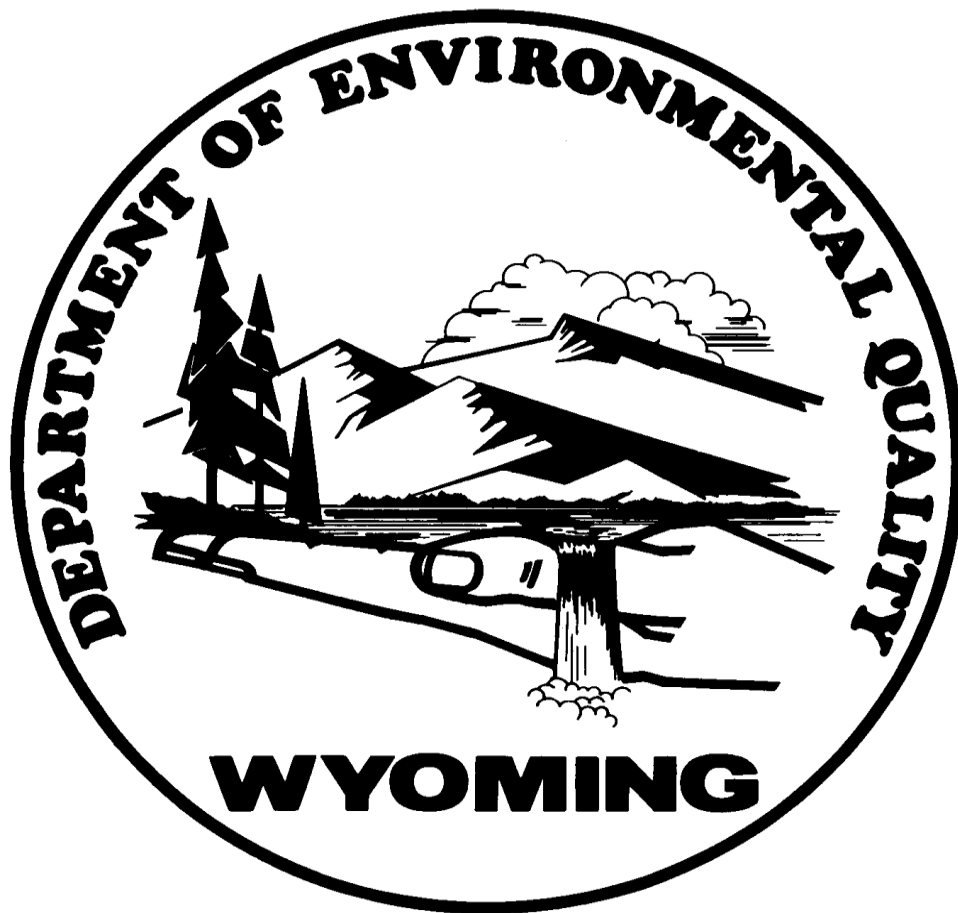
DEQ Exhibit 29

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH (307) 777-7758 FAX 777-7682	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-5973	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
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**DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION**



COAL ANNUAL REPORT FORMAT

December 2014

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General Purpose Statement For The Coal Annual Report Format (CARF)

This Annual Report format and the content outlined below are **required by the LQD Administrator** under provisions of the Wyoming Environmental Quality Act (Act) WS §35-11-411, Land Quality Division (LQD) Coal Rules and Regulations (LQD RR) and LQD coal guidance documents. **The operator must respond to the Land Quality Division within 30 days of receiving Land Quality Division comments.**

Purposes:

1. Document fulfillment of commitments in the permit and/or previous Annual Reports.
2. Evaluate bond adequacy and set the bond amount for current and projected disturbance.
3. Document deviations from the permit during the current and/or next annual report period.
4. Evaluate monitoring data
5. Collect information required for reporting to the Office of Surface Mining (OSM)
6. Evaluate requests for Rough Backfill Verification (RBV).
7. Evaluate request for verification of Phase I elements [Stream Channel Reconstruction Verification (SCRV) or Soil Depth Verification (SDV)].

The LQD will review the report and make the following findings:

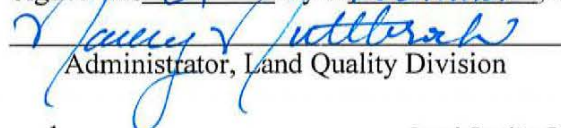
1. The operator is/is not in compliance with the permit Mine and Reclamation plans.
2. The amount of the reclamation performance bond.
3. The monitoring information conforms to permit commitments and LQD RR; results support permit projections; identify issues arising from the information provided; and state any required actions
4. All responses to comments have been deemed acceptable
5. Finding for each bond release verification evaluated per the request of the operator.

Acceptance of the annual report will be documented by a letter to the operator, followed by a Director's bond letter setting the new bond amount.

The operator shall complete and submit the first page and tables as presented, and use the numbering and headings for each required item in the annual report in the order presented in the CARF. Operators should not restate the text of the CARF in their annual report. The CARF has been constructed as an effort to streamline coal annual reports and present them in a consistent format. This effort should contribute to staff efficacy and reduce mailing and production costs.

Two (2) paper copies and one (1) electronic copy of the original annual report are to be submitted to the appropriate LQD district office *on or within thirty days prior to the permit anniversary date*. Additionally, the operator sends one (1) electronic copy of the report's Wyoming Reclamation Status Table to OSM Casper Field Office (CFO). Based upon any required LQD revisions, the operator may need to submit two complete paper copies of revised CARF elements to the appropriate LQD district office. If necessary, the operator may also be required to provide one electronic copy of the revised Wyoming Reclamation Status Table to OSM-CFO. Once finalized, the operator will ensure the LQD district office has two complete paper copies and one complete electronic copy of the approved CARF. Additionally, one finalized electronic copy should go to OSM-CFO and the operator may also need to provide one additional electronic copy to any applicable Federal Land Management [e. g. Bureau of Land Management (BLM) or the U.S. Forest Service (USFS)].

Signed this 31 day of December, 2014


Administrator, Land Quality Division

COAL ANNUAL REPORT
Wyoming Reclamation Status Table

Permit Number: _____ **Term:** _____

Operator Name: _____

Mine Name: _____

Report Period: Beginning date: _____ End date: _____
 (dates covered by reported data, data cutoff may be no more than 120 days before the anniversary date)

Current Bond Amount: _____

Report Period Coal Production (tons): _____

Wyoming Reclamation Status Table			
Evaluation Year (EY)			
1	Disturbed area	EY	
2		Total (all years)	
3	Long-term mining or reclamation facilities		
4	Active mining areas		
5	Areas backfilled and graded	EY	
6		Total (all years)	
7	Areas released phase I bond	EY	
8		Total (all years)	
9	Areas soiled and seeded / planted	EY	
10		Total (all years)	
11	Areas released phase II bond	EY	
12		Total (all years)	
13	Areas final seeded / planted for 10 years	EY	
14		Total (all years)	
15	Areas released phase III bond	EY	
16		Total (all years)	

LQD Report Period Data	Acres
Projected acres to be affected acres in the upcoming report period	
Acres in Temporary Cessation of Operations	

Instructions for Completing the Wyoming Reclamation Status Table

All numbers are acres, rounded up to the nearest whole number.

Row 1: Acres disturbed during the OSM evaluation year, which is the State's current Annual Report Period.

Row 2: Total acres disturbed for all years. This acreage includes ALL acres that were disturbed even if they have been reclaimed or have had bond release. The acreage equals the sum of the acreages inserted in Row 3: Long-term mining or reclamation facilities; Row 4: Active mining areas; and Row 6: Total areas backfilled and graded. $Row\ 2 = 3 + 4 + 6$.

Row 3: Long-term mining or reclamation facilities include haul and access roads; temporary dams and impoundments; permanent dams and impoundments; diversion and collector ditches; water and air monitoring sites; topsoil stockpiles; overburden stockpiles; offices; repair, storage, and construction areas; coal stockpile, loading, and processing areas; railroads; coal conveyors; refuse piles and coal mine waste impoundments; ventilation shafts and entryways; and non-coal waste disposal areas (garbage dumps and coal combustion by-products disposal areas); and temporary cessation of operation areas.

Row 4: Active mining areas include areas in advance of the pits stripped of topsoil, active pit area, ramps, active spoil areas; and any backfill areas not yet to final grade.

Row 5: Acres backfilled and graded to the approved PMT during the year. These areas may or may not be topsoiled.

Row 6: Total acres backfilled and graded to the approved PMT for all years including Rows 8 and 10. Rows 8 and 10 are subsets of Row 6, but Row 6 does not equal Row 8 + 10.

*Row 7: Acres released for Phase I during the evaluation year.

*Row 8: Total acres released from Phase I, for all years.

Row 9: Acres that have been topsoiled and seeded during the evaluation year.

Row 10: Total acres that have been topsoiled and seeded for all years.

*Row 11: Acres released for Phase II during the evaluation year.

*Row 12: Total acres released from Phase II, for all years.

Row 13: Acres that have been seeded for 10 years as of the evaluation year.

Row 14: Total acres that have been seeded for 10 years or more.

*Row 15: Acres released for Phase III during the evaluation year.

*Row 16: Total acres released from Phase III, for all years.

***Note:** Only disturbed acreage that has undergone bond release should be included Rows 7, 8, 11, 12, 15 and 16. Undisturbed acres that have undergone bond release are not included in these columns.

***Note:** Acres that undergo a Phase III bond release MUST also be counted for Phase I and II bond release; even if they have not been approved through a formal bond release (e.g. An operator receives a final bond release for 100 disturbed acres that have not previously received a Phase I or II. In this case, 100 acres of Phase I, 100 acres of Phase II, and 100 acres of Phase III bond release should be recorded in Rows 8, 11, and 15).

I. Ownership and Control Information

- A. Name and address of the operator
- B. State and Federal Lease numbers of mineral mined during the report period
- C. Describe any change in the corporate structure or organization of the entity holding the LQD permit which has occurred during the report period
- D. List the name, address, and telephone number of the following individuals:
 - 1. General Manager
 - 2. Agent who will receive Notice of Violation or Order written under provisions of the ACT or LQD RR
- E. List the following information for all officers, directors, owners, and controllers for the entity holding the LQD permit and its parent.

Name	Position	Appointment Beginning Date	Appointment Ending Date

II. Mine Plan

- A. Tabulate the **number of cubic yards of overburden** removed during the report period, the number of cubic yards stockpiled during the period, and the number of cubic yards remaining in stockpiles at the end of the report period. Each stockpile shall be listed separately with the current volume. Mines with distinct separate pits shall list each pit separately.
- B. Tabulate **Current Topsoil Balance:** (For multiple pit operations, calculate and compare on a pit by pit basis.)
 - 1. The number of cubic yards of topsoil (and subsoil) salvaged during the report period,
 - 2. The number of cubic yards stockpiled during the report period, and
 - 3. The number of cubic yards remaining in stockpiles at the end of the report period.
 - 4. Compare the actual volume of topsoil (and subsoil) salvaged during the report period to that predicted by the permit for the area salvaged.
 - 5. The number of total disturbed acreage where topsoil has yet to be replaced for final reclamation at the end of the report period.

LQD FINDINGS

LQD will use this information to recalculate the average topsoil depth application on disturbed area at the end of Annual Report period. These topsoil (and subsoil) recovery estimates for salvaged and predicted volumes must be tracked and

tabulated from year to year. Recovery efforts that are consistent with the baseline predictions verify that the calculated replacement depth is appropriate. The soil recovery trend that is inconsistent with permit predictions over multiple years must result in a recalculation of appropriate topsoil (and subsoil) replacement depths via a permit revision process.

- C. Individually list and **describe all deviations from the approved Mine Plan** (do not include approved revisions or nonsignificant revisions (NSRs)) which were approved during the report period.
- D. List all **unanticipated events or conditions**, accidental spills, etc. and remedial actions taken during the report period. See the LQD RR, Chapter 4, Section 2(l) for examples of unanticipated conditions.
- E. Briefly describe **mining plans for the coming year** and individually list and **describe all expected deviations from the approved Mine Plan**, including schedules, which will be executed during the upcoming report period. The LQD will review the deviations and inform the mine if a revision is required. Permit revision and NSR packages shall be submitted as separate LQD RR Chapter 13 permit revisions, and cannot be approved as part of the Annual Report process.

III. Reclamation Plan

- A. **Describe where approved special construction or reclamation practices were used**, such as for sand bodies or alluvial material for stream channels, wetlands, and Alluvial Valley Floors (AVFs).
- B. **Individually list and describe all deviations from the approved Reclamation Plan** (do not include approved revisions or NSRs) which were executed during the report period.
- C. **Briefly describe the major husbandry practices employed** (interseeding, burning, irrigation) and show the location(s) of their use on a map.
- D. **Briefly describe reclamation plans for the coming year** and individually list and describe all expected deviations from the approved Reclamation Plan which will be executed during the upcoming report period. The LQD will review the deviations and inform the mine if a revision is required. Permit revision and NSR packages shall be submitted as a separate LQD RR Chapter 13 permit revision, and cannot be approved as part of the Annual Report process.

IV. Reclamation History

A. Purpose Statement

Reclamation histories shall be maintained for all Reclaimed Units. The intent of the reclamation history forms is to maintain an historical record of all reclamation practices applied to each Reclaimed Unit on the mine. The purpose of this information is to document fulfillment of

reclamation commitments, allow for evaluation of the success of various reclamation practices, and to facilitate future review of bond release requests.

B. Content

Individual units of reclaimed land should be assigned a unique designation and shown on the map required in Section XI.D below. Reclamation practices which have been employed on each reclaimed land unit are to be tabulated separately on a sheet similar to Attachment No. 1 or on a spreadsheet that contains the required information. All of the listed information is required and must be provided for each unit. Note that the *actual seed mix* applied to each unit shall be listed, preferably as a photocopy of the seed tag. Only reclamation histories for new units or units that have revisions to their reclamation history must be submitted. Reclamation histories that have not been revised need not be re-submitted. Reclamation histories will be placed in a history volume that will be updated annually.

Reclaimed Unit may be combined with other Reclaimed Units into a Management Unit. Combining units would be done to eliminate the need to continue tracking the individual Reclamation History Sheets for individual units for ongoing husbandry and interim vegetation monitoring. If a Management Unit is created it should consist of Reclaimed Units that are in vicinity to one another and of the same Land Use. A new reclamation history sheet will be created for the Management Unit. The new history sheet will list all of the Reclaimed Units making up the Management Unit under "Previous Unit Name." and the Management Unit will have a new name. If a spreadsheet instead of individual Reclamation History Sheets is used for Reclamation History another table will be needed that identifies the Reclaimed Units within each Management Unit. Only the Reclamation History Sheet or entry in the spreadsheet for the Management Unit will need to be revised with updates to the history sheets.

Attachment No. 1 has an asterisk by the entries that will be required on the Reclamation History Sheets for the Management Units. The Reclamation History Sheets for the individual units will be kept in the reclamation history volume but only the Management Unit will be updated with new information.

The reclamation history map will contain the original names of all of the Reclaimed Units and will have the Management Units defined.

V. Reclamation Performance Bond

A. Purpose Statement

The purpose of this section is to provide renewal reclamation performance bond calculations and to assess the adequacy of the current bond calculations and total dollar value. Applicable provisions of the ACT include WS §35-11-417(c)(ii) and WS §35-11-411(a)(iii) and (d).

B. Content

1. Itemize the elements of the Area and Incremental Bonds as defined in the LQD RR Chapter 12, Section 2(a). This section should also include appropriate costs for each of the Area and Incremental Bond elements.

The LQD prefers that all coal operators use the format and cost factors presented in the current version of LQD Guideline 12. If LQD Guideline 12 is not used additional documentation or justification may be required.

The bond calculations must:

- a. Address reclamation of all disturbance existing at the end of the current report period.
 - b. Compare the total volume of overburden necessary to reclaim the mine last year to this year. This information assists in the determination if a reduction in bond is processed as a bond adjustment or an LQD RR Chapter 15 bond release (see 2. below). This determination is based on a mine-wide volume calculation and not on an individual pit basis.
 - c. Project reclamation of all lands which will be disturbed and all new structures which will be constructed during the next report period.
 - d. Demonstrate that the reclamation bond is sufficient to complete the approved reclamation plan. However, it is recognized that in many cases it is not practicable to exactly match the approved topography since the postmining contours in the permit were approved assuming the entire permit area would be mined.

If it is not practicable to achieve the permitted topography, the operator must explain why. For bond calculation purposes, a topography (bond topography) must be shown that comes as close to the permitted topography as possible. The operator must state what assumptions were used in developing the bond topography. The bond topography should blend with the existing drainage and the surrounding terrain.
 - e. Detail costs for all approved (but not yet constructed) special projects such as special aquifers, postmining drainage channels, wetland habitats, AVF units, for which the area has been disturbed but not yet reclaimed.
 - f. Include costs for those reclamation activities which have been completed but not yet formally released from bond liability.
2. If there is a reduction in the total calculated bond amount for either the Area Bond or the Incremental Bond, the text must explain the reason for the reduction.

This reduction shall be considered a *bond adjustment* if one or more of the following criteria apply:

- a. The reduction in Area Bond *is not* due to a smaller backfill void (and thus a smaller backfill volume) in this report period compared to the last report period.
- b. The permit has been formally revised to alter reclamation methods which result in a cost saving.
- c. The permit has been formally revised to create different reclamation features (e.g., postmining topography) which are more cost effective to construct.
- d. The cost reduction *does not* result from completed reclamation work.
- e. The cost reduction is a result of reduction of unit costs agreed to by LQD and the operator. For example the cost of operating a loader decreases from one year to the next.
- f. The cost reduction is the result of shorter haul distances and/or less grade.

Bond adjustments shall be evaluated via review of the Annual Report bond calculations and shall not be sent through the LQD RR Chapter 15 bond release process. The LQD shall issue a written statement acknowledging the bond adjustment and revised bond calculations.

If the bond reduction is not a bona fide bond adjustment, the dollar value of the bond reduction (in Area and/or Incremental Bond) shall be retained in the bond (see V.B.1.f. above) or sent through the LQD RR Chapter 15 bond release process.

VI. Abandoned Drill Hole Report

A. Purpose Statement

The purpose of this Annual Report section is to house the Abandoned Drill Hole Report for all holes drilled in development of the owned or leased coal within the current permit area. The reclamation for all abandoned drill holes and proposed drill holes shall be listed as line items in the bond calculations. Applicable provisions include WS § 35-11-404, and the Coal LQD RR Chapter 14, Section 5.

B. Content

Attachment No. 2 to this document is a format of an abandoned Drill Hole Report that the LQD has developed in consultation with the BLM. The coal operator must include this completed form in the Annual Report or devise a separate form with identical information.

The coal operator should report all drill holes drilled within the approved permit area boundary during the Annual Report period. The operator may also include holes off the permit area that were drilled under a separate Coal Notification (CN). The holes drilled outside the permit area should be listed separately from those within.

VII. Annual Impoundment Inspection and Construction Reports and Certifications

A. Purpose Statement

The purpose of this Annual Report section is to house the annual impoundment inspection reports and their associated certifications by a qualified registered Wyoming professional engineer. Applicable provisions include the LQD RR, Chapter 4, Section 2(g)(iv)(G). This section also houses the impoundment construction inspection reports, as required by LQD RR Chapter 4, Section 2(g)(iv)(F).

B. Content for Annual Impoundment Inspection Report

The annual impoundment inspection report should address all impoundments which provide sediment control, serve a treatment function, and any other impoundment that has an embankment. The annual impoundment inspection report must address all criteria listed in LQD Coal RR Chapter 4, Section 2(g)(iv)(G)(I) through (V).

A summary report may be submitted using a tabular listing of impoundments under each criterion. The report could also consist of copies of the inspection form for each impoundment with a cover sheet listing the impoundments. In any case, the certification may be affixed once to cover all impoundments in the table or listing. The professional engineer's certification should include a reference to these LQD Coal RR in addition to the certification stamp.

C. Content of the Impoundment Construction Inspection Reports

The impoundment construction inspection reports should include all impoundments constructed during the annual report period. Each report shall be prepared and certified by the inspecting engineer, and should describe the construction work observed and address its conformance with the approved design.

VIII Monitoring Data Presentation and Evaluation

A. Purpose Statement

The purpose of this Annual Report section is to present and evaluate various types of monitoring data and performance standard information for any or all of the following reasons:

- Information required by the ACT.
- Information required for permit application (LQD RR, Ch. 2).
- Information required for environmental performance standards (LQD RR, Ch. 4).
- Information required for wildlife monitoring (LQD RR, App. B).
- Information submitted to support LQD RR, Ch. 15 Bond Release Requests e. g. Rough Backfill Verification and or Phase 1 Verifications.
- Information required at the LQD Administrator's Discretion based upon specific provisions of the ACT or LQD RR.

B. Content of Monitoring Data Sets or Performance Standard Information

Each annual report shall contain the monitoring data sets and performance standard information required by the applicable provisions listed above and any permit specific commitments. The general content and quality of each data set, performance standard information and conclusions are outlined below.

LQD FINDINGS

The LQD district staff will review the monitoring data and make a determination if the monitoring information conforms to permit commitments and LQD RR; results support permit projections; identify issues arising from the information provided; and state any required actions.

LQD Coal Rules & Regulations Chapter 4, Section 2(i) require surface water and groundwater quality and quantity be monitored until final bond release. All hydrology monitoring information must be provided in both **electronic** and paper formats. The format information for the electronic data is provided in Attachment 3. New monitoring well information should be reported in the format provided in Attachment 4. Formats for surface, groundwater and precipitation reporting are provided in Attachments 5 through 11.

C. Monitoring Categories:

1. Precipitation Data (see Attachment No. 9)
2. Surface water monitoring program
 - a. For Ephemeral drainages, present all surface water quality data collected during the annual report period. The Phase 1 Bond Release verification of Stream Channel Reconstruction and a Phase 2 Bond Release verification of Surficial Stability are used to demonstrate that the quality and quantity of runoff from the affected lands will minimize disturbance to the hydrologic balance. The stream channel reconstruction verification information may be submitted in the annual report (see Section X). The Surficial Stability verification should be submitted independently (see Guideline No. 23).
 - b. For intermittent and perennial streams
 - (1) Surface Water Quantity
 - (a) Present all surface water quantity data collected during the annual report period.
 - (b) Present surface water quantity data in a time series graph comparing upstream flows (including baseline) with downstream flows (including baseline) to show trends (see Attachment No. 13). The operator will discuss any differences between the upstream station and the downstream station.

(2) Surface Water Quality

- (a) Present all surface water quality data collected during the annual report period.
- (b) For each surface water monitoring station present surface water quality data in a time series graph with a trend line for total dissolved solids, total suspended solids, pH, total and dissolved iron, total manganese, and other parameters per permit commitment. The operator will provide a brief discussion of the data and state whether the during-mining data are trending toward or away from the baseline data.

c. Postmine Impoundment Water Quality:

For each postmine impoundment, water quality data will be collected during the annual report period for total dissolved solids, total suspended solids, pH, total and dissolved iron and total manganese. Compare the value for each required parameter for the postmine land use against the WQD standard presented in WQD Chapter 8, Table I or against permit commitments. The operator will provide a brief discussion of the data and state whether the data meets the (WQD class of use) or meets permit commitments.

3. Groundwater Monitoring Program

Present all groundwater quality and quantity data collected during the annual report period. This section should be read in conjunction with the Wyoming Groundwater Performance Standards White Paper (LQD Guideline 8).

- a. For backfill and alluvial wells, present water quality data in a time series graph with a trend line for total dissolved solids, total and dissolved iron, total manganese, and pH. A mine-wide mean for each parameter may be presented. Compare the value for each required parameter for the postmine land use against either WQD Chapter 8, Table I, permit projections, or the baseline data. The operator will provide a brief discussion of whether or not the data is trending towards predicted water quality.
- b. Static baseline and during-mining backfill and alluvial well groundwater level data will be presented in a time series graph illustrated with a trend line. The operator will provide a brief discussion of the data and state whether data are trending toward or away from permit projections in the Probable Hydrologic Consequences section of the permit.

4. Overburden

- a. Backfill. Information previously submitted as part of the regraded spoils program or under Section IX may be referenced.

- b. Baseline. Additional overburden baseline information collected as required by a permit condition or permit commitment may be kept at the mine site unless the permit or permit condition requires it to be incorporated into the permit. Incorporation into Appendix D-5 should be accomplished through a revision.

5. Interim Vegetation Monitoring

Interim vegetation monitoring is required to insure that operators are aware of the condition of reclaimed areas during the bonding period, to evaluate the progress of reclaimed areas, and to assess the adequacy of various reclamation methods and techniques.

Interim vegetation monitoring methodology is covered in detail in LQD Guideline No. 14. The operator should refer to this guideline and the permit to insure that proper interim vegetation monitoring techniques are being followed.

When characterizing and describing interim vegetation monitoring data the operator should:

- a. Explain any deviations from the approved permit commitments including parameters sampled, methodology, sites monitored, etc.
- b. Discuss observed bare areas or potential problem areas, especially any areas with prohibited or noxious weeds, and proposed solutions.
- c. Discuss trends based on previous interim vegetation monitoring results and reference or control areas, and discuss the status of the reclaimed areas relative to eventual bond release.

Interim monitoring requirements do not include native vegetation (Reference Area) comparisons. Since, for revegetation success, reclaimed areas are compared to Reference Areas it is recommended that the Reference Areas also be sampled and compared. For permits utilizing technical revegetation success standards, these standards can be used for comparison.

6. Wildlife Monitoring Data. Procedures specified in Appendix B are required for surface coal mining operators as per Ch. 4, Sec 2(r)(iv).
7. Other as Required by the Permit. These may include but are not limited to seleniferous material tracking data, AVF monitoring, selenium sampling of vegetation, ladies ute tresses surveys and/or backfill settling.

Note: The LQD, as needed, may place a copy in a separate binder to consolidate specific monitoring data resulting from permit commitments or conditions.

OPTIONAL VERIFICATIONS

IX. Rough Backfill Verification

Rough backfill verifications submitted through the Annual Report must demonstrate that the area backfilled has met the conditions of "rough backfilling" as defined in LQD RR Chapter 1, Section 2(ca) in order for the bond amount for that area of the pit to be rolled over into the new mined out area. The operator must *specifically request* verification evaluation.

The LQD staff review of this demonstration is called "rough backfilling verification" (RBV). The process is not bond release and does not proceed through the LQD RR Chapter 15 process as long as the criteria of Section V.B.2. of this document are met. LQD Guidelines 12 and 21 contain additional information on submittal content and format. RBV submittals must include the information required in LQD Guideline 21. Guidelines may be downloaded from the LQD web page (<http://deq.wyoming.gov/lqd/>).

If a permittee does not seek RBV via the AR process an independent RBV submittal (see Guideline 21) is required to verify the PMT, before the permittee can roll the bond amount over to the new pit. The Area Bond costs for both the old pit and the new remain in the bond calculation until RBV is approved.

LQD FINDING:

The LQD shall review the information provided and, if satisfactory, will issue a written statement granting rough backfilling verification for specific backfill units as shown on a specific annual report map and allow bond dollars from those units to be applied to the new mined out area. If the evaluation is not satisfactory, LQD will issue a written finding denying the verification.

X. Phase I Bond Release Verifications

Phase I Verifications possible through the Annual Report are:

1. Stream channel reconstruction
2. Soil depth

Instructions on methods and submittal format are provided in LQD Guideline 22 (<http://deq.wyoming.gov/lqd/>). In order for LQD to evaluate a verification and make a finding, the operator must list each verification submitted and *specifically request* evaluation. The LQD will provide findings for each submitted verification as part of the annual report review process.

LQD FINDING:

The LQD district staff will evaluate each verification request separately in relation to permit commitments and LQD RR Chapter 4 performance standards. For satisfactory verifications, the LQD district office will issue a written finding granting verification for each verification type on specific units as shown on a specified annual report map. If a verification is not satisfactory,

LQD will issue a written finding denying the verification.

The LQD approval of rough backfilling (or area bond release), stream channel reconstruction, soil depth, backfill quality, and form the basis for an operator's Chapter 15 Phase 1 bond release request for the lands specified in the verification.

XI. Maps, Figures, and Graphs

Each map listed below must be provided in the format specified in Attachment 12 (the operator may reference permit maps if such maps are current):

- A. A map showing the areas which are reported in both the Wyoming Reclamation Status Table and LQD Report Period Data Table;
- B. A Reclamation History map showing all reclaimed units and their reclamation (permanent seeding) date. If Management Units have been established they should be outlined and identified on the map. If husbandry practices are implemented the operator should also show the areas and types of husbandry practices implemented during the report period;
- C. Maps presented in support of the reclamation performance bond calculation in Section V;
- D. A map showing locations and identifying all the monitoring sites listed in Section VIII;
- E. Maps supporting rough backfill verifications, if requested by the operator, as described in Section IX and LQD Guideline 21. The map should include backfill verification locations for the current annual report backfill verification request and for previously approved backfill verifications;
- F. Maps supporting Phase I bond release verifications, if requested by the operator, as described in Section X and LQD Guideline 22. The map should include the Phase I bond release verifications for this annual report period and for previously approved Phase I bond release verifications;
- G. An inspection map showing the location of all stockpiles, impoundments, ASCMs, monitoring Sites, WYPDES discharge points, waste disposal sites, roads, active mining areas (including pit names) and current contours;
- H. A bond release map showing the location of all reclaimed lands which have received Area, Phase 1, Phase 2, or Phase 3 bond release. If a release unit has had more than one bond release action, only the last action needs to be shown. This map should be cumulative from year-to-year. The map shall be accompanied by a table that identifies and tracks each approved release unit with reference to the LQD's written approval;
- I. Any map(s), graph(s), and figure(s) necessary to illustrate or support the characterizations and descriptions of data sets required by the Annual Report notification letter.

**Attachment No. 1
Reclamation History Sheet**

Permit No. _____

_____ Mine Annual Report
Period _____ to _____

SUGGESTED/EXAMPLE FORMAT

*Reclaimed Unit/ sec, /T,/R	Sec.27, T. and R.
*Size (acres)	27 acres
*Date of Initial Disturbance of unit / Category (1 -5)	June 1980 / Category 5
*Current status of unit	Permanently reclaimed
*Previous unit name	None
Date Backfilling and Grading Completed	11/84
Reference to backfill quality data	1984 Annual Report
Spoil Surface Preparation	Scarified entire area with patrol
Soil (topsoil + subsoil) Replacement dates and depth	March, 1985 / 18 inches
Soil from Stockpile or direct haul	Direct Haul
Seedbed Preparation	Disced, roller-harrowed,
*Seeding Dates	warm season mix 4-85, cool season mix 10/85, 10% of area to shrub mix in 4-85
Seeding Method(s)	Drill / Broadcast shrubs
Seed Mix(s), Actual seed mix (a copy of the seed tag is preferred) applied, including the Plant Community Type, and actual Application Rates are required.	Loamy / Shrub Mosaic @ 15 lbs pls/acre See attached seed mix
Shrub or Goal	Shrub standard
Cover or Nurse Crop	N/A
Mulch type, rate, application method and date	Oat Straw, 2 ton/ac., haybuster crimp 4/85
Augmented (reseeding): date, seed mix with explanation of why needed	Reseeded south end 5/87 because of failure to germinate. See renaming of unit, broadcast approx. 10 ac. with 2 lbs/ac big sagebrush in 1989
*Interseeding: date, seed mix	N/A
*Husbandry Practices	spot sprayed Canadian thistle in 86, 87, 89
*Vegetation Monitoring Dates	1988 and 1991
Rough Backfill Approval Date	1/17/85 letter from _____ to _____
Stream Channel Reconstruction Approval Date	10/15/95 letter from _____ to _____
*Phase I Bond Release Approval Date	10/15/90 letter from _____ to _____
*Phase 2 Bond Release Approval Date	10/15/95 letter from _____ to _____
*Final 3 Bond Release Approval Date	9/21/98 letter from _____ to _____

Sheet Revision Date _____

* denotes entries required for management units.
Initial disturbance and seeding will be ranges of dates



**Attachment No. 2
Abandoned Drill Hole Report**

Land Quality Division

Permit No. _____ Mine _____ Annual Report Period _____ to _____ Page ___ of ___

Operator Name:			Date:			Driller Name:		
Address:			Commodity:			Address:		
City:	State:	Zip:				City:	State:	Zip:
Telephone:						Telephone:		

Hole No.	Date Drilled	Date Abandoned	Township	Range	Section	¼ ¼	Northing*	Easting*	Surface Elevation	Total Depth	Hole Located by Map Survey		Depth to Aquifer	Land** Status
Example 97-20-3C	11-19-97	11-20-97	47N	73W	2	NWSE	1,243,480	506,120	4,840'	249'		X	85'	Private

* Only required if reporting to BLM
 ** Land Status: Federal, Private, State

Attachment No. 3 Submittal of Electronic Media

Data Files. The LQD Administrator requires that each Annual Report contain a complete electronic copy of all hydrologic monitoring data collected during the Annual Report period. These data may include: groundwater quality and elevation data (relative to mean sea level), surface water quality and flow data, and precipitation data. Any new monitoring sites established during the Annual Report period should also be included.

The LQD requests that two electronic copies of these data be marked “Hydrology Monitoring Data” and supplied to the District Office with the paper copies of the Annual Report. If an operator is also supplying an electronic copy of the Annual Report, the groundwater and surface water data can be included as a subdirectory titled “Hydrology Monitoring Data” on the same electronic media as the Annual Report. All electronic media will be stored in a secure cabinet in the Records Area in the Cheyenne LQD Office.

The hydrologic monitoring data files should be provided in Excel format on a CD so the data can be uploaded by the LQD to the LQD Hydrology Database. A separate Excel spreadsheet should be provided for sample station data (precipitation sites, surface water monitoring sites, and groundwater monitoring wells), precipitation data, groundwater level data, surface water flow data, field water quality data (surface and groundwater), and lab water quality data (surface and groundwater). These data should be provided in a format similar to the format presented below in Attachment Nos. 4 through 11. If some information is unavailable, blanks may be left in the tables. Electronic copies of the requested formats in Excel spreadsheets are available for download from the LQD website (<http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>) or from the LQD Hydrology Database Manager in the Cheyenne LQD Office (307-777-7055).

Separate Excel spreadsheets should be provided for the following data elements on the following Attachments:

Data Element	Attachment
New groundwater monitoring wells	Attachment 4
New groundwater level data	Attachment 5
New surface water monitoring sites	Attachment 6
New surface water flow data	Attachment 7
New precipitation monitoring sites	Attachment 8
New precipitation data	Attachment 9
New field water quality (groundwater and surface water)	Attachment 10
New lab water quality (groundwater and surface water)	Attachment 11

If the operator cannot provide the data in a tabular format similar to the Attachments because of time or cost constraints, the LQD will accept the data in a format compatible with Excel.

Data Interpretation. In order to meet OSM requirements related to the LQD's preparation of Cumulative Hydrologic Impact Assessments (CHIAs), the PHC evaluations on which the CHIAs are based must be up-to-date. Similarly, the PHC evaluations must be up-to-date at the time bond release is requested. Therefore, interpretation of the hydrology data, through the Annual Report, is necessary, to support an amendment application or other permitting action dependent on hydrology. At a minimum, evaluation and interpretation must occur one year and preferably two years prior to the submission of an amendment, a revision that would require a CHIA, or bond release request concerning hydrology. Electronic copies of the maps, graphs, figures, and tables necessary for these interpretations can be submitted with the files.

Data Correction. If the LQD identifies potentially erroneous or missing data, the operator will be contacted or comments will be sent to the operator in the Annual Report review. If the operator identifies incorrect data, the operator should resubmit corrected data with an explanation of what should be corrected. If the data to be corrected are less than five samples, the operator may send a letter to the Records Analyst discussing the data to be corrected and the LQD will make the corrections manually.

**Attachment No. 5
New Groundwater Level Data**

MINE_NAME	WELL_NAME	MEAS_DATE	GW_ELEV	GASSY	COMMENTS
RED HAWK	RH-22	04/16/87	4616.6	YES	
RED HAWK	RH-2-W	09/08/04			Casing Blocked

(value in feet
above mean sea
level)

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 5 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

**Attachment No. 6
New Surface Water Site**

STATUS	MINE_NAME	SAMP_STATION_NAME	SAMP_STATION_TYPE	ELEV	STREAM_NAME	DRAINAGE AREA	NORTHING	EASTING	Datum	TOWNSHIP	RANGE	SECTION	FIRST QUARTER	SECOND QUARTER	COMMENTS
ACTIVE	RED HAWK	RHA-1	STREAM STATION	4671	NEST CREEK	180	1040379	449979	NAD 1927	41N	71W	14	SW	SE	

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 6 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

**Attachment No. 7
New Surface Water Flow Data**

MINE_NAME	SAMP_STATION_NAME	MEAS_DATE	FLOWRATE	FLOW_MEAS_METHOD	FLOW_MEAS_EQUIP	FLOW_MEAS_TYPE	COMMENTS
RED HAWK	RHSW8-C	06/23/03	0.86	RATING CURVE	WEIR/RECORDER	PEAK DAILY	Recording
RED HAWK	RHSW9-Z	08/23/91	7.1	RECORDER	PARSHALL FLUME	MEAN DAILY	General Storm

(ft³/sec)

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 7 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

**Attachment No. 8
New Precipitation Site**

STATUS	MINE_NAME	PRECIP_STATION_NAME	PRECIP_MEAS_EQUIP	NORTHING	EASTING	SURFACE_ELEV
ACTIVE	RED HAWK	RH-1	RECORDING RAIN GAGE	1547695.98	588038.09	4456.8

TOWNSHIP	RANGE	SECTION	FIRST_QUARTER	SECOND_QUARTER	Datum	COMMENTS
57N	84W	16	SE	NE	NAD 1927	SOUTH SIDE OF PERMIT

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 8 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

**Attachment No. 9
New Precipitation Data**

MINE_NAME	PRECIP_STATION_NAME	STARTING_DATE	STARTING_TIME	EVENT_LENGTH	TOTAL_PRECIP	COMMENTS
RED HAWK	WEA-2-B	9/18/2002 0:00	200	600	0.35	

(minutes) (inches)

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 9 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

**Attachment No. 10
New Field Water Quality**

MINE_NAME	SAMP_STATION_NAME	SAMP_DATE	PARAMETER_NAME	PARAMETER_VALUE	ANALYTICAL_METHOD	COMMENTS
RED HAWK	RH-44-3-WAC	05/21/02	FIELD PH	7.73	EPA 150.1	
RED HAWK	RH-99-3-WAC	05/22/02	FIELD SP CONDUCTANCE AT 25 C	2800	SM 2510 B	
RED HAWK	RH-14-8-WAC	05/22/02	FIELD WATER TEMP	7.3	Field Temperature	

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 10 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

Attachment No. 11
New Lab Water Quality Data

MINE_NAME	SAMP_STATION_NAME	SAMP_DATE	PARAMETER_NAME	PARAMETER_VALUE	LAB_COMP_NAME	LAB_BOTTLE_ID	ANALYSIS_DATE	ANALYTICAL_METHOD	COMMENTS
RED HAWK	RHALL3-24	12/21/01	TDS DRIED AT 180 C	281	ABC LAB	25 05980	12/21/01	EPA 160.1	
RED HAWK	RHALL3-24	12/21/01	DISSOLVED AL	-0.1	ABC LAB	25 05979	12/21/01	EPA 200.1	
RED HAWK	RHALL3-24	12/21/01	DISSOLVED AS	-0.005	ABC LAB	25 05979	12/21/01	EPA 206.3	
RED HAWK	RHALL3-24	12/21/01	DISSOLVED B	0.1	ABC LAB	25 05979	12/21/01	EPA 200.7	

(See pages 17-18 for guidance on submission of electronic media. Attachment No. 11 can be found in Excel format on the LQD web page at: <http://deq.wyoming.gov/lqd/coal/resources/annual-report-3/>)

Attachment No. 12 Content and Format for Maps

The base for all Annual Report maps must be a current clear and legible contour map or a current aerial photograph. The contour base should correspond to or be based upon an existing permit map at the same scale as the permit map. The preferred scale for maps and aerial photographs is 1" = 500'. The preferred contour level is ten feet. Use of different scales and contour levels may be approved on a case by case basis by the LQD District Supervisor.

Individual map sheets should be of a reasonable size and generally should not exceed 48 inches on a side.

Each map must have a complete title block, including:

- Complete map title;
- Operator name and address;
- Permit number with term designation;
- Annual Report period;
- Scale;
- North arrow;
- Contour interval; and
- Date of map or date of photography.

Each map must have a complete legend, including:

- Clearly labeled legal subdivisions of section, township and range. Northings and eastings and/or state plane coordinates are generally useful and acceptable when provided in addition to the legal subdivisions;
- Notation of the permit area boundary; and
- Notation of all structures not identified directly on the map.