DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION

GUIDELINE NO. 18

COAL COMPENSATORY WETLAND MITIGATION

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PREFACE

The preparation of this document is the result of the necessity of having a document to facilitate the mitigation of wetlands within coal mine permit boundaries. If an operator wishes to pursue other alternatives, he or she is encouraged to discuss these alternatives with the Land Quality Division (LQD) staff.

This guideline is not intended to be comprehensive. It has been developed by the LQD to assist operators in the development of wetlands mitigation packages. The guideline is not the only way to develop the mitigation package, but has been developed based upon the United States Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual and other USACE documents, along with USACE federal and state guidelines for wetland mitigation.

I. INTRODUCTION

The surface mining of coal in Wyoming often results in disturbance to, or elimination of, wetlands. The purpose of this document is to provide the coal operator and the Land Quality Division (LQD) staff with guidance on how to meet the regulatory requirements when disturbance to, or elimination of, wetlands is unavoidable, in particular, the requirements for wetland mitigation plans.

Through the issuance of Programmatic General Permit (PGP) 99-03 by the United States Army Corp of Engineers (USACE), the LQD has been established as the lead agency for review of final wetland mitigation plans associated with coal mining activities in Wyoming. However; the USACE still retains a review and approval role. It should be noted that the USACE also retains the authority to declare jurisdictional wetlands and authorizes coverage to do so under PGP 99-03. A copy of PGP 99-03 is included as Attachment A.

A flowchart for the LQD and USACE roles for *acceptance* and *authorization* of a wetlands mitigation plan is included as Attachment B. The LQD reviews the mitigation plan for technical adequacy within the overall mine and reclamation plans. As part of the LQD review of the mitigation plan, technical aspects such as the water balance, vegetation seed mix, material handling, and hydrologic consequences will be evaluated. The USACE also reviews the wetland mitigation plans to ensure compliance with Section 404 of the Clean Water Act and can request additional information in mitigation plans as it deems necessary. Refer to the USACE document Compensatory Mitigation Guidelines for Wyoming, included as Attachment C, for specific USACE requirements.

In the permit review process, the LQD will require a USACE reviewed and *accepted* wetland mitigation plan prior to the LQD approval of any amendment or revision that includes the disturbance of Jurisdictional Wetlands as declared by the USACE through the wetlands delineation process. Due to the changing nature of mine plans, the mitigation plan will need to cover all impacts that are expected during the current term of permit to satisfy USACE needs.

When a mitigation plan is *accepted* by the USACE, an *acceptance* letter will be issued indicating that the USACE concerns have been addressed, but that final approval will not occur until the LQD has approved the plan. When a wetland mitigation plan is approved by the LQD, a letter will be sent to the USACE Wyoming State Office and the mine operator stating that the LQD has approved the wetland mitigation plan. At this point the mine operator should proceed with the request to the USACE for *authorization* under PGP 99-03.

II. WETLANDS DELINEATION

Since January 21, 1992, the USACE has required formal wetlands delineations, completed in accordance with the USACE 1987 Wetlands Delineation Manual, of wetlands and other waters of the United States to be impacted by surface coal mining activities (see November 22, 1991 Federal Register, Vol. 56, No. 226, 33 CFR 330.1(e)). This analysis was a requirement for the use of Nation Wide Permit (NWP) 21, the primary avenue for authorizing coal mining activities regulated under Section 404 of the Clean Water Act at that time. When initially instituted, the USACE required that only the area to be impacted by the mine during the valid period of NWP 21 be delineated. Mines could also delineate the entire life of mine permit area at their discretion. In addition to the delineation requirement, the USACE also required an interim wetland mitigation plan. Policy changes in 1995 eliminated the interim mitigation requirement but mandated that all delineations include the entire life of mine permit area.

PGP 99-03 is now the primary permit used by the USACE to authorize impacts to wetlands and other waters of the U.S. from coal mining in Wyoming. The PGP 99-03 requires a delineation of wetlands and other waters of the U.S. (baseline characterization) on the entire life of mine permit area (see PGP 99-03, Appendix C, item 6). Once a delineation has been approved by the USACE, a copy of their approval letter(s) and delineation should be submitted to the LQD as baseline information formatted to fit into Appendix D-10. The baseline information should, at a minimum, contain the following:

- A complete record of the wetland delineation report and all supporting information, such as tables, photos, maps and figures; and
- A map identifying "Waters of the United States", and jurisdictional wetlands, prepared with the specifics outlined in LQD Guideline 6A; and
- A list of persons who were consulted or were responsible for collecting and analyzing the data; and
- All correspondence between the USACE and coal permittee paginated as a component of Appendix D-10.

The USACE has issued guidance clarifying the information requirements for acceptable wetlands and other waters of the U.S. delineations in correspondence dated November 15, 1996. The USACE Wyoming Regulatory Office should be contacted for that information.

III. FINAL MITIGATION PLAN

Mitigation plans must be formatted to fit into the Reclamation Plan, Wetlands Mitigation section of the LQD permit, and adhere to the following:

1. All postmine wetlands must support the designated and approved postmine land use(s). Postmine wetlands may not alter the pre-mine land use without formal approval under the provisions of the LQD Coal Rules and Regulations, Chapter 2, Section

2(b)(xiv)(C). The permittee is required to demonstrate "equal to or better than" land use under W.S. § 35-11-402(a)(ii).

2. Wetlands must be reclaimed or replaced on-site (within the permit area) and in kind. A table should be developed which identifies the premine wetland and its reclaimed or replaced counterpart in the postmine environment. The table should identify the type of wetland (stockpond, depressional, riverine, etc.) and the number of acres.

3. Postmine wetlands require specialized soil handling to restore or create hydric soil characteristics. Reclamation Plans should include:

   a. specifications for soil characteristics (e.g., percent sand, silt and clay);

   b. substrate thickness illustrated on the design drawing should approximate pre disturbance wetland conditions; and

   c. provide construction specifications and practices (e.g., compaction).

4. Postmine wetlands should restore the approximate premine vegetation species and diversity. Permittees should devise a revegetation plan involving hydrophytic vegetation. Species selection should consider the hydrology and associated soil conditions. Reclamation plans should include:

   a. a species list, seeding rates and methods;

   b. postmine community type locations on a map or design drawing; and

   c. meet the requirements of the Wyoming Coal Rules and Regulations, Appendix A.

5. Wetland function is often associated with wildlife habitat; thus, wetland design should address this function. Wetland design should account for water level fluctuation and its effect on fringe vegetation, substrate material, shoreline diversity, and water quality.

6. Wetlands should be hydrologically functional. Attention should be given to periods of inundation and surface water-ground water interaction (if applicable). If the proposed wetland is a reclamation or replacement feature, postmine morphology (width, depth and volume) should approximate the premine feature. If the wetland/open water is an enhancement feature, the maximum water depth should not exceed 10 feet, with depths of 0 to 3 feet occurring throughout the majority (approximately 80-percent) of the wetland. When depths exceed this, the feature will no longer be considered a wetland; instead it will be considered a postmine impoundment. Reclamation plans should include:

a. a water balance which identifies predicted inflows and period of inundation;

b. a map which illustrates contributing drainage area at a scale no greater than 1" = 2000'; (If drainage is large enough to require a different scale map, contact LQD staff)

c. designs which contain a plan view of the wetland at a maximum contour interval of 2-feet, and a map of scale no greater than 1"=200';

d. a minimum of two cross sections through the planned wetland design (for channel wetlands a model of the less than two year event will be required to show overbank inundation at the cross section);

e. designs for inflow and outflow structures if applicable;

f. a table which tabulates stage, surface area, and volume; and

g. a prediction of minimum and maximum water levels and water quality.

General wetland mitigation plans should be developed for the life of the mine, and include a water balance based upon the approved post mine topography (PMT) and proposed mining impacts. General plans should include a map with showing the proposed PMT and locations of proposed wetland mitigation features. Specific plans will be required for any planned wetland disturbance to take place during the current permit term. The specific plans will need to include all of the criteria defined in the Final Mitigation Plan, items 1 through 6 as described above. These plans are necessary, as the USACE will be authorizing disturbance based upon the permit term, and cannot authorize disturbance without a LQD approved mitigation plan. The USACE will require detailed designs for all wetlands that the mine is requesting to impact during the current permit term.

IV. MONITORING PLAN

The USACE Wyoming Regulatory Office specifies its own monitoring regimen to be used and report content for Section 404 permit purposes. The USACE office will add these requirements as a condition of approval of PGP 99-03. A copy of this monitoring requirement will need to be submitted to the LQD formatted for insertion into the permit. An example of this monitoring requirement is included as Attachment D of this guideline. A copy of the monitoring report shall be sent to the LQD offices as part of the annual report.

V. SUCCESS CRITERIA

A postmine wetland delineation will need to be performed and submitted to the USACE office to show that the wetlands have been adequately mitigated. A final field inspection will be coordinated between the USACE, LQD, and mine personnel prior to final bond release.

GLOSSARY OF TERMS

Enhancement Feature - A unit of wetland reclamation that is in addition to the units required for reclamation under the Programmatic General Permit.

Hydric Soil - A soil that is saturated, flooded, or ponded long enough during the growing season to help develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (U.S. Department of Agriculture - Soil Conservation Service 1985). Hydric soils that occur in areas having positive indicators of hydrophytic vegetation and wetland hydrology are wetland soils.

Hydrophytic Vegetation - The sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. When hydrophytic vegetation comprises a community where indicators of hydric soils and wetland hydrology also occur, the area has wetland vegetation.

Replacement Feature - A unit of wetland that is a direct replacement of a unit required under the Programmatic General Permit.

BIBLIOGRAPHY

U.S. Army Corps of Engineers. (1987). “Corps of Engineers Wetlands Delineation Manual,” Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Attachment A

PUBLIC NOTICE

US Army Corps
of Engineers
Omaha District

Application No: GP 99-03 199920003
Applicant: General Public
Waterway:
Issue Date: January 26, 2000
Expiration Date: January 30, 2005

Regulatory Branch 2232 Dell Range Blvd. Cheyenne, Wyoming 82009-4942

ANNOUNCEMENT OF PROGRAMMATIC GENERAL PERMIT 99-03

The District Engineer, Omaha District, U.S. Army Corps of Engineers, Omaha, Nebraska announces the establishment of Programmatic General Permit (GP) 99-03, for the discharge of dredged and fill material associated with the initiation, operation, and closure of surface coal mines in waters of the United States, including wetlands, within the State of Wyoming.

The permit was issued on January 26, 2000, in accordance with the "Regulatory Programs of the Corps; Final Rule," as published in the Federal Register, Volume 51, Number 219, dated November 13, 1986, Part 325.5(c). After consideration of comments from the public and other agencies, the District Engineer has determined that establishment of GP 99-03 is not contrary to the public interest and complies with the 404(b)(1) guidelines. A copy of the permit is attached.

To obtain authorization under this permit, all applicants must submit a "Notice of Intent" (NOI) in accordance with the application procedure described in Appendix C prior to undertaking any activities that require a discharge of dredged or fill material into waters of the U.S., including wetlands. Authorized activities must be accomplished in compliance with specific criteria in Appendix A and under special conditions described in Appendix B.

Attachment

DEPARTMENT OF THE ARMY PERMIT

Permittee GENERAL PUBLIC

Permit No. GP 99-03 (199920003)

Issuing Office OMAHA DISTRICT, CORPS OF ENGINEERS

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

This permit authorizes the initiation, operation, and closure of surface coal mines in waters of the U.S. in Wyoming, except as noted herein. See Appendix A for description of authorized activities.

NOTE: APPLICANTS USING THIS PERMIT MUST SUBMIT A NOTICE OF INTENT AS DESCRIBED IN APPENDIX C AND OBTAIN FORMAL APPROVAL PRIOR TO CONDUCTING SURFACE COAL MINING ACTIVITIES IN JURISDICTIONAL AREAS.

Project Location:

Waters of the U.S., including wetlands, within the state of Wyoming.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on January 31, 2005. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See Appendix B for Special Conditions.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) *(DATE)*

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

MARK E. TILLOTSON
(DISTRICT ENGINEER)
COLONEL, CORPS OF ENGINEERS

BY: 1/26/2000 *(DATE)*
PAUL R. WEMHOENER, CHIEF
OPERATIONS DIVISION

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) *(DATE)*

MAR 2000 Received Land Quality Division

☆U.S. GOVERNMENT PRINTING OFFICE: 1986 — 717-425

PERMITTEE: General Public
DA PERMIT NO.: 199920003

APPENDIX A
AUTHORIZED ACTIVITIES

All authorized activities are to be associated with the initiation, operation, and closure of a surface coal mine. Permanent and temporary activities allowed in jurisdictional areas include, but are not limited to:

1. Access/haul roads and rail spurs. Includes discharges of dredge and fill material and associated impacts within the mine permit area for realigned public roads, mine access roads, haul roads, as well as railroad approaches and spurs.

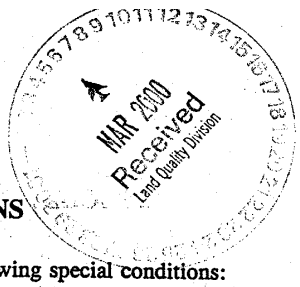
2. Topsoil, overburden, and coal removal as well as stockpiling. Includes discharges and other impacts associated with drainage activities, grading, soil redistribution, pit creation, and other coal retrieval activities. Additionally, stockpiling of stripped materials in jurisdictional areas is included.

3. Conveyor systems and utility lines. Fills associated with the construction of conveyor systems as well as pipe and utility lines are included.

4. Impoundments. Includes water quality and flood control impoundments for mine operations as well as construction of reclamation impoundments such as stock ponds and wetland reclamation features.

5. Channel realignments. Relocation of drainage features (ephemeral and intermittent) for mine operations. Perennial streams can be realigned only for reclamation purposes which are to restore the channel.

PERMITTEE: General Public
DA PERMIT NO.: 199920003



APPENDIX B
SPECIAL CONDITIONS

All activities authorized under this permit must comply with the following special conditions:

1. Water Quality: The permittee must comply with the conditions established by the Wyoming Department of Environmental Quality's Water Quality Division 401 certification issued September 20, 1999. They denied use of this permit in class I waters located outside the boundaries of the Wind River Indian Reservation. **Individual certification must be obtained for any activities in class I waters.** The Environmental Protection Agency has denied water quality certification for activities within the boundaries of the Wind River Indian Reservation in accordance with their authority under Section 401 of the Clean Water Act of 1972. **Individual certification must be obtained for any activities on the Wind River Indian Reservation.**

2. Threatened and Endangered Species: No activity is authorized that is likely to jeopardize the continued existence of species, or their critical habitats, designated or proposed for designation as threatened or endangered pursuant to the Endangered Species Act of 1972. The Office of Surface Mining is considered to be the lead Federal agency to ensure compliance with the ESA. Individual authorizations under this permit are not valid unless ESA has been complied with by the lead Federal agency.

3. Historic Properties: No activity is authorized that would adversely impact sites included in the most current listing of the National Register of Historic Places or sites known to be eligible for such listing, sites included in the National Register of Natural Landmarks, or any other known historic, cultural, or archaeological sites until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C pursuant to the National Historic Preservation Act of 1966. The Office of Surface Mining is considered to be the lead Federal agency to ensure compliance with the NHPA. Individual authorizations under this permit are not valid unless the NHPA has been complied with by the lead Federal agency.

4. Mitigation: Impacts to wetlands and other waters of the U.S. (excluding ephemeral streams) must be adequately mitigated in a wetland and waters reclamation plan. See Appendix C for guidance concerning plan content.

5. Soils handling: Special handling of wetland soils (upper 6-12 inches) must be accomplished.

6. Fens: This permit is not applicable to activities which involve impacts to fens. Fens are defined as wetlands that contain (all or in part) soils classified as histosols or mineral soils with a histic epipedon.

7. Springs: This permit is not applicable to activities which involve impacts to the water source of natural spring areas. A spring source is defined as any location where there is artesian flow emanating from a distinct point. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

8. Perennial Streams, Creeks, and Rivers: This permit does not allow the relocation, realignment, and/or the channelization of perennial streams, creeks and rivers except for channel restoration purposes.

9. Spawning Areas: Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. This permit is not applicable to activities that physically destroy spawning areas without adequate mitigation.

10. Sanctuaries, Refuges, Monuments, Wilderness Areas, Research Sites, and Preserves: The permit is not applicable for activities proposed in these areas.

PERMITTEE: General Public
DA PERMIT NO.: 199920003

APPENDIX B
SPECIAL CONDITIONS (CONTINUED)

11. Wild and Scenic Rivers: No discharge may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed discharge will not adversely effect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, Forest Service, Bureau of Land Management, Fish and Wildlife Service).

12. Tribal Rights: No activity is authorized that would impair reserved tribal rights; including, but not limited to, water, fishing, and hunting rights.

13. Suitable Fill Material: No discharge may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material discharged must be free from toxic pollutants in toxic amounts as required by Section 307 of the Clean Water Act. In Wyoming, the Corps issued a prohibition against the use of certain materials as fill in a Public Notice dated March 21, 1994.

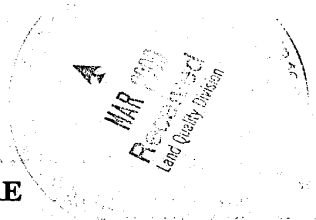
14. Proper Maintenance: Any structure authorized, particularly impoundments associated with final reclamation, must be properly maintained, including maintenance necessary to ensure public safety and structure longevity.

15. Water Supply: No activity which will adversely effect water supplies and well head areas is approved by this permit.

16. Adverse Effects from Impoundments: If the activity creates an impoundment of water, adverse effects on the aquatic ecosystem caused by the accelerated passage of water and/or the retention of its flow shall be minimized to the maximum extent practicable.

17. Coal Bed Methane (CBM) Pump Water: Coal mines approved under this permit are to use groundwater generated from coal bed methane production wells for wetland creation/enhancement during mine operations to the maximum extent practicable as long as water is supplied from CBM wells. Final wetland reclamation plans are not to rely on the use of CBM well water.

PERMITTEE: General Public
DA PERMIT NO.: 199920003



APPENDIX C
APPLICATION PROCEDURE

All entities intending to undertake surface coal mining activities in accordance with General Permit (GP) 99-03 are required to submit a **"Notice of Intent"** (NOI) to the Corps at the following address prior to the start of construction: **U.S. Army Corps of Engineers, Wyoming Regulatory Office, 2232 Dell Range Blvd., Suite 210, Cheyenne, Wyoming, 82009-4942**

All NOI's must contain sufficient information for the Corps to determine if a project complies with the terms and conditions of GP 99-03. All NOI's must contain the information described below. However, the Corps, WDEQ, or EPA may require more detailed information if necessary to ensure compliance. No discharge is authorized until a letter of authorization is provided to the applicant by the Corps.

1. Applicant: Name, address, and telephone number of the applicant (landowner) and contact persons.

2. Project Location: A legal description of the project location, including borrow and disposal sites, by quarter, section, township, and range is required. An enlarged copy of the appropriate portion of the U.S. Geological Survey topographic map for the area is sufficient. However, an overall mine permit boundary map is preferred.

3. State authorization: A copy of the current WYDEQ-LQD Coal Mining permit for the current term (approved Form 1).

4. Project Description: A brief written description of the project. Submittals must include a table identifying wetland and waters impacts which will occur during the current term of permit. Wetland and water types (playa, meadow, marsh, aquatic bed, ephemeral draw, etc.) must be identified in tabular form with acreage type to be impacted. For purposes of this permit, impacted includes filled, excavated, drained, dewatered or otherwise adversely modified by coal mine operations.

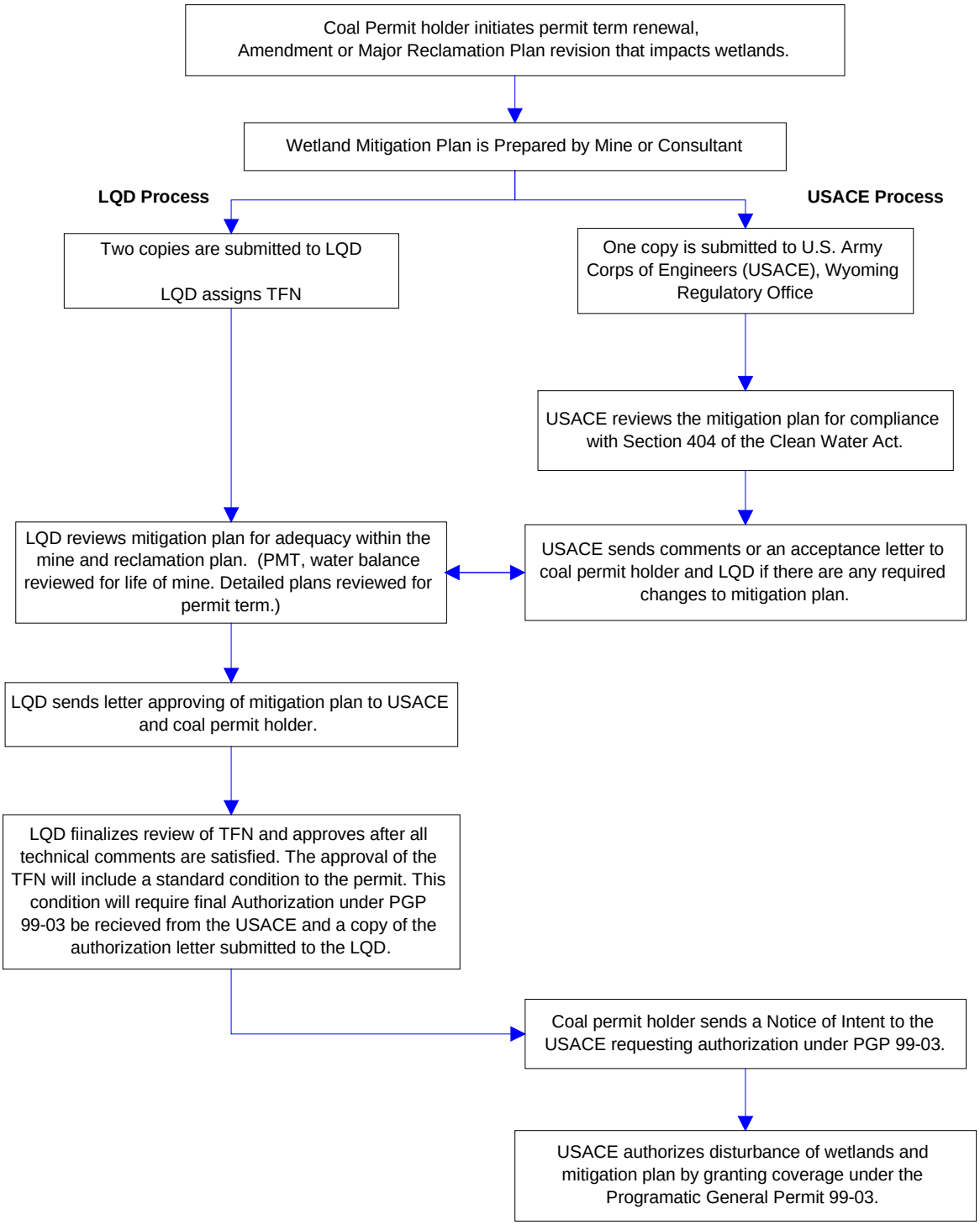
5. Project Drawings: Drawings must include a plan view showing the mine area approved by the Wyoming Department of Environmental Quality, Land Quality Division.

6. Wetland Delineation: A wetland delineation for the **entire life of mine permit boundary area.** Delineations must be completed by qualified individuals in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual dated January 1987 and any updates and supplements to the manual. A list of wetland delineation consultants and more detailed information on delineation requirements is available upon request. Delineation maps must show all areas that meet the definition of wetland, as defined in the manual, and all other water features such as ditches, streams, ponds, and lakes. However, some areas that exhibit wetland characteristics may not be within the Corps' jurisdiction. Applicants are encouraged to submit delineation results in advance with recommendations on potential non-jurisdictional areas and request verification from the Corps if there is a concern regarding jurisdiction.

7. WYDEQ-LQD Approved Wetland and Waters Final Reclamation Plan: Two complete copies of the wetland and waters final reclamation/restoration plan. At a minimum, plans are to address basic information requirements identified in Compensatory Mitigation Guidelines for Wyoming. A copy is attached to this permit. **Agency Coordination:** Prior to issuance of individual authorizations under this permit, the U.S. Fish and Wildlife Service will be notified by the Corps of all pending NOIs and be allowed 15 days to provide comments on the adequacy of the wetland and waters final reclamation plan.

Attachment B

FLOWCHART OF WETLAND MITIGATION PROCESS



COMPENSATORY MITIGATION GUIDELINES FOR WYOMING

I. Objective

The intent of this guideline is to provide consistent guidance to applicant's with projects which involve compensatory mitigation proposals. It is believed that this guideline will allow applicants the ability to prepare and compile adequate data and information needed to determine the acceptability of mitigation proposals. This should allow for quicker regulatory reviews as well as identification of potential problems or advantages with mitigation designs.

II. Basic Information Requirements for Mitigation Proposals

While information needs vary with mitigation designs, some basic information requirements consistently need to be addressed, regardless of the proposal. This section outlines those information needs the Wyoming Regulatory Office expects to be contained in compensatory mitigation plans. Note that additional specific information needs are to be worked out during the permit review process to ensure adequate mitigation.

Mitigation Goals

Mitigation design proposals need to include a text section which clearly specifies its goals. This discussion needs to include acreage, type (Cowardin classification), and function(s) of wetlands or other waters lost at the project site. It also needs to specify the particular attributes (acreage, type, vegetation, management strategy, etc.) of the mitigation design which are intended to offset the losses. If out-of-kind or off-site mitigation is proposed, justification is required.

Existing conditions of mitigation site

A description of the mitigation site in terms of location, size, immediate surrounding land use, historic land use, context in relation to watershed, vegetation, soils, and hydrology is required. A copy of the applicable portion of the USGS Quadrangle and/or National Wetland Inventory map with the site identified on it must be included. Aerial photography of the site is recommended but not required.

Delineation

- If wetlands and other waters of the U.S. are present at the mitigation site, a delineation of these areas (conducted in accordance with November 15, 1996 Wyoming Regulatory Office guidance outlining minimal information requirements for acceptable delineations under the 1987 Corps of Engineers Wetland Delineation Manual and its revisions) is required.

Baseline functionality

- If the mitigation plan involves wetland restoration and/or enhancement, information demonstrating current **degradation** is required. Functional assessment models may be required to assist in pre-treatment determinations as well as predict and measure final results and goals. Preservation, an option of last resort, will require a detailed site assessment as well as justification of imminent development.

Design of Mitigation Site

Drawings

Scaled plan view drawings

- full size and reduced sized copies
- no smaller than 1" = 400,' however, 1" = 100" preferred
- existing and proposed topography at a scale from which accurate determinations relative to hydrology and vegetative community can be readily discerned (see cross sections below). 1 foot contours are recommended.
- existing wetland and other waters delineation boundaries clearly identified
- spoil disposal areas
- anticipated wetland cover type (Cowardin et.al.) identified
- soil erosion and sediment control features identified
- location of cross sections
- location of monitoring transect(s) and permanent photo locations, vegetation sampling plots, piezometers or other hydrology data collection points, etc.

Scaled cross sections

- show existing and proposed ground surfaces with elevations indicated. Placed topsoil depths must be specified.
- ordinary high water elevation and anticipated groundwater levels.
- width, depth, and bottom elevations of water supply ditches and top elevations and widths of berms, dams, etc.

Other treatments

Soils handling

- wetland soils at the impact site should be transported to the mitigation site for placement. Stockpiling and timing of placement of topsoil materials must be included.

Vegetation planting

- For seed mixes, designate species composition, pounds per acre, wetland indicator status, and seed source. For use of saplings, sprigs, plugs, mats, etc., identify species composition, wetland indicator status, spacing, and total numbers per species. Timing of planting must be specified.

Hydrology

Adequate and reliable hydrology at the mitigation site is essential for success. Baseline data supporting proposed water supply of a mitigation site is required. The two basic categories of water supply for mitigation sites typically used in Wyoming are passive and managed. Basic hydrology information needs include:

Passive

- This water supply is dependent on natural groundwater fluctuations or and/or overbank flooding with no human management techniques. Groundwater supported mitigation designs need to be correlated to site specific data gathered from the use of piezometers, soils, spring flow data, and/or other site investigation data. Much of this information can be gathered during a delineation of the site. Although several years of groundwater data is preferred, measurement of an average year's peak groundwater level is acceptable. Occasionally, site specific soils data can be used as a surrogate for this data element.

- Data is also required to document and justify overbank flooding. This typically involves detailed surveying as well as hydrologic modeling. The anticipated frequency and duration of flooding needs to be specified.

- If the mitigation area is to be supported by precipitation, a water budget will be required including identification of anticipated run off volumes and evaporation rates.

Managed

- This water supply is a controlled supply system (diversions, canals, ditches, etc.) and typically incorporates the use of impoundment features (berms, dams, dikes, etc.) with water control structures. This is the least preferred hydrology supply option due to the continual need for human activity to ensure adequate supply to the mitigation site as well as long-term maintenance.

- Construction plans and cross sections (see Section 3a) are needed for water supply elements as well as impoundment features.

- Water rights - Mitigation sites typically require an adjudicated water right. Demonstration of the right's availability and priority need to accompany the mitigation proposal for managed hydrology systems.

- A water management plan. Dates of initial inundation, draw down, and re-inundation (if proposed) must be specified. The responsible party to operate and maintain the site needs to be identified.

Monitoring

Section 404 permits typically require monitoring of the mitigation area as a condition with the submission of annual reports. Monitoring and report compilation must be accomplished by a qualified individual with experience in wetland mitigation. Annual reports for a period of 3 to 5 years is the normal period for monitoring, although longer periods may be required.

Success Criteria/Performance Standards

- Success criteria are typically correlated to the impacted wetland site(s) based on species composition and cover types. However, site availability, practicability, and other overriding environmental goals, such as threatened and endangered species habitat opportunities, can result in mitigation success criteria that is not correlated to the impact site. Construction of mitigation areas should be built prior to or concurrently with the loss of aquatic resources. The resulting mitigation areas must meet 1987 Corps of Engineers Delineation Manual criteria to be considered as wetlands.

Sampling protocols

- Sampling protocols and intensity for all three parameters (vegetation, soils, and hydrology) must be explicitly described in the mitigation proposal.

- vegetation - transect with quadrat sampling (preferred), point intercept, and other forms of vegetation assessment are acceptable. Total cover and relative cover per species is required and is to be correlated to impact wetland data, where possible. Adequate sampling intensity must be accomplished to demonstrate that proposed wetland mitigation acreage has been achieved. Agreement to a weed control plan needs to be included with a list of undesirable species (state or county weed lists) that will be managed if they comprise more than 20% of a sample area.

- hydrology - excavation of test pits or use of piezometers to determine groundwater levels is required. Use of staff gages in areas designed to be flooded, even intermittently, must be included. Frequency of site visit(s) must be stipulated. Monitoring is to be done during the known or projected peak of the hydrograph and/or seasonal high groundwater. Documentation of low water period elevations may also be required.

- soils - excavation of soil pits and examination for redoximorphic features is required. Soil profile data is to be logged with depth of features found. While hydric soil indicators may not become evident within the required monitoring period, demonstration of how hydric soil conditions are concluded as being present or absent needs to be stated.

Report content

- Reports must clearly identify success criteria and how the mitigation site compares to those criteria. Reports need to include a comparison of actual wetland mitigation acreage to proposed acreage as well to project impact acreage. Mitigation areas need to be broken down based on type (Cowardin classification). Reports need to include author's interpretation of data and discussion as to how mitigation is determined to be demonstrating success or failure. Problems that arise need to be identified in the reports as well as corrective measures that have been implemented or proposed. Corrective actions need to be coordinated with the Corps prior to implementation.

- Routine wetland delineation data forms, or similar Corps-approved forms which contain appropriate data fields.

- Plan view map (see section 3ai above)

- Color photos of mitigation site from permanently established locations.

III. Additional Information Requirements

While this guideline attempts to establish basic information requirements anticipated with typical wetland mitigation design proposals, more extensive data and information may be required, at the Corps' discretion, to ensure that regulatory requirements are complied with. Below are some additional items that may be required with mitigation plans. This is not an exhaustive list.

Contingency plans - It is not unusual for wetland mitigation plans to be unsuccessful. Depending on the mitigation design as well as problems that arise with mitigation site construction, formulation of a contingency plan may be required. This can include abandonment of the mitigation site and new construction at another site.

Deed Restrictions/Conservation Easements - While not a mandatory item, it is not unusual for some form of easement to be placed on the mitigation site to ensure its long-term survivability. These instruments are not required for mitigation sites on Federal lands.

Performance Bonds - To ensure that mitigation is accomplished that meets objectives and goals, the Corps can require that performance bonds be posted.

Attachment D

Example of USACE Coal Mine Mitigation Special Condition

Annual monitoring reports documenting wetland mitigation progress and eventual success must be submitted to the Corps of Engineers, Wyoming Regulatory Office. The first report is due January of the first full year after construction of the wetland mitigation site. Reports are to be submitted for a period not to exceed 5 years or until the mitigation is determined by the Corps to be successful, whichever is less. If success is not achieved within 5 years, the permittee will be required to modify the site(s) and/or implement other mitigation plan(s), both of which are subject to approval by the Corps. Monitoring requirements can be extended if success is not achieved within the 5-year period. Monitoring reports must include the following:

(a) Post-construction wetland delineation completed in accordance with the Corps of Engineers 1987 Wetland Delineation Manual. Sampling is to be accomplished during the middle of the growing season. Vegetation data must be collected at established quadrat sampling points along established transects to determine vegetation composition. Transects are to be spaced at 150-foot intervals along the length of each wetland mitigation site or adjusted to ensure that each mitigation site is adequately sampled to support wetland determinations that proposed acreage is achieved. There are to be a minimum of 3 sampling stations per transect with 2 quadrat sampling points per cover type per sampling station. Vegetation assessments are to be accomplished in accordance with Corps-accepted sampling techniques. Hydrology data must be collected at established locations. Installation of piezometers in each mitigation site is required. Water data, surface and subsurface, must be recorded at the normal peak of the hydrograph and/or groundwater. Frequency and duration of adequate hydrology must be documented. Soils must also be investigated for evidence of redoximorphic features as well as soil color, texture, etc.

(b) Plan view map showing the wetland mitigation site and indicating areas where wetlands are developing as well as identification of type. Acreage of each wetland/water type based upon the Cowardin classification (e.g., palustrine emergent, aquatic bed, unconsolidated bed, scrub-shrub) needs to be specified in tabular form and correlated to the plan view drawing. Additional clarification of wetland type should be included for the emergent class, if warranted, such as meadow, shallow marsh, and deep marsh.

(c) Comparison of monitoring results with the approved mitigation plan**.** Data collection and analysis must be accomplished by a qualified individual proficient in wetland delineation and functional assessment techniques with conclusions discussed in each report.

(d) Photographs of each reclaimed wetland and/or open water area from established locations taken during the growing season.

(e) Mitigation success is achieved when the mitigation site has more than *__% gross vegetative aerial coverage as determined by the average of all quadrat sample plot data. Hydrophytes must comprise a minimum of *__% of the dominant species as determined from the average of all data points from all polygons. All wetland data points must be comprised of more than 50% hydrophytes which are Wyoming native species. A weed control plan must be implemented for any site if species listed in the Wyoming Seed Law Prohibited Noxious Weed List (designated and prohibited) comprise more than 20% of the dominants at any data point.

*** figures derived from baseline wetland delineation for the mine**