



The State
of Wyoming



Department of Environmental Quality

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MEMORANDUM

TO: Interested Persons

FROM: Richard A. Chancellor, Administrator, Land Quality Division *RE*

DATE: March 18, 2002

SUBJECT: CANCELLATION of the Previously Scheduled March 26 and 27, 2002 Land Quality Advisory Board Meeting

The first quarter Land Quality Advisory Board meeting previously scheduled for Tuesday and Wednesday, March 26 and 27, 2002 in Casper, Wyoming has been CANCELLED as a result of internal concerns regarding proposed changes to Chapter 7 and 11 (In situ Mining) of the Noncoal rules. Scheduling of the second quarterly meeting of the Land Quality Advisory Board will be announced at a later date.

If you have any questions, please feel free to contact our office at 307-777-7756.

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DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION



Draft Proposed Rules and Statement of Reasons

Noncoal - Chapters 7 and 11

Rule Package 1L - In Situ

Table of Contents

	<u>Page</u>
Organization of Rule Package 1L	i
History of Rule Package 1L	ii
Table I - Requirements for State Programs from 40 CFR 145.11	iv
Table II - List of Sections within Proposed Chapters 7 and 11	vi
Draft Proposed Rules with Statement of Reasons	1
Attachment A - Draft Proposed Rules	
A1 - Strike & Underline Only	A1-1
A2 - As Rules Would Appear If Adopted	A2-1
Attachment B - EPA Rule Side-by-Sides	
B1 - 40 CFR 124	B1-1
B2 - 40 CFR 144	B2-1
B3 - 40 CFR 146	B3-1
Attachment C - LQD Documents	
Sample Table of Contents of State Decision Document	
Public Notice Format No. 6 with Proposed Revisions	
Public Notice Format No. 10 with Proposed Revisions	
Form 1UIC with Proposed Revisions	
Form 5RD with Proposed Revisions	
Reclamation Bond Form	

Organization of Rule Package 1L

The Draft Proposed Rules with Statement of Reasons includes strike and underline versions of Chapters 7 and 11 and, where applicable in Chapter 11, includes side-by-side comparison of the proposed Land Quality Division (LQD) rule with the U.S. Environmental Protection Agency (EPA) rule. For clarity, the Statement of Reasons are italicized and interspersed within the proposed rules.

Because of the scope of the proposed rules, several other documents are attached for information purposes and to assist the reviewer. Table I, which is an excerpt from the EPA rules, lists those EPA rules for which State programs must have a counterpart. Appendix A includes the proposed changes to Chapters 7 and

MWS 2097 758

11 presented in simpler formats. Appendix A1 includes the changes as strike and underline only, i.e., without the side-by-side comparisons and Statement of Reasons, and Appendix A2 includes a "clean" copy of the proposed Chapters 7 and 11, i.e., the rules as they would appear if adopted. Appendix B includes side-by-side comparisons of the EPA rules with the proposed LQD rules, in the order of the EPA rules. Appendix C includes relevant LQD documents, with changes to parallel the proposed rules.

History of Rule Package 1L

To better understand the history of this package, brief descriptions of the regulation of in situ mining in Wyoming and the Wyoming Underground Injection Control (UIC) program are provided. Updating and combining State rules is also discussed, along with specific history of Package 1L.

State Regulation of In Situ Mining. The Wyoming Environmental Quality Act of 1973 contained overlapping authorities for LQD and Water Quality Division (WQD) regulation of in situ mining. In 1979, the LQD was designated by statute as the lead authority for permitting in situ mining operations. The Land Quality Division Rules and Regulations were subsequently amended in 1980 to include Chapter 11, In Situ Mining.

Wyoming UIC Program. Under mandate of the Safe Drinking Water Act (SDWA) of 1974, the EPA promulgated rules in May and June of 1980 which established minimum requirements, technical criteria, and standards for UIC activities, including in situ mining. Consistent with the Congressional intent of the SDWA that regulation of underground injection should continue to be primarily the function of the State, the EPA rules included minimum requirements for State programs, i.e., for granting State primacy over UIC activities. To that end, the WQD Rules and Regulations were amended on September 4, 1980 by the promulgation of Chapters 8 and 9, Quality Standards for Wyoming Groundwaters and Wyoming Groundwater Pollution Control Permit, respectively. Chapter 9 cross-references the LQD in situ mining rules.

EPA approved Wyoming's program, with conditions, in March, 1983 (notice of approval published in the July 15, 1983 Federal Register). The elements of the approved Wyoming program are in 40 CFR § 147.2550 *et seq*, which also cross-references LQD in situ mining rules.

Updating and Combining Rules. After EPA's approval of Wyoming's program in March 1983, EPA modified its rules in 1984, 1988, and 1993. State UIC programs are required by 40 CFR 144.1 to be at least as effective as the Federal program; however, Wyoming did not modify its program in response to the Federal modifications (or address the conditions in the initial approval). The State is now proposing to do so because this lack of consistency with the Federal rules has made primacy retention an issue (letter of August 21, 2001 from G. Beach (WQD) to D. Hogle (EPA)).

The State is also proposing to combine the WQD and LQD rules pertaining to in situ mining. This process started with WQD in the early 1990s (proposed rules went to the WQD Advisory Board in February 1990 and October 1994). At a meeting in October 1995 between LQD, WQD, the public, and industry

representatives, it was decided that LQD would take the lead in amending the rules in Chapters 7 and 11 (Permit Revisions and In Situ Mining, respectively) of the LQD Noncoal Rules and Regulations. (Coal rules related to in situ mining will be addressed once the Noncoal rules are completed because coal in situ mining is an infrequent activity.) In May 1996, the roles of WQD and LQD in regulation of mining activities, including in situ mining, were further clarified in a Working Agreement.

Rule Package 1L. Draft rules were prepared by LQD and sent for comment in December 1995. After comment/response rounds in 1996 and 1997 with industry and/or EPA, the draft rules were brought before the Land Quality Advisory Board (LQAB) on August 6, 1997. The LQAB voted unanimously to forward the rules to the Environmental Quality Council (EQC). The EQC held a public hearing on November 9, 1998. In review of the verbal and written comments received before and during the EQC hearing, the LQD found several items of concern in comparison of the proposed LQD rules with the EPA rules, some of which were not related to comments. Therefore, in January 1999, a memorandum was sent to the EQC by the Director of the Wyoming Department of Environmental Quality asking that the rules package be remanded to LQD for further revision to ensure EPA requirements were met.

The current draft of the proposed rules is intended to reflect the work that has been done to date. Topics that were commented on before the 1997 LQAB or 1998 EQC are identified, along with the changes that were or were not made in response to these comments. In addition, topics that were of concern to EPA have been addressed.

Table I
EPA Rules

TITLE 40--PROTECTION OF ENVIRONMENT

PART 145--STATE UIC PROGRAM REQUIREMENTS--Table of Contents

Subpart B--Requirements for State Programs

Sec. 145.11 Requirements for permitting.

(a) All State programs under this part must have legal authority to implement each of the following provisions and must be administered in conformance with each; except that States are not precluded from omitting or modifying any provisions to impose more stringent requirements.

- (1) Section 144.5(b)--(Confidential information);
- (2) Section 144.6--(Classification of injection wells);
- (3) Section 144.7--(Identification of underground sources of drinking water and exempted aquifers);
- (4) Section 144.8--(Noncompliance reporting);
- (5) Section 144.11--(Prohibition of unauthorized injection);
- (6) Section 144.12--(Prohibition of movement of fluids into underground sources of drinking water);
- (7) Section 144.13--(Elimination of Class IV wells);
- (8) Section 144.14--(Requirements for wells managing hazardous waste);
- (9) Sections 144.21-144.26--(Authorization by rule);
- (10) Section 144.31--(Application for a permit);
- (11) Section 144.32--(Signatories);
- (12) Section 144.33--(Area Permits);
- (13) Section 144.34--(Emergency permits);
- (14) Section 144.35--(Effect of permit);
- (15) Section 144.36--(Duration);
- (16) Section 144.38--(Permit transfer);
- (17) Section 144.39--(Permit modification);
- (18) Section 144.40--(Permit termination);
- (19) Section 144.51--(Applicable permit conditions);
- (20) Section 144.52--(Establishing permit conditions);
- (21) Section 144.53(a)--(Schedule of compliance);
- (22) Section 144.54--(Monitoring requirements);
- (23) Section 144.55--(Corrective Action);
- (24) Section 124.3(a)--(Application for a permit);
- (25) Section 124.5 (a), (c), (d), and (f)--(Modification of permits);
- (26) Section 124.6 (a), (c), (d), and (e)--(Draft Permit);
- (27) Section 124.8--(Fact sheets);

Table I, continued

Sec. 145.11(a) continued

- (28) Section 124.10 (a)(1)(ii), (a)(1)(iii), (a)(1)(v), (b), (c), (d), and (e)--(Public notice);
- (29) Section 124.11--(Public comments and requests for hearings);
- (30) Section 124.12(a)--(Public hearings); and
- (31) Section 124.17 (a) and (c)--(Response to comments).
- (32) Section 144.88--(What are the additional requirements?);

Sec. 145.11(b) (1) States need not implement provisions identical to the provisions listed in paragraphs (a)(1) through (a)(32) of this section. Implemented provisions must, however, establish requirements at least as stringent as the corresponding listed provisions. While States may impose more stringent requirements, they may not make one requirement more lenient as a tradeoff for making another requirement more stringent; for example, by requiring that public hearings be held prior to issuing any permit while reducing the amount of advance notice of such a hearing.

(2) State programs may, if they have adequate legal authority, implement any of the provisions of parts 144 and 124. See, for example Sec. 144.37(d) (continuation of permits) and Sec. 124.4 (consolidation of permit processing).

Table II
List of Sections Within Proposed Chapters 7 and 11

Chapter 7 - Noncoal Mine Permit or License Revision

Section 1.	Submittal of Revisions	1
Section 2.	Criteria for Public Notice Requirements	4
Section 3.	Notice and Opportunity for Public Hearing	6
Section 4.	Decision	7
Section 5.	Review of Permits or Research and Development Testing Licenses	8

Chapter 11 - Noncoal In Situ Mining

Section 1.	Definitions	9
Section 2.	General Requirements	22
Section 3.	Application Content Requirements - Adjudication and Baseline Information	30
Section 4.	Application Content Requirements - Mine (Operations) Plan	39
Section 5.	Application Content Requirements - Reclamation Plan	48
Section 6.	Well Location, Depth Intervals, and Completion Requirements	57
Section 7.	Mechanical Integrity Testing (MIT) of Class III Injection Wells	67
Section 8.	Requirements for Plugging of Drill Holes and Repair, Conversion and Plugging of Wells	76
Section 9.	Permit and Research And Development Testing License Conditions ..	82
Section 10.	Aquifer Classification and Exemption	87
Section 11.	Prohibitions	91
Section 12.	Noncompliance and Excursions	95

Table II, continued

Chapter 11 - Noncoal In Situ Mining

Section 13.	Corrective Actions and Compliance Schedules	109
Section 14.	Monitoring Requirements	112
Section 15.	Reporting Requirements	116
Section 16.	Maintenance and Retention of Records	121
Section 17.	Research and Development Testing License Application	124
Section 18.	Duration of Permits and Research and Development Testing Licenses	125
Section 19.	Revisions to Class III Well Portions of an In Situ Mine Permit or Research and Development Testing License	127
Section 20.	Revocation	134
Section 21.	Public Notice, Public Hearing, Comment, and Decision Requirements	140
Section 22.	Confidential Records	148

1. Proposed Rule Amendment: Chapter 7, Section 1

CHAPTER 7

NONCOAL MINE

PERMIT OR RESEARCH AND DEVELOPMENT TESTING LICENSE REVISIONS

Operators can revise Research and Development Testing Licenses in the same manner as permits, and the Administrator has the authority to revise (or require an operator to revise) Research and Development Testing Licenses. However, the present Chapter 7 does not clearly specify that Research and Development Testing Licenses can be revised. Therefore, several of the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Section 1. Submittal of Revisions.

Chapter 7, Section 1(a) A mine permit or Research and Development Testing License may be revised in accordance with this Chapter and upon approval by the Administrator, if the operator submits a request to the Division.

The terms "mine" and "Research and Development Testing License" were added for clarification. The phrase "in accordance with this Chapter" was also added to clarify that there are requirements in Chapter 7 that must be met in order for the Administrator to approve the proposed revision.

Chapter 7, Section 1(a-cont.) (b) Significant revisions are those which constitute a change described in Section 2 of this Chapter, except significant revisions to an in situ mine permit or Research and Development Testing License are those which constitute a change described in Chapter 11, Section 19(b). Any permit other than an in situ mine permit or Research and Development Testing License may be revised by identifying alterations to the mining or reclamation plan in the annual report or addendum thereto, or by obtaining prior approval from the Department, at the noncoal operator's discretion.

There are specific criteria that constitute a "significant revision" to an in situ permit or license. These criteria are included in Chapter 11, Section 19(b), so the cross-reference to that section was added. Similarly, all "alterations" to an in situ permit or license need to be processed as a revision, so the rule was revised to indicate that the option for "identifying alterations" through the Annual Report is not applicable. (Few non-coal operators use this option anyway because of the potential concern for

inadvertently introducing a change that might not be in compliance with LQD rules.) More details about EPA definitions of "significant" and "non-significant" revisions and about procedures for revising the Class III portions of a permit or license are included in the Rule Amendments to Section 2(b) of this Chapter and Section 19 of Chapter 11.

Chapter 7, Section 1(b)(c) Non-significant revisions shall be submitted in a format approved by the Administrator. Non-significant revisions to an in situ mine permit or Research and Development Testing License are those which constitute a change described in Chapter 11, Section 19(c). If promptly filed, and unless notified by the Administrator to delay, the operator may initiate the proposed change, unless the change is to an in situ mine permit or Research and Development Testing License, in which case the operator may initiate the proposed change only upon approval by the Administrator. All non-significant revisions shall include:

- (i) A brief description of the change and why the change is being sought;
- (ii) An outline or index indicating what pages, maps, tables, or other parts of the approved permit or Research and Development Testing License are affected by the revision; and
- (iii) Additional information necessary to support or justify the change.

As with "significant revisions," there are specific criteria that must be met for "non-significant revisions" of an in situ permit or license. These criteria are included in Chapter 11, Section 19(c), so the cross-reference to that section was added. Similarly, all "changes" to an in situ permit or license need to be processed as a revision, so the rule was revised to indicate that the option for the operator to initiate the change is not applicable. (Again, few non-coal operators use this option anyway because of the potential concern for inadvertently introducing a change that might not be in compliance with LQD rules.)

Chapter 7, Section 1(c)(d) Incidental changes which are not categorized under (a) (b) or (b) (c) of this Section shall be noted in the annual report.

Chapter 7, Section 1(d)(e) Each application shall contain:

- (i) The name and address of the operator;
- (ii) The permit number and date approved;

(iii) The following information, if different from that submitted in the original permit or Research and Development Testing License application:

(A) The precise location of the permit or Research and Development Testing License area by legal subdivision, section, township, range, county, and municipal corporation, if any;

(B) The names and last known addresses of the owners of record of the surface and mineral rights of the land covered by the permit or Research and Development Testing License; and

(C) The names and last known addresses of the owners of record of the surface rights of the lands immediately adjacent to the permit or Research and Development Testing License area.

(iv) A detailed description of the proposed revised mining, reclamation, or Research and Development Testing operation which shall also include:

(A) A USGS topographic map or equivalent of the permit or Research and Development Testing License area showing distinctly outlining and identifying the land to be affected by the revised mining or reclamation operation; ~~in detail, distinctly outlined and identified;~~

Section 1(e)(iv)(A) has been reworded to remove a redundant phrase. Specifically, the phrase "in detail" is deleted because a "detailed description" is already required in Section 1(e)(iv).

(B) For any proposed newly affected lands, if not submitted and approved in the original application for the permit:

(I) The information required in W.S. § 35-11-406(a)(vii) and (ix) ~~or, for in situ mining operations, the information required in W.S. § 35-11-428;~~ and

Striking the last portion of Section 1(e)(iv)(B)(I) is proposed because the information that is required for revisions to include new lands in permits or licenses for in situ mining is discussed in more detail in the proposed Chapter 11, Section 22(d)(ii).

(II) The extent to which the revised mining or reclamation operation will disturb, change, or deface the lands proposed to be affected, the proposed future use or uses of the land and the plan whereby the operator will reclaim the affected lands to the proposed future use or uses.

(C) Any significant changes in the estimate of the total cost of reclaiming the affected and proposed affected lands, computed in accordance with established engineering principles.

(v) Such other information as the Administrator deems necessary or as good faith compliance with the provisions of the Act require.

The authority to amend these rules is provided by W.S. §§ 35-11-110(b), 35-11-112(a)(i), 35-11-402(a)(x), 35-11-415(a), 35-11-429(a)(iv), and 35-11-431(a)(vii).

2. Proposed Rule Amendment: Chapter 7, Section 2

As in Proposed Rule Amendment #1, several of the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Section 2. Criteria for Public Notice Requirements.

Chapter 7, Section 2(a) Within 90 days after submission of the application for a permit or Research and Development Testing License revision, the Administrator shall notify the operator of whether or not the application is complete and whether notice and opportunity for public hearing is required.

Chapter 7, Section 2(b) Notice and opportunity for public hearing is required;

(i) For revision of an in situ mining permit or Research and Development Testing License in accordance with requirements of Sections 19(b) and (c) of Chapter 11:

'Non-significant' revisions to the Class III Well portions of permits and licenses are expressly limited by EPA to specific items (40 CFR 144.41), and EPA considers all other revisions to the Class III Well portions of permits and licenses to be "significant." In contrast, the State specifies items considered to be "significant" revisions, and all other revisions are classified as "non-significant." Therefore, the addition of Section 2(b)(i) is intended to cross-reference the sections in Chapter 11 which specify what are considered "significant" and "non-significant" revisions by EPA. For example, all increases in affected lands (for additional Class III wells) require a permit revision per EPA, i.e., for an in situ mine, the >20% limit applies only to Non-Class III Well portions of the permit or license. More details about EPA definitions of "significant" and "non-significant" revisions and about procedures for revising the Class III portions of a permit or license are included in the Rule Amendments to Chapter 11.

(ii) Whenever the application for a permit or Research and Development Testing License revision proposes the following changes, so long as they constitute significant deviations from that which was contemplated in the approved mining and reclamation plan. The following will normally be considered significant deviations unless otherwise determined by the Administrator:

(A) More than a ~~twenty~~ 20 percent increase in affected land from that which was approved in the original permit, with the following exception:

The word "twenty" has been replaced with the number "20" for grammatical reasons.

(B) A change in the approved future land use or uses which affects more than ~~twenty~~ 20 percent of the land within the permit or Research and Development Testing License area;

(iii) (C) A change in the approved method for insuring that all acid-forming or toxic materials, radioactive materials, or materials constituting a fire, health or safety hazard uncovered during or created by the mining or Research and Development Testing License process are promptly treated or disposed of during the mining, reclamation or Research and Development Testing License process in a manner designed to prevent pollution of surface or subsurface water or threats to human or animal health and safety;

(iv) (D) The construction or relocation of mills, tailings disposal facilities, or heap leach facilities;

(v) (E) A change in the approved method of mining which results in surface disturbance (e.g. underground, surface or in situ mining);

(vi) (F) A change which would adversely affect the quality, quantity, or distribution of water in surface or groundwater systems; or

(vii) (G) Any changes which propose significant alterations in the approved mining or reclamation operation as determined by the Administrator.

The authority to amend these rules is provided by W.S. §§ 35-11-112(a)(i), 35-11-402(a)(x), and 35-11-431(a)(vi).

3. Proposed Rule Amendment: Chapter 7, Section 3

As in Proposed Rule Amendment #1, several of the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Section 3. Notice and Opportunity for Public Hearing.

Chapter 7, Section 3(a) When required under Section 2 of this Chapter, the operator shall cause notice of the application for permit, non-Class III Well portions of an in situ permit and non-Class III Well portions of a Research and Development Testing License revision to be published in a newspaper of general circulation in the locality of the mining or Research and Development Testing License site once a week for four consecutive weeks commencing within 15 days after notification that publication is required. The notice shall contain that information required by W.S. § 35-11-406(j), the permit number and date approved, and a general description of the proposed revision. The operator shall also mail a copy of the application mine plan map to the Wyoming Oil and Gas Commission in accordance with W.S. § 35-11-406(j).

The phrase "of this Chapter" has been added to distinguish which Chapter in the Rules and Regulations applies.

The phrase "Non-Class III Well" has been added to clarify that revisions to the Class III portions of permits and licenses must also comply with the provisions of Chapter 11.

Chapter 7, Section 3(b) Objections may be filed in accordance with W.S. § 35-11-406(k), which objections shall list one or more reasons for denying a permit or Research and Development Testing License revision application as set out in W.S. § 35-11-406(m). If such written objections are filed, a public hearing shall be held in accordance with W.S. § 35-11-406(k). The Council shall issue findings of fact and make a decision on the application within 60 days after the final hearing.

The authority to amend these rules is provided by W.S. §§ 35-11-112(a)(i), 35-11-402(a)(x), and 35-11-431(vi).

4. Proposed Rule Amendment: Chapter 7, Section 4

As in Proposed Rule Amendment #1, the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Section 4. Decision.

Chapter 7, Section 4(a) The Administrator shall, with the concurrence of the Director, render a decision on the application for permit or Research and Development Testing License revision and approve or disapprove the proposed revision in accordance with the applicable criteria set out in W.S. § 35-11-406 and any regulations adopted pursuant thereto. The decision shall be made:

(i) Within 30 days after notification of a complete application, if notice is not required; or

(ii) If notice is required:

(A) Within 30 days after completion of the notice period, if the application for permit revision is not protested; or

(B) If the revision is protested and a hearing held, within 15 days from the receipt of any findings of fact and decision from the Environmental Quality Council.

Chapter 7, Section 4(b) The applicant shall be promptly informed of the decision on the application.

The authority to amend these rules is provided by W.S. §§ 35-11-112(a)(i), 35-11-415(a), 35-11-429(a)(iv), 35-11-432, and 35-11-434.

5. Proposed Rule Amendment/Adoption: Chapter 7, Section 5

As in Proposed Rule Amendment #1, the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Section 5. Review of Outstanding Permits or Research and Development Testing Licenses.

Chapter 7, Section 5(a) The Administrator, with the concurrence of the Director, may require the operator to submit an application for a permit or Research and Development Testing License revision and comply with all requirements of this Chapter. Any such requirement shall be based on written findings that, upon review of the operator's annual report for an in situ mine permit or annual request for renewal of a Research and Development Testing License or upon inspection of the existing operation, there is or is intended to be conducted a revised mining, reclamation or Research and Development Testing operation. Such review or inspection shall be conducted at least each year upon receipt of the operator's annual report for an in situ mine permit or annual request for renewal of a Research and Development Testing License, or inspection of the existing operation, there is or is intended to be conducted a revised mining or reclamation operation. Right of review shall be afforded as provided in the Wyoming Administrative Procedure Act. Nothing contained herein shall be construed to require compliance with any provision of the Act or regulation from which the existing operation has been specifically excepted.

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-112(a)(i), 35-11-402(a)(x), 35-11-411(b),(c),&(d), 35-11-415(a), 35-11-429(a)(v), and 35-11-431(a)(vii).

6. Proposed Rule Amendment/Adoption: Chapter 11, Section 1

CHAPTER 11

NONCOAL

IN SITU MINING

Section 1. Definitions.

Chapter 11, Section 1(a) "~~Background~~" means, ~~for the purposes of in situ mining,~~ the constituents or parameters and the concentrations or measurements which describe water quality and water quality variability prior to the injection of recovery fluid.

The phrase "for the purposes of in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

PROPOSED RULE ADOPTION	EPA RULE
Chapter 11, Section 1(b) <u>"Catastrophic collapse" means the sudden and utter failure of overlying strata caused by removal of underlying materials.</u>	40 CFR 146.3....Catastrophic collapse means the sudden and utter failure of overlying "strata" caused by removal of underlying materials....

This term is used in some of the EPA Rules proposed for adoption, so a definition was needed.

Chapter 11, Section 1(c) *On next page...*

PROPOSED RULE ADOPTION	EPA RULE
<p>WQD R&R, Ch. 13, §2(i) LQD Chapter 11, Section 1(c) <u>"Class III well" means a well used for in situ mining for the injection of recovery fluid for the purpose of extracting minerals, or products, which injects for extraction of minerals, or products, or recovers recovery fluids, minerals or products, including a well used in:</u></p> <p><u>(i) Mining of sulfur by the Frasch process;</u></p> <p><u>(ii) In situ mining of uranium or other metals; this category includes only in situ production from ore bodies which have not been conventionally mined. Wells used for solution mining (such as stopes leaching) of conventional mines are classified as Class V wells;</u></p> <p><u>(iii) In situ mining of salts, trona, or potash. With the exception that wells, used in reclamation activities, to inject into previously mined areas of underground trona mines will be classified as Class V wells rather than Class III wells (and therefore not regulated under this Chapter), regardless of whether such wells are used for secondary recovery of trona;</u></p> <p><u>(iv) Underground coal gasification operations;</u></p> <p><u>(v) Solution mining of open pits or underground excavations used for the production of minerals, such as stopes leaching;</u></p> <p>(vi)<u>(iv) Fossil fuel recovery, including coal, lignite, oil shale and tar sands; or</u></p> <p>(vii)<u>(v) Experimental technologies, such as pilot scale in situ mining wells in previously unmined areas.</u></p>	<p>40 CFR 144.6(c) & 146.5 Classification of injection wells. Injection wells are classified as follows:... (c) Class III. Wells which inject for extraction of minerals including:</p> <p>(1) Mining of sulfur by the Frasch process;</p> <p>(2) In situ production of uranium or other metals; this category includes only in situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included as Class V;</p> <p>(3) Solution mining of salts or potash.</p>

This section includes definitions transferred from the Wyoming Department of Environmental Quality (WDEQ), Water Quality Division Rules and Regulations (WQD R&R, Chapter 13, Section 2(i)). The following discussion goes through the rule by subsection to address the proposed revisions and the Wyoming statutes (W.S. §35-11-103(f)(iv)) and EPA Rules (40 CFR 144.6(c) and 146.5(c)):

In the introductory portion of the rule, the proposed changes are simply for clarification.

Proposed Subsection 1(c)(i) is the same as WQD R&R Chapter 13, Section 2(i)(i) and the EPA Rules (40 CFR 144.6(c)(1) and 146.5(c)(1)).

Proposed Subsection 1(c)(ii): The WQD term "open pits or underground excavations used for the production of minerals" (WQD R&R Chapter 13, Section 2(i)(ii)) is replaced with the EPA term "conventional mining." This change is consistent with the EPA definition of conventional mines in 40 CFR 146.3 which defines "conventional mine" as an open pit or underground excavation for the production of minerals. Adoption of the definition for "conventional mine" is proposed below.

Proposed Subsection 1(c)(iii): Trona is listed along with the broader term "salts" and the specific mineral potash (as in WQD R&R Chapter 13, Section 2(i)(iii)). This is considered a helpful clarification of the EPA definition (40 CFR 144.6(c)(3) and 146.5(c)(3)) because of the importance of trona mining in Wyoming. However, subsection (c)(iii) specifically excludes wells used for injection into previously mined areas of conventional mines. This is a change from the current WQD R&R Chapter 13, Section 2(i)(v)). However, it is considered appropriate given recent developments in mining and reclamation. For example, in recent years, some of the trona mines have tried injection of tailings into the mined out areas in an effort to reduce the need for surface disposal of such tailings, and have tried to incorporate secondary trona recovery into the process. These trona "reclamation" wells are classified as Class V wells (specifically 5B1 wells) in the WQD R&R (Ch. 16, Appendix A) and in the EPA Rules (wells used to inject tailings in mined out portions of subsurface mines (40 CFR 146.5(e)(8)); wells used for solution mining of conventional mines (40 CFR 146.5(c)(2)).

WQD R&R Chapter 13, Section 2(i)(iv) was struck because it refers to coal gasification, which is regulated under LQD's Coal Rules and Regulations, and these proposed rules are for LQD's Noncoal Rules and Regulations. Coal gasification will be incorporated into Chapter 18 of LQD's Coal Rules and Regulations when it is revised. (The decision was made to revise the in situ Noncoal Rules and Regulations first because there are more noncoal than coal Class III wells in Wyoming and because revising both the Coal and Noncoal Rules at the same time would result in a very large proposed rule package.)

WQD R&R Chapter 13, Section 2(i)(v) was struck because it relates to activities such as stopes leaching which, as noted in the proposed Subsection 1(c)(ii), are regulated as Class V wells.

Proposed Subsection 1(c)(iv) is also a transfer from the WQD R&R (Chapter 13, Section 1(i)(vi)). The EPA minimum regulatory requirement for such wells is Class V (40 CFR 146.5(e)(15) - however, based on the State's experience to date with such wells, the continued interest in these types of projects, and the provisions of W.S. 35-11-103(f)(v), LQD and WQD have been regulating fossil fuel recovery wells as Class III wells. In W.S. 35-11-103(f)(iv), in situ mining is defined as "a method of in-place surface mining in which limited quantities of overburden are disturbed to install a conduit or well and the mineral is mined by injection or recovering a liquid, solid, sludge or gas that causes the leaching, dissolution, gasification, liquefaction or extraction of the mineral." Therefore, LQD and WQD have been regulating fossil fuel recovery wells as Class III wells.

Proposed Subsection 1(c)(v): This is the same as WQD R&R Chapter 13, Section 2(i)(vii) which provides a framework for regulating new technologies until any specific regulatory requirements that might be needed can be determined.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 1(d) "<u>Compliance schedule</u>" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the applicable statutes and regulations.</p>	<p>40 CFR 124.2 & 40 CFR 144.3. <i>Schedule of compliance</i> means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the "appropriate Act and regulations."</p>

This term is used in discussions of permitting options required by EPA so a definition is necessary. Minor wording changes were made to the beginning and end of the definition for simplicity and so the language would be similar to other portions of the proposed rules.

PROPOSED RULE ADOPTION	EPA RULE
Chapter 11, Section 1(e) <u>"Conventional mine" means an open pit or underground excavation for the production of minerals.</u>	40 CFR 146.3. Conventional mine means an open pit or underground excavation for the production of minerals.

This term is used in the EPA definition of "Class III well" which is proposed for adoption by the LQD (Chapter 11, Section 1(c) above). Therefore, a definition of the EPA term "conventional mine" is also necessary.

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
Chapter 11, Section 1(f) <u>"Excursion" means as defined in W.S. § 35-11-103(f)(ii).</u>	W.S. § 35-11-103(f)(ii). "Excursion" means any unwanted and unauthorized movement of recovery fluid out of the production zone as a result of in situ mining activities;

The statute citation is included in the regulations for easier reference and to ensure that the definition of this frequently used term is not overlooked.

PROPOSED RULE ADOPTION	EPA RULE
Chapter 11, Section 1(g) <u>"Exempted aquifer" means an aquifer or its portion that meets the criteria in the definition of "underground source of water" but which has been exempted according to the procedures of Section 10 of this Chapter.</u>	40 CFR 144.3.... Exempted aquifer means an aquifer or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures of §144.7.

The proposed definition of "exempted aquifer" is directly from the EPA definition in 40 CFR 144.3. Section 10 on Page 76 of the proposed Chapter 11 contains the counterpart language found in 40 CFR 144.7 titled, "Identification of underground sources of drinking water and exempted aquifers". Prior to injection in Class III wells, an aquifer exemption must be received from EPA; therefore, the term "exempted aquifer" is used extensively throughout this chapter, and a definition is needed.

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
<p>Chapter 11, Section 1(h) <u>"Groundwater restoration" means as defined in W.S. § 35-11-103(f)(iii).</u></p>	<p>W.S. § 35-11-103(f)(iv). Groundwater restoration means the condition achieved when the quality of all groundwater affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology;"</p>

The statute citation is included in the regulations for easier reference and to ensure the definition of this frequently used term is not overlooked.

Chapter 11, Section 1(b)(i) "Injection well" means, for the purposes of in situ mining, a well or conduit through which recovery fluid is introduced into the subsurface. If a well is used for both injection and recovery, it is considered an injection well for the purposes of this Chapter until the operator has adequately demonstrated to the Administrator that the well has been converted to use(s), other than injection, per the requirements of Section 8 of this Chapter.

The phrase "for the purposes of in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

The last sentence has been added because of concerns related to dual purpose wells (see, e.g., the discussion of Mechanical Integrity Testing in Chapter 11, Section 7(a)(iii)). In practice, an in situ operator often needs the flexibility to use a well in a given location as either an injection or a recovery well, e.g., to switch from injection to recovery for excursion control or for more efficient movement of water during mining or restoration. However, such dual use cannot be used to simply remove a well from the UIC program; therefore, the provision has been added to allow for dual use and for 'permanent' conversion of a well once an operator no longer needs the well for injection.

Chapter 11, Section 1(i) *On next page...*

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
<p>Chapter 11, Section 1(j) <u>"In situ mining" means as defined in W.S. § 35-11-103(f)(iv).</u></p>	<p>W.S. § 35-11-103(f)(iv). "In situ mining" means method of in-place surface mining in which limited quantities of overburden are disturbed to install a conduit or well and the mineral is mined by injecting or recovering a liquid, solid, sludge, or gas that causes the leaching, dissolution, gasification, liquefaction or extraction of the mineral. In situ mining does not include the primary or enhanced recovery of naturally occurring oil and gas or any related process regulated by the Wyoming Oil and Gas Conservation Commission;</p>

The statute citation is included in the regulations for easier reference and to ensure that the definition of this frequently used term is not overlooked.

Chapter 11, Section 1(c) (k) "License area" means, with respect to an In Situ Research and Development Testing License, an area described in the license application within which all affected land and water is contained.

This definition is part of the existing Chapter 11 and helps differentiate Research and Development Testing Licenses (defined later in Section 1) from other types of licenses.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 1(l) <u>"Mechanical integrity" means, for an injection well, there is no significant leak in the casing, tubing or packer, and there is no significant fluid movement into an underground source of water through vertical channels adjacent to the injection well bore. The determination that there are no significant leaks or fluid movement is based on the results of the mechanical integrity testing required in Section 7 of this Chapter.</u></p>	<p>40 CFR 146.8 Mechanical Integrity. (a) An injection well has mechanical integrity if:</p> <ol style="list-style-type: none"> (1) There is no significant leak in the casing, tubing or packer; and (2) There is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore. [The methods which must be used to evaluate the absence of significant leaks or fluid movement are described in 40 CFR 146.8 (b) - (f).]

During an earlier review of LQD's proposed rules, EPA indicated that it was not clear in the section on the proposed mechanical integrity testing requirements (MIT) in Chapter 11 that the testing addressed both internal and external well integrity. EPA suggested use of the description in 40 CFR 146.8 to help clarify the proposed rules.

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
<p>Chapter 11, Section 1(m) <u>"Permit" means a Mining Permit, as defined in W.S. § 35-11-103(e)(xi).</u></p>	<p>W.S. § 35-11-103(e)(xi). "Mining permit" means certification by the director that the affected land described may be mined for minerals by a licensed operator in compliance with an approved mining plan and reclamation plan. No mining may be commenced or conducted on land for which there is not in effect a valid mining permit. A mining permit shall remain valid and in force from the date of its issuance until the termination of all mining and reclamation operations, except as otherwise provided in this act;</p>

The statute citation is included in the regulations for easier reference and to ensure the definition of this frequently used term is not overlooked.

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
<p>Chapter 11, Section 1(m) <u>"Production zone" means as defined in W.S. § 35-11-103(f)(v).</u></p>	<p>W.S. § 35-11-103(f)(v). "Production zone" means the geologic interval into which recovery fluids are to be injected or extracted;</p>

The statute citation is included in the regulations for easier reference and to ensure the definition of this frequently used term is not overlooked.

Chapter 11, Section 1(d)(o) "Receiving strata" means, ~~for the purposes of in situ mining,~~ the geologic units within which the production zones ~~is~~ are contained.

The phrase "for the purposes of in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

The "s" has been added to "unit" and "zone" and the verb changed because "strata" is plural and production zones may be present in more than one stratum in a given area.

Chapter 11, Section 1(p) *On next page...*

PROPOSED RULE AMENDMENT	REFERENCED WYOMING STATUTE
<p>Chapter 11, Section 1(p) <u>"Recovery fluid" means as defined in W.S. § 35-11-103(f)(vii).</u></p>	<p>W.S. § 35-11-103(f)(vii) "Recovery fluid" means any material which flows or moves, whether semi-solid, liquid, sludge, gas or other form or state, used to dissolve, leach, gasify or extract a mineral;</p>

The statute citation is included in the regulations for easier reference and to ensure the definition of this frequently used term is not overlooked.

Chapter 11, Section 1(e) (g) "Recovery well" means, for the purposes of in situ mining; a well or conduit through which a recovery fluid, mineral, or product is produced from the subsurface. If a well is used for both injection and recovery, it is considered an injection well for the purposes of this Chapter until the operator has adequately demonstrated to the Administrator that the well has been converted to use(s), other than injection, per the requirements of Section 8 of this Chapter.

The phrase "for the purposes of in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

The last sentence has been added because of concerns related to dual purpose wells (see, e.g., the discussion of Mechanical Integrity Testing in Chapter 11, Section 7(a)(iii)). In practice, an in situ operator often needs the flexibility to use a well in a given location as either an injection or a recovery well, e.g., to switch from injection to recovery for excursion control or for more efficient movement of water during mining or restoration. However, such dual use cannot be used to simply remove a well from the UIC program; therefore, the provision has been added to allow for dual use and for 'permanent' conversion of a well once an operator no longer needs the well for injection.

Chapter 11 Section 1(r) "Research and Development Testing License" means the permitting vehicle issued by the Administrator, per W.S. § 35-11-431 et seq., approving research and development testing as defined in W.S. § 35-11-103 (f)(viii).

This definition is proposed to help differentiate the type of license defined in W.S. § 35-11-103(f)(viii) and other types of licenses, such as a "license to mine for minerals" defined in W.S. § 35-11-103(e)(xiii). The definition of "Research and development testing" in the statutes (W.S. § 35-11-103(f)(viii)) is:

"[C]onducting research and development activities to indicate mineability or workability of and develop reclamation techniques for an in situ operation;"

Chapter 11, Section 1(s) "State Decision Document" serves as a summary of, or reference to, all terms and conditions within an approved in situ mining permit application, an approved Research and Development Testing License application, or an approved application to revise a permit or Research and Development Testing License. This document is compiled by the Administrator and provides a summary of, or reference to, all UIC related terms and conditions, compliance provisions, and monitoring requirements included in the permit or Research and Development Testing License.

EPA requires that documents be available which EPA includes in their Draft Permits and Fact Sheets. Because of the difference in permitting approaches between EPA and LQD, the permit application a Wyoming operator prepares includes much of the information that EPA includes in the Draft Permits and Fact Sheets which EPA prepares. However, the LQD does prepare a document that provides an overview of the critical items in the permit application and the basis for the LQD's decision and cross-references the location of critical information in the permit application. Within LQD, such documents have historically been referred to as "State Decision Documents" (SDDs). This definition is included to formalize use of that phrase. A sample Table of Contents for an SDD is included in Attachment C of this proposed rules package.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 1(t) <u>"Stratum (plural strata)" means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.</u></p>	<p>40 CFR 146.3. Stratum (plural strata) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.</p>

This term is used in some of the EPA Rules proposed for adoption, so a definition was needed.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 1(u) <u>"UIC" means the Underground Injection Control program under Part C of the Safe Drinking Water Act, including an "approved State program."</u></p>	<p>40 CFR 146.3. UIC means the Underground Injection Control program under Part C of the Safe Drinking Water Act, including an "approved [State] program."</p>

This acronym is commonly used in portions of the EPA Rules proposed for adoption; therefore, a definition was needed.

Chapter 11, Section 1(v) "Underground Source of Water" (USW) means those aquifers or portions thereof which have a total dissolved solids content of less than 10,000 milligrams per liter (mg/l) or those that have been classified as a "known source of supply" pursuant to Chapter 8, Section 4(c), Quality Standards for Wyoming Groundwaters, Water Quality Division Rules and Regulations (as amended March 12, 1993).

The proposed definition is designed to take into account provisions in the EPA definition of USDW (40 CFR 144.3 and 146.3) and in the Wyoming Department of Environmental Quality, Water Quality Division (WQD) groundwater classification system. Both the EPA and WQD classification systems recognize water use and ambient water quality; however, the WQD system is more applicable in rural settings. In comparison of the EPA and WQD provisions, both provide protection for waters with TDS concentrations less than 10,000 mg/l; therefore, this provision is included in the proposed definition. The WQD classification system also protects existing uses or supplies, regardless ambient water quality, the size of the water system (e.g., the source supplying a windmill on a stock tank is protected), and whether the system serves humans, livestock, or industry; therefore, this provision is also included in the proposed definition.

The EPA definition of a USDW is "an aquifer or its portion:

- (a)(1) Which supplies any public water system; or*
- (2) Which contains a sufficient quantity of ground water to supply a public water system; and*
 - (i) Currently supplies drinking water for human consumption; or*
 - (ii) Contains fewer than 10,000 mg/l total dissolved solids; and*
- (b) Which is not an exempted aquifer.*

The WQD groundwater classification system is based on use and ambient water quality and is intended to provide protection for all uses for which the water is suitable (WQD Rules, Chapter 8, Section 3(c)). The classes in Chapter 8, Section 4(c) of the WQD Rules include:

- Class I - Domestic;*
- Class II - Agricultural;*
- Class III - Livestock (& Wildlife);*
- Class Special (A) - Fish & Aquatic Life; and*
- Class IV(A)&(B) - Industrial.*

Chapter 8, Section 4(c) of the WQD Rules and Regulations is a partial basis for making the determination whether an aquifer constitutes an "underground source of drinking water." However, this section is too lengthy to be directly incorporated into this proposed Chapter, therefore the rules are being cross-referenced.

Chapter 11, Section 1(w) "Upper Control Limit" (UCL) means a value greater than the maximum value of a chemical or physical parameter that can be attributed to natural fluctuations and analytical variability. UCL parameters and amounts are determined statistically from the baseline sampling and agreed upon by the Administrator and the operator prior to initiation of mining. UCLs are used to determine when there is movement of recovery fluid out of authorized areas or unapproved changes to a chemical or physical parameter. For certain parameters, such as pH, a UCL may be defined as an acceptable range of values.

A formal definition of "Upper Control Limit" is proposed because it is a term commonly used by industry and LQD to differentiate between recovery fluid and natural fluids (generally groundwater). The term is equivalent to the Nuclear Regulatory Commission term "Action Limit," but the EPA UIC program has no equivalent term. The text of the definition is adapted from the LQD In Situ Guideline (Guideline 4).

Both "chemical" and "physical" parameters are included in the definition because excursion detection methods differ depending on the mineral. For example, FMC Trona Mining Co. noted during the November 1998 EQC hearing that the trona mines may rely on pressure changes to detect excursions as soon as possible - trona is mined from dry evaporite deposits so chemical analyses of groundwater samples are not possible unless an excursion has resulted in significant loss of fluid.

A request was also put forward by the Wyoming Mining Association during the November 1998 EQC hearing to change the phrase "out of authorized areas" to "out of the authorized production zone." As with excursion detection methods, the type of "production zone" may vary with mining method and mineral. Therefore, the phrase "out of authorized areas" is intentionally broad to ensure that both a variety of physical situations (e.g., detection of pressure changes) and the wording of the EPA regulations (e.g., 40 CFR.146.32(e)) "...detect any excursion...outside the "mining area or zone....") can be addressed with one definition.

Chapter 11, Section 1(f) (x) *On next page.....*

Chapter 11, Section 1(f) (x) "Uses for which the water was suitable" means, ~~with respect to in situ mining,~~ those uses of the premining groundwater which are or could have reasonably been developed considering established water quality standards and the premining groundwater quality conditions. Such uses shall include, but are not limited to, municipal and domestic drinking water, industrial, agricultural and wildlife uses.

The phrase "with respect to in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include this phrase.

Chapter 11, Section 1(g)(v) "Well field area" means, ~~for the purposes of in situ mining,~~ the surface area containing overlying the injection and recovery wells zones. This area may be all or a portion of the entire area proposed for the injection and production of recovery fluid throughout the life of the mine.

The phrase "for the purposes of in situ mining" has been deleted from both (v) and (w). Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

The injection and recovery zones are in the subsurface; therefore, the phrase "surface area containing the injection and recovery zones" was contradictory and has been replaced with "surface area overlying the injection and recovery zones."

The authority to amend and adopt these definitions is provided by W.S. §§ 35-11-102, 35-11-103, 35-11-112(a)(i), 35-11-405(a), 35-11-426, 35-11-427, 35-11-429, 35-11-431, and 35-11-803.

7. Proposed Rule Amendment/Adoption: Chapter 11, Section 2

Section 2. General Requirements.

Chapter 11, Section 2(a) In addition to the requirements of this Chapter, ~~Chapter 1, Chapter 2, Section 1, Section 2(a)(i)(A) and (J) and Section 2(b)(iii)(E), Chapter 3, Section 2 (excepting Subsections (b)(ii) and (iii), (c)(iv), (h) and with respect to (k)(i), reclamation shall be completed with two years following ground water restoration), and Chapter 7 shall apply to in situ mining or Research and Development Testing License operations.~~

For clarity, the present version of Section 2(a), which lists several applicable regulations, has been divided among Sections 2, 3, 4, and 5 in the proposed regulations.

As in Proposed Rule Amendment #1, several of the proposed changes in this section are simply to add the term "Research and Development Testing License" or otherwise indicate that licenses can be revised.

Chapter 11, Section 2(a-cont.)(b) Applicable sections of Chapter 8 ~~and 9~~ of the Water Quality Division Rules and Regulations (as amended March 12, 1993) regarding groundwater use classification, quality standards, and testing procedures and applicable Maximum Contaminant Levels from the U.S. Environmental Protection Agency Rules (40 CFR 141 as amended July 1, 2001) shall also apply to in situ mining or Research and Development Testing License operations.

The present version of Section 2(a) states that "applicable sections" of the Water Quality Division (WQD) Chapter 8 regulations apply to in situ applications. However, for clarity, text generally outlining the topics in Chapter 8 that apply, has been added.

The present regulations also indicate that Chapter 9 of the WQD regulations apply. However, the proposed LQD Chapter 11 is intended to replace the WQD Chapter 9 regulations; therefore, the reference to Chapter 9 is no longer needed.

The EPA relies on comparison of water quality concentrations with Maximum Concentration Limits (MCLs) to determine if water movement is impacting an Underground Source of Drinking Water (see the Statement of Reasons for Section 1(v) of this Chapter for the definition of Underground Source of Drinking Water). In some instances, the MCLs are more stringent than the water quality standards in Chapter 8 of the WQD Rules and Regulations. Therefore, to be as effective as the federal rules, the proposed LQD rule includes reference to the EPA rules. Additional information on the applicability of the EPA standards is provided in the Statement of Reasons for the proposed Section 12(d) of this Chapter.

Chapter 11, Section 2(b)(c) No in situ mining operation shall commence or be conducted unless a valid mining permit or Research and Development Testing License has been issued to the operator from the Department. Applications for an ~~In Situ Mining~~ permit or Research and Development Testing License shall be filed with the Administrator of the ~~Land Quality Division~~. The applicant shall file ~~six (6)~~ three copies of the application, and the Administrator of the ~~Land Quality Division~~ shall forward ~~three (3)~~ copies for filing with the ~~Administrator of the Water Quality Division~~; one copy of the application to the EPA when the application is determined complete. Applications shall be in a format required by the ~~Department~~ Administrator.

The terms "operation"; "mining" and "In Situ Mining" have been deleted because they are redundant.

Under the joint agreement of May 1996 between LQD and WQD, LQD has assumed the UIC permitting functions for in situ mining (Class III wells). Therefore, it is not necessary to differentiate the Administrators. Also, WQD review copies will not be needed, and LQD will forward the appropriate application copy to EPA.

Chapter 11, Section 2(c)(d) The ~~Administrator Land Quality Division and Water Quality Division~~ shall review the ~~insitu mining permit or Research and Development Testing License~~ application and determine its suitability for publication in accordance with W.S. § 35-11-406. A ~~single permit or Research and Development Testing License~~ shall be issued by the Director upon the recommendations of the Administrator, ~~s of the Land Quality Division and Water Quality Division~~. A single license shall be issued by the Administrator of the ~~Land Quality Division upon concurrent approval of the Administrator of the Water Quality Division~~.

As noted above, LQD has assumed the UIC permitting functions for in situ mining (Class III wells); therefore, it is not necessary to differentiate the duties of LQD and WQD.

Chapter 11, Section 2(d)(e) Operators having an ~~insitu mining permit or Research and Development Testing License~~ issued before the effective date of these regulations; shall ~~by no later than May 25, 1980~~ within one year of the effective date of newly promulgated changes to this Chapter, present evidence demonstrating compliance with the requirements of ~~W.S. § 35-11-426 through W.S. § 35-11-436~~ these regulations. The Administrator shall review such evidence and shall advise the operator in writing of such additional information or procedures necessary to satisfy the provisions of this Chapter and ~~W.S. § 35-11-426 through W.S. § 35-11-436~~. The evidence must be presented:

(i) By those operators, who are mining, restoring, or reclaiming, within one year of the effective date of newly promulgated changes to this Chapter; or

(ii) By those operators, who have received a permit but have not yet started mining, before mining begins, but no later than one year after the effective date of the newly promulgated changes to this Chapter.

The proposed changes to Section 2(d) are to ensure that all existing operators are in compliance with the proposed UIC regulations within a reasonable time after adoption. Because the EPA has modified their rules several times since the present rules were adopted, operators with existing permits or licenses must demonstrate that the permit or license meets federal stringency requirements set forth in the proposed regulations. 40 CFR 144.39(a)(3) states that the promulgation of new or revised regulations may be cause for revocation or modification of a permit or license. It is therefore in the State and industry's best interest to show that all permits and licenses comply with new or revised regulations.

The two proposed time frames reflect conditions within the State. If updates are needed for a permit or license for an on-going operation, then, that permit or license needs to be revised to comply with the new regulations within one year of any changes to this Chapter of the regulations. However, on more than one occasion (primarily due to uranium prices), an operator has obtained a permit or license but not immediately started operations after obtaining the permit or license. If updates are needed for a permit or license for an operation that has not yet started, then the permit or license needs to be revised before the operations start, but the updates cannot be postponed indefinitely. The LQD does not consider it prudent for an operator to begin operations knowing that the permit or license is already out-of-date, nor does the LQD consider it prudent to delay updates for more than a year.

It should be noted that the one-year grace period for permit or license updates is based on practical considerations and on the EPA requirements for compliance schedules, which the EPA can impose for permit updates (40 CFR 144.53(a)(2)(i) - the longest interim allowed in a compliance schedule in one year). Rather than going through the process for imposing a compliance schedule on each permit, the LQD has simply incorporated a grace period into the regulations. In addition, although a compliance schedule can be developed for up to three years, the LQD does not consider it prudent to delay permit or license updates in response to regulation changes for that long a time.

The text of Section 2(e) has been relocated to proposed Section 12 of this Chapter.

Chapter 11, Section 2(f) ~~All wells and drill holes resulting from in situ mining operations shall be abandoned in accordance with Chapter 14 of these regulations and W.S. § 35-11-404.~~

The requirements for well and drill hole abandonment are discussed in Chapter 11, Section 8 (Drill Hole and Well Repair, Plugging, and Conversion Requirements), which begins on Page 66.

Chapter 11, Section 2(f) The operator shall allow the Administrator, or an authorized representative of the Division, to enter and inspect any property as provided by W.S. §§ 35-11-109(a)(iv), (v) and (vi).

Inspection and entry are required by the EPA (40 CFR 144.51(i)) and by the State of Wyoming. The proposed rule provides a reference to the appropriate state statute, and the following provides a comparison of that statute and the EPA rule.

WYOMING STATUTE	EPA RULE
<p>W.S. § 35-11-109 Powers and duties of the director.</p> <p><i>(a) In addition to any other powers and duties imposed by law, the director of the department shall:...</i></p> <p><i>(iv) Conduct, encourage, request and participate in, studies, surveys, investigations, research, experiments, training and demonstrations by contract, grant or otherwise; prepare and require permittees to prepare reports and install, use and maintain any monitoring equipment or methods reasonably necessary for compliance with the provisions of this act; and collect information and disseminate to the public such information as is deemed reasonable and necessary for the proper enforcement of this act;</i></p> <p><i>(v) Conduct programs of continuing surveillance and of a regular periodic inspection of all actual or potential sources of pollution and of public water supplies with the assistance of the administrators;</i></p> <p><i>(vi) Designate authorized officers, employees or representatives of the department to enter and inspect any property, premise or place, except private residences, on or at which an air, water or land pollution source is located or is being constructed or installed, or any premises in which any records required to be maintained by a surface coal mining permittee are located. Persons so designated may inspect and copy any records during</i></p>	<p>40 CFR 144.51(i). <i>Inspection and entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:</i></p> <p><i>(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;</i></p> <p><i>(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;</i></p> <p><i>(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and</i></p> <p><i>(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.</i></p>

WYOMING STATUTE	EPA RULE
<p><i>normal office hours, and inspect any monitoring equipment or method of operation required to be maintained pursuant to this act at any reasonable time upon presentation of appropriate credentials, and without delay, for the purpose of investigating actual or potential sources of air, water or land pollution and for determining compliance or noncompliance with this act, and any rules, regulations, standards, permits or orders promulgated hereunder....The owner, occupant or operator shall receive a duplicate copy of all reports made as a result of such inspections within thirty (30) days. The department shall reimburse any operator for the reasonable costs incurred in producing copies of the records requested by the department under this section;...</i></p>	

Chapter 11, Section 2(g) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 2(g)</u> All applications shall be signed by a responsible corporate officer. All reports required by permits (including Annual Reports, Quarterly Monitoring Reports, and reports related to excursion monitoring and control) or other information required by the Administrator which pertain to Class III injection wells shall be signed by a responsible corporate officer or duly authorized representative. Any responsible corporate officer or duly authorized representative signing a document under this Section shall make the following certification:</p> <p><u>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.</u></p> <p>(i) "Responsible corporate officer" means:</p> <p>(A) <u>A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs policy or decision-making functions for the corporation, or</u></p> <p>(B) <u>The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures, or</u></p> <p>(C) <u>In the case of a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or</u></p> <p>(D) <u>For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For</u></p>	<p>40 CFR 144.32 Signatories to permit applications and reports.</p> <p>(a) Applications. All permit applications...shall be signed as follows:</p> <p>(1) For a corporation: by a responsible corporate officer.</p> <p>(b) Reports. All reports required by permits, other information requested by the Director, and all permit applications submitted for Class II wells under § 144.31 shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person.</p> <p>(d) Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:</p> <p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p>(1) cont. For the purpose of this section, a responsible corporate officer means:</p> <p>(i) A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs policy- or decision-making functions for the corporation, or</p> <p>(ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures....</p> <p>(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or</p> <p>(3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>purposes of this section, a principal executive officer of a Federal agency includes:</u></p> <p><u>(I) The chief executive officer of the agency, or</u></p> <p><u>(II) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).</u></p> <p><u>(ii) "Duly authorized representative" means a person who is authorized to sign a document to be submitted to the Land Quality Division as part of the official record regarding an in situ mining permit or Research and Development Testing License. A person shall qualify for this title only if:</u></p> <p><u>(A) The authorization is made in writing by a responsible corporate officer;</u></p> <p><u>(B) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and</u></p> <p><u>(C) The written authorization is submitted to the Director.</u></p> <p><u>(iii) If the responsible corporate officer or duly authorized representative is no longer correctly listed with the Administrator, a new name must be submitted, with required written authorization as required by Sections 2(g)(i)(A) and (C) of this Chapter, to the Administrator prior to or with any reports, information, or applications to be signed by that individual.</u></p>	<p>executive officer of a Federal agency includes:</p> <p>(i) The chief executive officer of the agency, or</p> <p>(ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).</p> <p>(b) cont. A person is a duly authorized representative only if:</p> <p>(1) The authorization is made in writing by a person described in paragraph (a) of this section;</p> <p>(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and</p> <p>(3) The written authorization is submitted to the Director.</p> <p>(c) Changes to authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.</p>

The order of the requirements in the EPA rules has been changed in the proposed LQD rules simply to combine the discussion of "applications" and "reports."

During the November 1998 EQC hearing, Rio Algom Mining Co. proposed modifying the definition of "responsible corporate officer" to include "duly authorized representative." To help clarify all the signature requirements, including the definition of "responsible corporate officer," the proposed rules now mimic the EPA rules more closely by moving

definitions of terms related solely to the signature requirements, such as "responsible corporate officer" from Chapter 11, Section 1 to Chapter 11, Section 2.

Since the WDEQ obtained primacy for the UIC program for Class III wells in the 1980s, much of the proposed language has been included as one of the standard conditions on the Form 1-UIC of the permit application because there was no state rule incorporating the EPA requirements. Upon approval of the proposed rule, it should be possible to remove this standard condition.

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-401(f)(iv), 35-11-402(a)(i)&(xiii), 35-11-426, 35-11-429, and 35-11-431(a)(vii).

8. Proposed Rule Amendment: Chapter 11, Section 3

Section 3. ~~Permit Applications~~ Application Content Requirements - Adjudication and Baseline Information.

Section 3 in the existing rules has been separated in the proposed rules into Section 3 (Adjudication and Baseline Information), Section 4 (Mine (Operations) Plan), and Section 5 (Reclamation Plan). Most of the proposed Section 3 is from the existing Section 3(b).

~~All applications for an in situ mining permit shall contain:~~

The introductory phrase is no longer necessary due to the change in the section title and the following change.

Chapter 11, Section 2(a)3(a) All applications for a permit shall include, at a minimum, the information and materials required pursuant to W.S. § 35-11-406(a)(i) through (vi), (viii) through (xiii) and (xv) and W.S. § 35-11-406(b)(x) through (xii) related to adjudication and baseline information required in: W.S. § 35-11-428; Chapter 1 and Chapter 2, Sections 1 and 2(a)(i)(A) and (J) of these rules and regulations; and:

The list of cross-references to chapters and sections ("Chapter 1, Chapter 2, Sections 1...") was brought forward from the existing rule at Chapter 11, Section 2(a) and has not been underlined because these cross-references are not new proposed language.

The statute citations in the existing Section 3(c) have been consolidated as a single reference to W.S. § 35-11-428 in the proposed rules because W.S. § 35-11-428 cross-references all the portions of W.S. § 35-11-406 listed in the existing Section 3(c).

The reference to W.S. § 35-11-428 is included in the proposed Sections 3(a), 4(a), and 5(a) because it relates to material applicable to all portions of a permit application.

The phrase "at a minimum" has been included to allow additional information to be included in the permit or license to address unanticipated circumstances (per W.S. § 35-11-406(a)(xv)).

Chapter 11, Section 3(a)(i) On next page.....

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 3(a)(i) <u>A description of the activities conducted by the applicant for which permits are required under: the Resource Conservation and Recovery Act (RCRA), the Underground Injection Control program of the Safe Drinking Water Act; the National Pollution Discharge Elimination System (NPDES) program of the Clean Water Act; and the Prevention of Significant Deterioration program of the Clean Air Act.</u></p>	<p>40 CFR 144.31(e)(1) <i>Information requirements.</i> The activities conducted by the applicant which require it to obtain permits under RCRA, UIC, the National Pollution Discharge Elimination system (NPDES) program under the Clean Water Act, or the Prevention of Significant Deterioration (PSD) program under the Clean Air Act.</p>

The information required in this EPA section (40 CFR 144.31) can be considered the "introductory" information, e.g., operator name, address, and so forth.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 3(a)(ii) <u>A listing of all permits or construction approvals received or applied for in association with the in situ permit area under the following programs:</u></p> <p>(A) <u>Hazardous Waste Management program under RCRA;</u></p> <p>(B) <u>UIC program under the Safe Drinking Water Act (as it pertains to wells other than Class III wells);</u></p> <p>(C) <u>NPDES program under the Clean Water Act (CWA);</u></p> <p>(D) <u>Prevention of Significant Deterioration (PSD) program under the Clean Air Act (CAA);</u></p> <p>(E) <u>Nonattainment program under the CAA;</u></p> <p>(F) <u>National Emission Standards for Hazardous Pollutants preconstruction approval under the CAA;</u></p> <p>(G) <u>Dredge and fill permits under Section 404 of the CWA;</u></p> <p>(H) <u>U.S. Nuclear Regulatory Commission Source Material License; or</u></p> <p>(I) <u>Other relevant environmental permits, including State permits.</u></p>	<p>40 CFR 144.31(e)(6). A listing of all permits or construction approvals received or applied for under any of the following programs:</p> <p>(i) Hazardous Waste Management program under RCRA.</p> <p>(ii) UIC program under SDWA.</p> <p>(iii) NPDES program under CWA.</p> <p>(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.</p> <p>(v) Nonattainment program under the Clean Air Act.</p> <p>(vi) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.</p> <p>(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.</p> <p>(viii) Dredge and fill permits under section 404 of CWA.</p> <p>(ix) Other relevant environmental permits, including State permits.</p>

The above rules are proposed for adoption to coincide with a required counterpart EPA rule.

The phrase "in association with the in situ permit area" has been added to subparagraph 3(a)(ii) in response to a request made by the FMC Corporation in conjunction with the November 1998 EQC hearing. They asked that this clarification be added so that it is clear that the listing of these permits is limited to the in situ permit area, not all the permits an operator might have in the State.

The phrase "as it pertains to wells other than Class III wells" was also added in response to another concern expressed by the FMC Corporation in conjunction with the November 1998 EQC hearing. They were concerned that it still sounded as though an in situ operator had to obtain permits from both WQD and LQD for Class III wells. The phrase is intended to clarify that a permit for Class III wells needs to list UIC permits for other classes of wells associated with the in situ operation.

One provision (Section 3(a)(iv)(H)) has been added that is not contained in the EPA rule. The NRC requires a Source Materials License for all in situ uranium operators, so that license has been included in the listing..

Chapter 11, Section 3(b) ~~A description of the land, geology and groundwater hydrology consistent with the extent and nature of the proposed surface disturbance and applicable in situ technology including:~~

(i) ~~The past, present, and proposed postreclamation use of the land, groundwater and surface water;~~

This section was deleted because it repeats the requirements of W.S. § 35-11-428 (now cross-referenced in Subsection 3(a) above), and the necessary details on these topics are listed in the following sections.

Chapter 11, Section 3(b)(ii)(a)(iii) A soil survey which maps and describes the general distribution of the soils within the permit area. A detailed soil survey and associated laboratory analysis may be required for soils on the affected lands.

Chapter 11, Section 3(b)(iii)(a)(iv) A description of the nature and depth of the topsoil that will be removed from proposed affected land prior to disturbance by mining activities.

Chapter 11, Section 3(b)(iv)(a)(v) A survey of vegetative cover, productivity and species diversity on the proposed affected land determined by scientifically acceptable sampling procedures. Vegetation productivity sampling may be required, at the Administrator's discretion, depending on the nature of the communities to be disturbed. However, if existing data from other sources, such as National Resources Conservation Service publications or adjacent permit areas, can be provided and demonstrated to be applicable to the communities in question, the collection of production data may be waived.

This section was modified to reflect the language in LQD's Guideline 4 (In Situ Mining).

The phrase "such as" which precedes the "National Resources Conservation Service" was added in response to a comment made by an EQC member at the November 1998 hearing. The member suggested that it be made clear that the two options provided in the rule for obtaining production data are not necessarily the only sources accepted by the LQD.

Chapter 11, Section 3(b)(v)(a)(vi) A list of the indigenous vertebrate species by common and scientific names observed within the proposed permit area. ~~Habitats for endangered species and important habitats and migration routes shall be identified and described.~~ Surface waters supporting fish that may be affected by the operation shall be sampled for benthic invertebrates and periphytons. As required in Chapter 2, Section 1(f), the applicant shall consult with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service prior to submission of a permit application to determine permitting requirements.

The cross-reference to Chapter 2 is included for easier reference and to ensure that the need for interagency communication during permitting is not overlooked. Chapter 2, Section 1(f) contains the following language:

The applicant shall consult with both the Wyoming Game and Fish Department and the U. S. Fish and Wildlife Service prior to submission of the permit application. The Administrator shall also consult with both wildlife agencies during permit application review. The Administrator shall review recommendations from the wildlife agencies and may reject recommendations that are outside the scope of the Act. Those recommendations accepted by the Administrator shall be presented to the applicant for their review and comment. Those recommended mitigation plans from the wildlife agencies resulting from review and comment and accepted by the Administrator shall be incorporated into the permit application.

Chapter 11, Section 3(b)(vi)(a)(vii) A description of climatic conditions of the site in accordance with the requirements of Chapter 2, Section 2(a)(i)(C) and (D), ~~Chapter 2 of these regulations.~~

The phrase "Chapter 2" was put before the phrase "Section 2" and the phrase "of these regulations" was deleted to make the reference consistent with other references in this Chapter.

PROPOSED RULE AMENDMENT	EPA RULE
<p>Chapter 11, Section 3(b)(a)(viii) A description of the geology, including: (A) <u>Discussion, supported by maps, cross-sections and supporting geologist's, driller's, and geophysical logs, which identifies: formations and aquifers; geologic features that could influence aquifer properties; and the areal and stratigraphic position of the production zone in relation to other geologic features within the proposed permit or Research and Development Testing License area; and</u> (B) <u>A generalized map and cross-sections illustrating the regional geologic setting.</u></p>	<p>40 CFR 146.34(a)(6). Generalized map and cross sections illustrating the regional geologic setting;</p>

The terms "geologist" and "drillers" were changed to the possessive case for grammatical reasons.

The underlined language is being added to incorporate the specific EPA requirement into the existing, broader LQD rule.

Chapter 11, Section 3(b)(a)(ix) *On next page...*

PROPOSED RULE AMENDMENT	WYOMING STATUTE & EPA RULE
<p>Chapter 11, Section 3(b)(a)(ix) A</p> <p><u>geochemical, lithological, and mineralogical</u> description of the receiving strata and any aquifers that may be affected by the injection of recovery fluid.</p>	<p>W.S. § 35-11-428(a)(ii)(A). A description of the general geology including geochemistry and <i>lithology</i> of the permit area; <i>(emphasis added)</i></p> <p>40 CFR 144.7(c)(1). ...Information contained in the mining plan for the proposed project, such as...general information on the <i>mineralogy</i> and geochemistry of the mining zone...shall be considered by the Director....<i>(emphasis added)</i></p>

The purpose of this amendment is to combine related geologic requirements from a variety of locations for easier reference and ensure the LQD rules include EPA requirements.

Chapter 11, Section 3(b)**(vii)(a)(x)** For surface waters within the permit area and on adjacent lands:

(A) The names, descriptions, and a map of all such surface waters; and within the permit area and on adjacent lands:

(B) A list and mapping of all adjudicated and permitted surface water and groundwater rights within the permit area and adjacent to the permit area shall be provided.

This section was separated into two subsections to emphasize that both hydrologic information about surface waters and adjudication information about surface water rights is needed in the permit application. The reference to "groundwater rights" has been moved to the next section. The phrase "within the permit area and on adjacent lands" was moved to the beginning of the section for clarity.

An "s" was added to "name" and "description" for grammatical reasons.

The word "mapping" was changed to "map" for clarity.

Chapter 11, Section 3(b)(x)(a)(xi) For groundwaters within the permit area and on adjacent lands:

~~(A) Locations and present owners~~ The names (or numbers), descriptions, and a map of all water wells installed for water supply or monitoring in-use and all wells which penetrate the injection zone, within the permit area and on adjacent lands, including a The description shall include: of names of present owners, well completion data, producing interval(s), and variations in water level to the extent such information is available in the public records and from a reasonable inspection of the property. ~~The Administrator shall require a mapping of all wells within and adjacent to the permit area.~~

Chapter 11, Section 3(b)(vii)(B) A list and mapping of all adjudicated and permitted surface water and groundwater rights within the permit area and adjacent to the permit area shall be provided.

This section was separated into two subsections to emphasize that both information about wells and information about groundwater rights is needed in the permit application. The phrase "within the permit area and on adjacent lands" was moved to the beginning of the section for clarity.

The first subsection has been revised: to avoid the unnecessary difficulty of defining "in use" (e.g., periodic or seasonal use of wells in rural areas) and to ensure that the regulations reflect the requirements of the EPA and the Wyoming Statutes, which do not limit well information to only those wells "in use" or used solely for supply:

40 CFR 144.55 requires that applicants "identify the location of all known wells which...penetrate the injection zone" to ensure that any improperly sealed or completed wells are repaired. (See Chapter 11, Section 4 for repair requirements).

W.S. § 35-11-406(a)(vii)&(ix) require, respectively:

"A general description of the land which shall include...adjudicated water rights...and any subsurface waters..." and

"A map based upon public records showing...the location and names, where known, of all...water wells...."

Chapter 11, Section 3(b)(xi)(a)(xii) A ~~tabulation~~ list and map of all abandoned wells and drill holes, giving location, depth, producing interval(s), type of use, condition of casing, plugging procedures and date of completion for each well or drill hole within the permit area and on adjacent lands to the extent such information is available in public records and from a reasonable inspection of the property.

As noted in the previous subsection, 40 CFR 144.55 requires that applicants "identify the location of all known wells which...penetrate the injection zone," in part to ensure

that any improperly abandoned wells are repaired. (See Chapter 11, Section 4) for repair requirements).

The term "tabulation" has been changed to "list" for continuity with previous subsections.

A map of the abandoned wells and drill holes is necessary to more easily evaluate the proximity of abandoned wells and drill holes to areas proposed for in situ mining.

Chapter 11, Section 3(b)(xii)(a)(xiii) A groundwater potentiometric surface contour map for each aquifer that may be affected by the mining process, including overlying and underlying aquifers in which monitoring wells are installed.

Specific reference to overlying and underlying aquifers was added at the end of this section for clarity.

PROPOSED RULE AMENDMENT	EPA RULE
<p>Chapter 11, Section 3(b)(xiii)(a)(xiv) Aquifer characteristics for the water saturated portions of the receiving strata and aquifers which may be affected by the mining process, which may include, but is not limited to, aquifer thickness, velocity and direction of groundwater movement, storage coefficients or specific yields, transmissivity or hydraulic conductivity and the direction(s) of preferred flow under hydraulic stress in the saturated zones of the receiving strata. The extent of hydraulic connection between the receiving strata and overlying and underlying aquifers, and the hydraulic characteristics of any influencing boundaries in or near the proposed well field area(s) shall be determined and described. <u>Information needed to meet the requirements of Section 6(d) of this Chapter shall also be provided.</u></p>	<p>146.34(a)(8) Proposed formation testing program to obtain the information required by §146.32(c).</p>

The underlined language is being added to coincide with the EPA requirements. Proposed Section 6(d) coincides with 40 CFR 146.32(c).

Chapter 11, Section 3(b)(xiv)(a)(xv) Tabulated water quality analyses for samples collected from all groundwaters which may be affected by the proposed operation. Sampling to characterize the premining groundwater quality and its variability shall be conducted in accordance with established Department guidelines.

The authority to amend these rules is provided by W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-405(a), 35-11-426(a), 35-11-427, 35-11-428, and 35-11-803(a).

9. Proposed Rule Amendment/Adoption: Chapter 11, Section 4

Section 3 4. Permit Applications Content Requirements - Mine (Operations) Plan

Section 3 in the existing rules has been separated in the proposed rules into Section 3 (Adjudication and Baseline Information), Section 4 (Mine (Operations) Plan), and Section 5 (Reclamation Plan). Most of the proposed Section 4 is from the existing Section 3(c), although the order of the subsections has been changed and some subsections have been moved to more appropriate sections. The Annual Report requirements, which are in the existing Section 4, have been moved to the proposed Section 17.

Chapter 11, Section 2(a) and 3(c) 4(a) ~~A mining plan containing all information required by W.S. § 35-11-406(b)(viii), (xiii), (xiv), and (xvi) and consistent with the applicable in situ technology. In addition to the requirements of this Chapter All applications for a permit shall include, at a minimum, the information and materials related to mine plans required in: W.S. §§ 35-11-428 and 429; Chapter 1, Chapter 2, Section 1, Section 2(a)(i)(A) and (F) and Section 2(b)(iii)(E); and Chapter 3, Section 2 (excepting Subsections (b)(ii) and (iii), (c)(iv), and (h) and, with respect to subsection (k)(i), reclamation shall be completed within two years following groundwater restoration as modified in Section 5(a)(iv) of this Chapter); and~~

The list of cross-references to chapters and sections ("Chapter 1, Chapter 2, Sections 1...") was brought forward from the existing rule at Chapter 11, Section 2(a) and has not been underlined because these cross-references are not new proposed language.

The statute citations in the existing Section 3(c) have been consolidated as a single reference to W.S. § 35-11-428 in the proposed rules because W.S. § 35-11-428 cross-references all the portions of W.S. § 35-11-406 listed in the existing Section 3(c). Reference to W.S. § 35-11-429, which also includes requirements for permit content, has been added to ensure the requirements of this statute section are not overlooked.

The reference to W.S. § 35-11-428 is included in the proposed Sections 3(a), 4(a), and 5(a) because it relates to material applicable to all portions of a permit application. Similarly, the reference to W.S. § 35-11-429 is included in the proposed Sections 4(a) and 5(a) because it relates to material applicable to those two portions of a permit application.

The phrase "at a minimum" has been included to allow additional information to be included in the permit or license to address unanticipated circumstances (per W.S. § 35-11-406(a)(xv)).

The proposed phrase "as modified in Section 5(a)(iv) of this Chapter)" cross-references the subsection to which the existing phrase "reclamation shall be completed within two

years following groundwater restoration" has been moved. Because the existing phrase has also been modified, it was considered more readable if it were moved and modified than trying to modify it as a long phrase on the end of Sections 4(a) and 5(a).

<p>Chapter 11, Section (3)(c)(ii) 4(a)(i) Contour <u>(topographic)</u> map(s) which accurately locate and identify the permit area and show the location of any public highways, dwellings, utilities and easements within the permit area and adjacent lands in relation to all proposed affected lands and proposed activities associated with the operation including, but not limited to: plant site, chemical storage areas, wellfield areas, monitor wells, roads, temporary and permanent drainage diversions, impoundments, stockpiles for topsoil, ore product and waste, and all processing facilities. <u>The map(s) shall also clearly illustrate the location of monitoring wells required by Section 14 of this Chapter.</u></p>	<p>40 CFR 146.34(a)(12). Plans (including maps) for meeting the monitoring requirements of §146.33(b);</p>
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The term 'topographic' has been added to clarify the type of contour maps required.

The phrase "monitor wells" is proposed for deletion because of the separate sentence regarding monitoring wells proposed for adoption at the end of this rule. A cross-reference to the sections with more detail about the wells has been added to ensure that the requirements of 40 CFR 146.34 are addressed. The Federal rule is included only to show that maps are a required part of the monitoring plans. The specific monitoring requirements of 40 CFR 146.33(b) (e.g. monitoring of injection pressure) are addressed in the appropriate sections of the proposed Chapter 11, including Sections 4(a)(xiv) & (xvii); Section 11(c), Section 14, and Section 15(b).

The requirement for a monitoring program, of which the maps of the monitoring well locations are a part, is in the proposed Section 4(a)(xv). In actuality, the topographic maps required in Section 4(a)(i) serve as the base maps for most of the maps in the approved permit, such as maps for monitoring locations, vegetation distribution, wellfield layouts, and so forth. The LQD wanted to codify this practice to ensure that monitor well locations are shown on maps which tie into the other permit maps.

Chapter 11, Section 4(a)(ii)
including:

Discussion and illustration of the proposed mining schedule.

- (A) A list of the proposed wellfields:
- ~~3(c)(iii)~~ (B) A map(s) which shows the proposed sequence for mining and reclamation of the wellfields:
- (C) A proposed time schedule for mining each wellfield:
- (D) The operational parameters that will be used to determine when mining will be considered complete in a wellfield, including parameters such as: pumping and injection rates; lixiviant and production fluid concentrations; and groundwater elevations, such that there is a well-defined point in time at which mining will be considered complete.
- (E) The capacity of the water/waste water treatment systems and correlation of the capacity with the mining and restoration schedules.

The proposed new language is intended to clarify the information that the LQD considers necessary to evaluate the proposed mining schedule. This proposed subsection complements proposed Chapter 11, Section 5(a)(i) because mining and reclamation operations are generally on-going simultaneously at most in situ mines. Also, the company should include as much of a proposed mine plan as possible because of the UIC requirements for revisions (see the proposed Section 19 of this Chapter).

Mining and reclamation schedules have been of increasing concern to LQD because of the length of time some of the existing in situ mining and reclamation activities have extended beyond the original projections. Of particular concern is the additional length of time for restoration activities. As an example, in a permit approved in 1987, an operator projected fourteen years from installation of the first wellfield to restoration of all the wellfields (i.e. completion of restoration was projected for about 2001). Additional wellfields and new lands were added over the years, but the overall schedule was not revised until 1997. In the revised schedule, restoration activities now extend to 2012. More importantly, in the revised schedule, restoration activities in two of the original wellfields, that were originally projected to have been completed in 1996, were projected to extend through 1998 - however, restoration activities in those two wellfields have yet to be completed. Therefore, the LQD believes that more attention must be given to mining and reclamation schedules to ensure that the permits remain viable.

The LQD recognizes that schedules may vary due to market conditions, improved ion exchange capacities, and other factors, in addition to difficulties in mining and/or restoration. The LQD does have provisions for interim mine stabilization based on

economic conditions (LQD Noncoal Rules and Regulations, Ch. 3, §§3(k)(ii)), although in situ operators have rarely requested this provision. Regardless of whether the delay is for economic or technical reasons, the schedule must be kept up to date to ensure that mining and restoration are not unduly delayed and that the operator is compliance with the provisions of W.S. §§35-11-405(a), which requires "conformance with an approved mining plan and reclamation plan," and W.S. §§ 35-11-406(a)(xi) and 431(a)(v)) which require "estimated dates of commencement and termination of the proposed permit," and a "timetable for accomplishment of the reclamation plan," respectively.

The phrase "and reclamation" has been removed from this subsection because the reclamation plan requirements have been moved to Section 5.

Chapter 11, Section 3(c)(vii) 4(a)(iii) The procedure(s) used to protect the topsoil and subsoil, as required in Chapter 3, Section 2(c)(i) through (iii), from excessive compaction, degradation, and wind and water erosion where stockpiling of topsoil and subsoil is necessary. The Administrator may authorize topsoil to remain on areas where minor disturbance will occur associated with construction and installation activities including but not limited to light-use roads, signs, wellfields, utility lines, fences, monitoring stations, and drilling provided that the minor disturbance will not destroy the protective vegetative cover, increase erosion, nor adversely affect the soil resource.

The cross-reference to Chapter 3 is included for easier reference and to note that this information needs to be in the Mine Plan portion of the application. The term "subsoil" is also included to maintain consistency with Chapter 3 (in particular, Chapter 3, Section 2(c)(ii)). The last sentence is copied from Chapter 3, Section 2(c)(i)(A), for easier reference. It is not accompanied by underlining because it is not new proposed language. The term "wellfields" has been added to the wording from Chapter 3, Section 2(c)(i)(A) as this type of facility is specific to in situ mining.

Chapter 11, Section 3(c)(x) 4(a)(iv) A description of and design plan for all impoundments and, for impoundments containing wastes, a ~~leakage monitoring~~ detection plan. For impoundments holding toxic or acid-forming material, contingency plans to control unanticipated leakage shall be provided.

The phrase "leakage monitoring plan" has been changed to "leak detection plan" which is more descriptive of the purpose of the plan and a more commonly-used phrase. The intent is to ensure an impoundment does not leak; if it does, then measures to control and monitor the leakage would be necessary.

Chapter 11, Section 3(c)(xi) 4(a)(v) A description of all temporary and permanent surface water diversions in accordance with the requirements of Chapter 3, Section 2(e) and (f), of these regulations.

The phrase "of these regulations" is being removed for consistency with other references in this Chapter.

Chapter 11, Section 3(c)(xii) 4(a)(vi) The composition of all known and anticipated wastes and procedures for their disposal.

Chapter 11, Section 3(c)(xiii) 4(a)(vii) Procedures for ensuring that all acid-forming, or toxic, or other materials constituting a fire, or health and safety hazard encountered during or created by the mining process are promptly treated, confined, or disposed of in a manner designed to prevent pollution of surface water or groundwater, degradation of soils, or and vegetation, or threat to human or animal health and safety.

The "or" is being proposed for amendment to improve grammatical clarity.

Chapter 11, Section 3(c)(xviii) 4(a)(viii) A description of the mitigating measures used during mining to minimize disruption of important habitats and migration routes of wildlife. developed from the consultations with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service as required per Chapter 2, Section 1(f).

The cross-reference to Chapter 2 is included for easier reference and to note that this information needs to be in the Mine Plan portion of the application. As the consultations would include concerns about habitats and migration routes, that portion of the existing rule does not need to be reiterated.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 4(a)(ix) <u>A description of the location within the permit area where underground injection is authorized.</u></p>	<p>40 CFR 144.33(b). Area permits shall specify: (1) The area within which underground injections are authorized....</p>

PROPOSED RULE AMENDMENT	EPA RULE
<p>Chapter 11, Section 3(c)(i) 4(a)(x) A description of the proposed method of operation, including injection pressures, injection rate and; (A) <u>Injection rate, with the average and maximum daily rate and the volume of fluid to be injected;</u> (B) <u>Injection pressures, with average and maximum injection pressures, as required by Section 11 of this Chapter;</u> (C) <u>Proposed stimulation program;</u> (D) <u>Type of recovery fluid to be used;</u> (E) <u>Proposed injection procedure; and</u> (F) <u>Expected changes in pressure, native groundwater displacement and direction of movement of injection fluid.</u></p>	<p>40 CFR 146.34(a). Prior to the issuance of a permit...the Director shall consider the following:...</p> <p>(7) Proposed operating data:</p> <p>(i) Average and maximum daily rate and volume of fluid to be injected; and</p> <p>(ii) Average and maximum injection pressure;...</p> <p>(9) Proposed stimulation program;</p> <p>(10) Proposed injection procedure;</p> <p>(13) Expected changes in pressure, native fluid displacement, direction of movement of injection fluid....</p> <p>146.34(b)(5) The actual injection procedures;...</p>

Along with adding additional items from the EPA rule, the order of items was changed from the existing rule for easier comparison with the EPA rule.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 4(a)(xi) <u>The following information concerning the production zone shall be determined or calculated and submitted for new Class III wells or projects:</u></p> <p>(A) <u>Where the production zone is in a receiving strata which is naturally water-bearing:</u></p> <p>(I) <u>Fluid pressure;</u> (II) <u>Fracture pressure; and</u> (III) <u>Physical and chemical characteristics of the receiving strata fluids.</u></p> <p>(B) <u>Where the receiving strata is not a water-bearing formation, the fracture pressure in the production zone.</u></p>	<p>40 CFR 146.32(c). Where the injection zone is a formation which is naturally water-bearing the following information concerning the injection zone shall be determined or calculated for new Class III wells or projects:</p> <p>(1) Fluid pressure; (2) Fracture pressure; and (3) Physical and chemical characteristic of the formation fluids.</p> <p>40 CFR 146.32(d). Where the injection formation is not a water-bearing formation, the information in paragraph (c)(2) of this section must be submitted.</p>

Chapter 11, Section 3(c)(v) 4(a)(xii) The procedure(s) to ~~ensure~~ assure that the installation of recovery, injection, and monitor wells will not result in hydraulic communication between the production zone and overlying or underlying stratigraphic horizons.

The term "insure" was changed to "assure" to more accurately reflect the intent of the rule.

The phrase "or underlying" wells was included because some monitor wells are completed in underlying horizons and need to be properly installed to prevent hydraulic communication with the production zone (or other overlying zones).

Chapter 11, Section 3(c)(iv) 4(a)(xiii) The procedures utilized to verify that the injection and recovery wells are in communication with monitor wells completed in the receiving strata and employed for the purpose of detecting excursions.

Chapter 11, Section 3(c)(ix) 4(a)(xiv) Descriptions of:

(A) The completion details for all monitor wells; and

(B) A detailed description of the typical proposed well completion for injection and recovery wells, as required by Section 6 of this Chapter.

The cross-reference to Section 6 is included for easier reference and to note that this information needs to be in the Mine Plan portion of the application. Also, this subsection has been divided into (A) and (B) portions to highlight the different types of wells involved.

Well completion details are also required by the EPA rules:

40 CFR 144.52(a)(1)...The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. The plans shall also contain schematic or other appropriate drawings of the surface and subsurface construction details of each well....

40 CFR 146.34(a). Prior to the issuance of a permit..., the Director shall consider the following:...(11) Schematic or other appropriate drawings of the surface and subsurface construction details of the well....

Chapter 11, Section ~~3(c)(xv)~~4(a)(xv) ~~Details of a program to monitoring program and reporting schedule the quantity and quality of waters that may be affected by the operation from premining through release of bond, including a description of procedures and time schedules used to confirm excursions as required by Sections 14 and 15 of this Chapter, respectively.~~

The cross-references to Sections 14 and 15 are included for easier reference and to note that this information needs to be in the Mine Plan portion of the application.

Chapter 11, Section ~~3(c)(vi)~~4(a)(xvi) A schedule ~~for and description of the~~ procedures to check ~~for to demonstrate and maintain~~ mechanical integrity of all Class III injection wells prior to injection and at a ~~minimum of every five (5) years of use as required by Section 7 of this Chapter.~~

The cross-reference to Section 11 is included for easier reference and to note that this information needs to be in the Mine Plan portion of the application.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 4(a)(xvii) <u>A corrective action plan, for such wells which are improperly sealed, completed, or abandoned, consisting of such steps or modifications as are necessary to prevent movement of fluid into unauthorized zones as required by Section 13 of this Chapter.</u></p>	<p>40 CFR 144.55(a)...For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action")....</p> <p>40 CFR 146.34(a)(14) Contingency plans to cope with all shut-ins or well failures so as to prevent the migration of contaminating fluids into underground sources of drinking water;</p>

The term "unauthorized zones" is used instead of Underground Source of Drinking Water as movement of fluid into any zone not authorized in the permit is prohibited to help ensure appropriate balance of the production and injection in the wellfield..

Chapter 11, Section ~~3(c)(xiv)~~4(a)(xviii) A description of chemical reactions that may occur during mining as a result of recovery fluid injection.

Chapter 11, Section ~~3(c)(viii)~~ 4(a)(xix) A subsidence analysis, using established geotechnical principles, which estimates, based upon the proposed mining operation, the effect of subsidence upon the land surface and overlying groundwater aquifers. Subsidence shall be planned and controlled to the extent that the values and uses of the surface land resources and the groundwater aquifers will not be degraded.

The commas have been added for grammatical reasons.

Chapter 11, Section ~~3(c)(xvi)~~ 4(a)(xx) A description of measures employed to prevent an excursion, and contingency and corrective action plans to be implemented in the event of an excursion, in accordance with Sections 12 and 13 of this Chapter.

Chapter 11, Section ~~3(c)(xvii)~~ 4(a)(xxi) An assessment of impacts that may reasonably be expected as a result of the mining operation to water resources and water rights inside the permit area and on adjacent lands, and the steps that will be taken to mitigate these impacts.

Chapter 11, Section ~~WQD Chapter 11, Section 70(a)(ii)-(iv)~~ 4(a)(xxii) A maintenance plan to ensure:

(A) Wells are covered and the covers are watertight;

(B) The wells are marked and can be clearly seen; and

(C) The area surrounding each well is kept clear of brush or debris; and

(D) Monitoring equipment is appropriately serviced and maintained so the monitoring requirements in Section 14(a)(i) of this Chapter can be met.

Mining industry representatives requested that a single document be prepared containing both the WQD and LQD requirements; therefore the first three subsections are from WQD regulations. The last subsection provides a cross-reference to the requirements for equipment maintenance.

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-405(a), 35-11-426(a), 35-11-427, 35-11-428, and 35-11-803(a).

10. Proposed Rule Amendment/Adoption/Repeal: Chapter 11, Section 5

Section 35. Permit Applications Content Requirements - Reclamation Plan.

Section 3 in the existing rules has been separated in the proposed rules into Section 3 (Adjudication and Baseline Information), Section 4 (Mine (Operations) Plan), and Section 5 (Reclamation Plan).

Most of proposed Section 5 is from the existing Section 3(d), although the order of the subsections has been changed and some subsections have been moved to more appropriate sections. The introductory subsection has remained the same, and subsections related to groundwater restoration immediately follow because this restoration is generally the reclamation/restoration requirement is the most significant item. The restoration schedule requirements have also been revised to parallel those of the mine schedule (proposed Section 4(a)(ii)). Subsections related to well plugging or conversion follow restoration, as wells generally cannot be plugged or converted until restoration is complete. Surface reclamation requirements then follow.

The requirements for Research and Development License Applications, which are in the existing Section 5, have been moved to the proposed Section 20.

Chapter 11, Section 2(a) and 3(c) 5(a) A reclamation plan containing all information required by ~~W.S. § 35-11-406(b)(ii), (iv), (xv), (xix) and consistent with the applicable in situ technology. All applications for a permit shall include, at a minimum, the information and materials related to reclamation required in: W.S. §§ 35-11-428 and 429; Chapter 1, Chapter 2, Section 1, and Chapter 3, Section 2 (excepting Subsections (b)(ii) and (iii), (c)(iv), and (h) and with respect to subsection (k)(i), reclamation shall be completed within two years following groundwater restoration as modified in Section 5(a)(iv) of this Chapter); and~~

The list of cross-references to chapters and sections ("Chapter 1, Chapter 2, Sections 1...") was brought forward from the existing rule at Chapter 11, Section 2(a) and has not been underlined because these cross-references are not new proposed language.

The statute citations in the existing Section 3(d) have been consolidated as a single reference to W.S. § 35-11-428 in the proposed rules because W.S. § 35-11-428 cross-references all the portions of W.S. § 35-11-406 listed in the existing Section 3(d). Reference to W.S. § 35-11-429, which also includes requirements for permit content, has been added to ensure the requirements of this statute section are not overlooked.

The reference to W.S. § 35-11-428 is included in the proposed Sections 3(a), 4(a), and 5(a) because it relates to material applicable to all portions of a permit application.

Similarly, the reference to W.S. § 35-11-429 is included in the proposed Sections 4(a) and 5(a) because it relates to material applicable to those two portions of a permit application.

The phrase "at a minimum" has been included to allow additional information to be included in the permit or license to address unanticipated circumstances (per W.S. § 35-11-406(a)(xv)).

The proposed phrase "as modified in Section 5(a)(x) of this Chapter" cross-references the subsection to which the existing phrase "reclamation shall be completed within two years following groundwater restoration" has been moved. Because the existing phrase has also been modified, it was considered more readable if it were moved and modified than trying to modify it as a long phrase on the end of Section 4(a) and 5(a).

Chapter 11, Section ~~3(c)(iii)~~ 5(a)(i) Discussion and illustration of the proposed groundwater restoration schedule, including:

(A) A list of the proposed wellfields;

~~3(c)(iii)~~ (B) A map(s) which shows the proposed sequence for reclamation restoration of the wellfields;

(C) A proposed time schedule for each wellfield;

(D) The capacity of the water/waste water treatment systems and correlation of the capacity with the mining and restoration schedules.

Please see the Statement of Principal Reasons for Chapter 11, Section 4(a)(ii) for explanation of the proposed changes.

Chapter 11, Section ~~3(d)(f)~~ 5(a)(ii) The information necessary to demonstrate that the operation will return all affected groundwater, including affected groundwater within the production zone, receiving strata, and any other areas, to a condition such that its quality of use is equal to or better than, and consistent with, the uses for which the water was suitable prior to the operation by employing the best practicable technology. Such a demonstration shall be made by showing that, through the employment of the best practicable technology, as defined in W.S. § 35-11-103(f)(i):

(A) The condition and quality of aAll affected groundwater will be returned to background or better, or: as close to premining quality and quantity as practicable. At a minimum, the groundwater will be returned to a quality of use, on a parameter by parameter basis, equal to and consistent with the uses for which the water was suitable prior to the commencement of the operation.

(B) ~~The requirements of Section 3(d)(i)(A) cannot be achieved. In this event the condition and quality of all affected groundwater will at a minimum be returned to a quality of use equal to and consistent with uses for which the water was suitable prior to the commencement of the operation. In making a determination of whether a demonstration has been made by the operator that the best practicable technology has been applied and the water quality and quantity has been returned as close to premining quality and quantity as practicable, on a parameter by parameter basis, the Administrator shall, at a minimum, take the following factors into consideration:~~

(I) The character and degree of injury or interference with the health and well being of the people, animals, wildlife, aquatic life and plant life affected;

(II) The social and economic value of the source of pollution;

(III) The social and economic value of the impacted aquifer;

(IV) The priority of location in the area involved;

(V) The technical practicability and economic reasonableness of reducing or eliminating the source of pollution;

(VI) The effect upon the environment; and

(VIII) The potential impacts to other waters of the state.

This section of Chapter 11 was the subject of considerable discussion during the August 1997 Advisory Board meeting and the November 1998 EQC hearing. The proposed rule shown above is largely derived from the Advisory Board discussions. However, after the later discussions and further review, the LQD believes that additional changes were necessary to avoid regulatory considerations receiving greater weight than statutory requirements. The purpose of the following review is to summarize the critical statutory, regulatory, and technical issues that need to be considered for this section. Specific changes to the language developed from the earlier discussions are noted at the end of the review.

STATUTORY, REGULATORY, AND TECHNICAL ISSUES

The statutes, the existing LQD rules and regulations, and the existing WQD rules and regulations all specify restoration requirements. The statutory definition of "groundwater restoration" in W.S. § 35-11-103(f)(iii) is:

"the condition achieved when all groundwater affected by the injection of recovery fluids is returned to a quality of use equal to or better than, and consistent with the uses for which the water was suitable prior to the operation by employing the best practicable technology;"

where "best practicable technology" is defined as:

"a technology based process justifiable in terms of existing performance and achievability in relation to health and safety which minimizes, to the extent safe and practicable, disturbances and adverse impacts of the operation on human or animal life, fish, wildlife, plant life and related environmental values;" (W.S. § 35-11-103(f)(i)).

The existing LQD rules and regulations (Chapter 11, Section 3(d)(i)) state that groundwater must be restored to "background or better" through the use of "best practicable technology" (as defined in the statutes) or, if background cannot be achieved, the groundwater must be restored to "a quality of use equal to and consistent with uses for which the water was suitable" before mining.

The WQD rules and regulations (Chapter 8, Section 4(d)(viii)(B)) states that:

"A discharge into a Class V (Mineral Commercial) Groundwater of the State shall be for the purpose of mineral production and shall not result in the degradation or pollution of the associated or other groundwater unless the affected groundwater quality can be returned to background or better quality after mining ceases, by a reduction or elimination of pollution; or in the waste of other water resources. If it has been determined by the Administrator that a return to background quality cannot be achieved, the affected groundwater will, at a minimum, be returned to a condition and quality consistent with the pre-discharge use suitability of the water,"

where "background" is defined as:

"the constituents or parameters and the concentrations or measurements which describe water quality and water quality variability prior to a subsurface discharge." (WQD, Chapter 8, Section 2(b))

The in situ mining industry has commented that it is difficult to plan for restoration when it is unclear what the restoration standard will be (i.e., background or class of use) because of the uncertainty as to how the term "background" in the LQD and WQD regulations relates to the statutory definition of groundwater restoration.

Industry, LQD, and WQD have historically based evaluations of use, in part, on the use classifications in Chapter 8 of the WQD regulations, and additional insight on the interpretation of these regulations was provided in Kerr-McGee Nuclear Corporation

vs. Robert E. Sundin et. al., Civil Action No. 92-472, 1st Judicial District, Laramie County, Wyoming (December 30, 1982):

"If the Administrator determines that it is not feasible for the applicant to return the Class V groundwater to background levels, then the applicant will be allowed to return the groundwater to a level consistent with the class of groundwater in existence prior to the commencement of mining. For groundwater which was consistent with Class I, II, III or Special A uses, Table I, on pages 9 and 10 of Chapter 8, Wyoming Water Quality Rules and Regulations, shall be used to establish the constituent levels to which the applicant will be required to restore the groundwater, on a parameter-by-parameter basis."

However, evaluations of use must also be based on the two key aspects of the underlying statutory requirement: (1) "quality of use equal to or better than"; and (2) "consistent with the uses for which the water was suitable." It is important to recognize that the WQD classification is based on use first (if the water is in use) and on ambient water quality if the water is not already in use. For example, in agricultural applications, the tolerances of different plants to a constituent such as chloride vary. Therefore, water that does not fall within the WQD Class II standard (Agriculture) may actually be in use for a specific agricultural application. In addition, it is important to recognize that there are other water quality parameters than those listed on Table I in WQD's Chapter 8.

For example, in situ mines may use bicarbonate (HCO_3) as one of the parameters for detecting excursions because bicarbonate is part of the lixiviant. Therefore, the 'baseline' or 'background' bicarbonate concentration and variability of that concentration must be determined prior to mining so the mines can monitor for increases in the concentration (which would indicate an excursion). Similarly, in situ mines evaluate 'baseline' or 'background' concentrations of calcium and magnesium prior to mining, in part because these parameters affect water hardness and chemical reactions. If the concentrations of these parameters change as a result of pH changes from the lixiviant injection, they may impact equipment and processing. Therefore, if a mine impacts the concentrations of parameters other than those listed in WQD's Chapter 8, then those concentrations need to be returned to the 'baseline' (or 'background') concentrations to ensure that the restoration returns the water to a quality "consistent with the uses for which the water was suitable."

In addition, WQD's classification parameters and concentrations may change as the pressures on groundwater supplies and knowledge of health impacts and other use considerations increases in this state and nationwide.

In summary, the 'two-phase' approach in the existing rules ((A) Background and (B) Class of Use) is more reflective of the statutory requirement (and subsequent court

interpretation). Therefore, the proposed rules should also reflect the statutory requirement first and then be complemented by, rather than supplanted by, the regulatory scheme for groundwater classification in WQD's rules and regulations.

SPECIFIC CHANGES TO LANGUAGE DEVELOPED IN EARLIER DISCUSSIONS

In proposed Chapter 11, Section 5(a)(xiii)(A), the in situ mining industry suggested that the term "background" be replaced with the term "premining condition;" however, because the term "condition" is vague, LQD has proposed the more definitive phrase "quality and quantity." Similarly, in proposed Chapter 11, Section 5(a)(xiii)(B), the in situ mining industry suggested that the existing wording be changed to:

"In making a determination of whether a demonstration has been made by the operator that the best achievable condition, on a parameter by parameter basis has been met, the Administrator shall, at a minimum, take the following factors into consideration:"...

However, the phrase "best achievable condition" is vague, therefore, for more definitive language and to provide better continuity between subsections (A) and (B), the LQD has proposed the following language:

"In making a determination of whether a demonstration has been made by the operator that the best practicable technology has been applied and the water quality and quantity has been returned as close to premining quality and quantity as practicable, on a parameter by parameter basis, the Administrator shall, at a minimum, take the following factors into consideration:"...

The itemized list of factors that the Administrator needs to take into consideration is developed from several sources and is not in any particular order of importance. Subsections I, II, IV, V, and VI are taken from W.S. § 35-11-302(a)(vi)(A) - (E). Subsection III is based on the developing concepts of looking at all aspects of economic impact (such as analysis frameworks being developed by the EPA for analyzing the impacts of proposed regulations) and the increasing importance of groundwater resources (e.g., National Research Council, Valuing Ground Water - Economic Concepts and Approaches, National Academy Press, 1997). Subsection VII is reportedly from the earlier discussions of the restoration requirements and fits in well with concerns about impacting areas outside aquifer exemption areas.

Chapter 11, Section 5(a)(iii) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 5(a)(iii) <u>A plan for well repair, plugging, and conversion as required by Section 8 of this Chapter.</u></p>	<p>40 CFR 144.51(o) A Class...III permit shall include...conditions which meet the applicable requirements of §146.10 of this chapter to insure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of §146.10 of this chapter, the Director shall incorporate it into the permit as a permit condition....For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.</p>

The cross-reference to Section 8 is included for easier reference and to note that this information needs to be in the Reclamation Plan portion of the application.

Chapter 11, Section ~~3(d)(xi)~~ 5(a)(iv) A proposed time schedule for achieving reclamation, including commitments that reclamation ~~shall be completed within two years following groundwater restoration of mining-related surface disturbances in any mining area~~ shall be completed within two years following approval of groundwater restoration in that area and that reclamation of all mining-related surface disturbances shall be completed within two years following approval of final groundwater restoration within the permit area.

The phrase "shall be completed within two years following groundwater restoration" is in Section 2(a) in the current rules. Because in situ mining and restoration are conducted by wellfield, the proposed changes are intended to tie the two-year time frame to the actual in situ approach.

Chapter 11, Section ~~3(d)(ii)~~ In accordance with paragraph (i) of this subsection, the condition of groundwater restoration and the proposed procedures to achieve such restoration:

This subsection is proposed for repeal because it required submittal of essentially the same information as Section 3(d)(i), now presented as Section 5(a)(ii) above.

Chapter 11, Section ~~3(d)(iii)~~ 5(a)(v) A contour map showing the approximate postreclamation surface contours for affected lands and the immediate surrounding areas if the operation will substantially alter the premining contours.

Chapter 11, Section 3(d)(iv) 5(a)(vi) Procedures for reestablishing any surface drainage that may be disrupted by the mining operation.

Chapter 11, Section 3(d)(v) 5(a)(vii) Procedures for the reclamation of any temporary diversion ditches or impoundments.

Chapter 11, Section 3(d)(vi) 5(a)(viii) Procedures for permanently disposing of any toxic or acid-forming materials.

Chapter 11, Section 3(d)(vii) 5(a)(ix) Procedures for removing and disposing of structures used in conjunction with the mining operation.

Chapter 11, Section 3(d)(viii) 5(a)(x) Procedures for mitigating or controlling the effects of subsidence.

Chapter 11, Section 3(d)(ix) 5(a)(xi) Procedures for ground surface preparation, depth of topsoil replacement, erosion control and water conservation practices.

Chapter 11, Section 3(d)(x) 5(a)(xii) Procedures for revegetation ~~so as~~ to return the affected lands to the proposed postmining land use and procedures for evaluation of revegetation success in accordance with Chapter 3, Section 2(d).

The phrase "so as" has been removed for editorial reasons.

The phrase "procedures for evaluation of revegetation success" has been added to ensure that the operator's proposed method of sampling reclaimed areas and the designation of a bond release comparison unit is reviewed and approved by the LQD staff.

Chapter 11, Section 3(d)(xii) 5(a)(xiii) The estimated costs of for reclamation as computed in accordance with established engineering principles, including, but not limited to:

- (A) Cost of removing and disposing of structures;
- (B) Cost of topsoiling and reseeding all affected lands;
- (C) Cost of facilities, materials, and chemicals used for groundwater restoration;
- (D) Cost of capping, plugging, and sealing of all wells; and
- (E) Costs for personnel working on reclamation-related activities.

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-405(a), 35-11-426(a), 35-11-427, 35-11-428, and 35-11-803(a).

11. Proposed Rule Adoption: Chapter 11, Section 6

Section 6. Well Location, Depth Intervals, and Completion Requirements.

LQD Chapter 11, Section 6(a) The methods for well construction shall be approved by the Administrator and included in the permit or Research and Development Testing License application (per Section 4(a)(xiv) of this Chapter) and shall constitute a condition of the permit. The location and construction requirements listed in Sections 6(a) through 6(f) of this Chapter are applicable to all wells installed for activities related to in situ mining. Additional requirements for Class III injection wells are included in Section 6(g). Additional requirements for monitoring wells are included in Section 6(h).

Per 40 CFR 144.52(a)(1), the well construction requirements are considered permit conditions.

This section consolidates well construction requirements from the Water Quality Division (WQD) Rules and Regulations, the Wyoming State Engineer's Office, and requirements proposed for adoption from counterpart EPA rules - most of the well construction requirements are from Sections 65 through 69 of Part G of Chapter 13 of the WQD Rules and Regulations.

§64(a)	<i>copied to & modified in</i>	§6(b)(i)
§64(b)	<i>copied to & modified in</i>	§6(b)(iv)
§65 Introduction	<i>copied to & modified in</i>	§6(c)
§65(a),(b),&(d)	<i>consolidated in/replaced with</i>	§6(c)(i),(ii)&(iv)
§65(c)	<i>copied to & modified in</i>	§6(c)(v)
§65(e)	<i>copied to & modified in</i>	§6(c)(iii)
§66(a)	<i>copied to & modified in</i>	§6(b)(iii)
§67(a)	<i>consolidated in</i>	§6(d)
§67(b)	<i>copied to & modified in</i>	§6(e)
§68	<i>consolidated in/replaced with</i>	§6(c), (c)(ii), & (c)(iv)
§69	<i>consolidated in</i>	§6(f)

Chapter 11, Section 6(b) *On next page...*

Location/Siting: In selecting well locations, capping wells, and maintaining well caps, the following requirements apply:

~~64(a)~~ 6(b)(i) The top of the casing shall terminate above grade. Where possible, the top of the casing shall terminate or above any known conditions of flooding from runoff or standing water, and the area around the well shall slope away from the well to direct surface drainage shall be directed away from the well. If a well must be completed in an ephemeral drainage, steps shall be taken to protect the well from damage due to runoff and to prevent surface water drainage into the well. Completion of wells in intermittent or perennial drainages is prohibited.

~~69(b)~~ 6(b)(ii) The well opening shall be closed with a watertight cover to prevent the introduction of undesirable material into the well and to insure public assure the safety of humans and animals whenever the well is not in use or when maintenance is being performed on the well.

~~66(a)~~ 6(b)(iii) Openings into the top of the well which are designed to provide access to the well, e.g., for injection, production, sampling, and measuring water levels, chlorinating, adding gravel, etc., shall be protected against entrance of surface waters or foreign matter by installation of water tight caps or plugs. Access openings designed to permit the entrance or egress of air or gas shall terminate above the ground and above known flood levels and shall be protected against the entrance of foreign materials by installation of downturned and screened "U" bends. All other openings (holes, crevices, cracks, etc.) shall be sealed. A sounding tube, taphole with plug or similar access for the introduction of water level measuring devices or for access for wiring or tubing for permanent downhole measuring devices may be affixed to the casing of the well as long as the proper seal is maintained. Access ports for water level or pressure measuring devices are required by the State Engineer on all wells greater than four inches diameter.

~~64(b)~~ 6(b)(iv) Where a well is to be near a building or powerlines, the well shall be located at a distance from the building and powerlines to provide access for repairs, maintenance, sampling, and similar work. At a minimum, a well must clear any projection from a building by three feet and clear any powerline by ten feet.

This proposed section combines requirements from three separate sections in the WQD Rules and Regulations. The WQD Rules and Regulations generally include section headings (e.g., Well Location/Siting); in contrast, the LQD Rules and Regulations generally include an introductory phrase or sentence. Therefore, several of the proposed changes in this section are for format consistency.

Proposed Section 6(b)(i): In situ wells cannot be located in intermittent or perennial drainages; however, because of ore distribution, a few in situ wells are or may be located within ephemeral drainages, which may be flooded on occasion. Therefore, the WQD rule, which is applicable to a broad spectrum of wells, has been modified to more accurately reflect the specific concerns related to in situ wells.

Proposed Section 6(b)(ii): Access to in situ mines is generally controlled; therefore, specifying public safety is not considered necessary, although a reminder about safety is considered appropriate. Specifications on clearance for buildings and powerlines is from the SEO Rules and Regulations (Part III, Chapter III, Section 3).

Proposed Section 6(b)(iii): As noted above, many of the WQD requirements for well openings are applicable to a broad spectrum of wells. In addition, many in situ wells are now equipped with dedicated, downhole measuring devices. Therefore, the requirements have been modified to more accurately reflect the specific concerns related to in situ wells.

Proposed Section 6(b)(iv): Most in situ wells are sampled on a regular basis; therefore, the last phrase has been added as a reminder that well access is needed for sampling as well as maintenance.

~~WQD Chapter 11, Sections 65 and 68~~ LQD Chapter 11, Section 6(c) Sealing the Annular Space:

The annular space shall be sealed to protect it against contamination or pollution by entrance of surface and/or shallow subsurface waters. Annular seals shall be installed to: provide protection for the casing against corrosion; to assure structural integrity of the casing; to stabilize the upper formations; protect the annular space against contamination or pollution by entrance of surface and/or shallow subsurface waters; and prevent migration of water from one aquifer or water-bearing strata to another in accordance with the following requirements:

~~65(b)&(d)~~ **6(c)(i)** The drill hole shall be of sufficient diameter for adequate sealing and at a given depth, at least four inches greater in drilled diameter than the diameter of the outer casing and joints at that depth. The annular space between outer casing and inner casing, if inner casing is used, shall also be of sufficient diameter for adequate sealing, and the outer casing diameter at least four inches greater than the inner casing diameter. If unconsolidated material is encountered, temporary conductor casing may be needed to hold the drill hole open while the sealing material is placed. Thickness of seal: The thickness of the seal shall be at least two inches, as measured perpendicular from the drill hole wall to the outer casing wall or between the walls of outer and inner casing, and not less than three times the size of the largest coarse aggregate used in the sealing material.

~~68(a)&(b)~~ **6(c)(ii)** All of the annular space, except that portion in the aquifer or water-bearing strata in which the well is completed, shall be sealed to prevent migration of water from one aquifer or water-bearing strata to another.

~~65(e)&68(e)~~ **6(c)(iii)** Placement of seal: Before placing the seal, all loose cuttings, chips, or other obstructions shall be removed from the annular space by flushing with water or fluid drilling mud.

65(c)(iv) 6(c)(v) The sealing material shall be placed from the bottom to the top of the interval to be sealed, and, when possible, placed in one continuous operation. The fluid used to force the final sealing material through the casing shall remain under pressure, to prevent back flow, until the sealing material is set. If settling occurs during setting of the sealing material, additional material must be placed to bring the level of the sealing material to the ground surface.

65(c)&68(c) 6(c)(v) Sealing material shall consist of neat cement grout, sand-cement grout, bentonite clay or concrete meeting the following requirements:-

65(c)(i) 6(c)(v)(A) Cement used for sealing mixtures shall meet the requirements of American Society of Testing Materials (ASTM) C150-00 "Standard Specifications for Portland Cement" (2000) or American Petroleum Institute (API) RP 10B "Recommended Practices for Testing Oil-Well Cements and Cement Additives" (22nd ed., 12/1997, with Addendums 1 (10/1999) and 2 (11/2000). Materials used as additives for Portland Cement mixtures in the field shall meet the requirements of ASTM C494/C494M-99ae1 "Standard Specifications for Chemical Admixtures for Concrete" (2001) or API RP 10B "Recommended Practices for Testing Oil-Well Cements and Cement Additives" (22nd ed., 12/1997, with Addendums 1 (10/1999) and 2 (11/2000).

65(c)(ii) 6(c)(v)(B) Neat cement shall be composed of one sack of Portland Cement (94 pounds) to 4½ to 6½ gallons of clean water.

65(c)(iii) 6(c)(v)(C) Sand-cement grout shall be composed of not more than two parts by weight of sand and one part of Portland cement to 4½ to 6½ gallons of clean water per sack of cement.

65(c)(iv) 6(c)(v)(D) Concrete used shall be "Class A" or "Class B". Aggregates shall meet the requirements of ASTM C33-01 "Standard Specifications for Concrete Aggregates" (2001).

65(c)(v) 6(c)(v)(E) Special quick-setting cement, retardants to setting, and other additives, including hydrated lime to make the mix more fluid or bentonite to make the mix more fluid and reduce shrinkage, may be used.

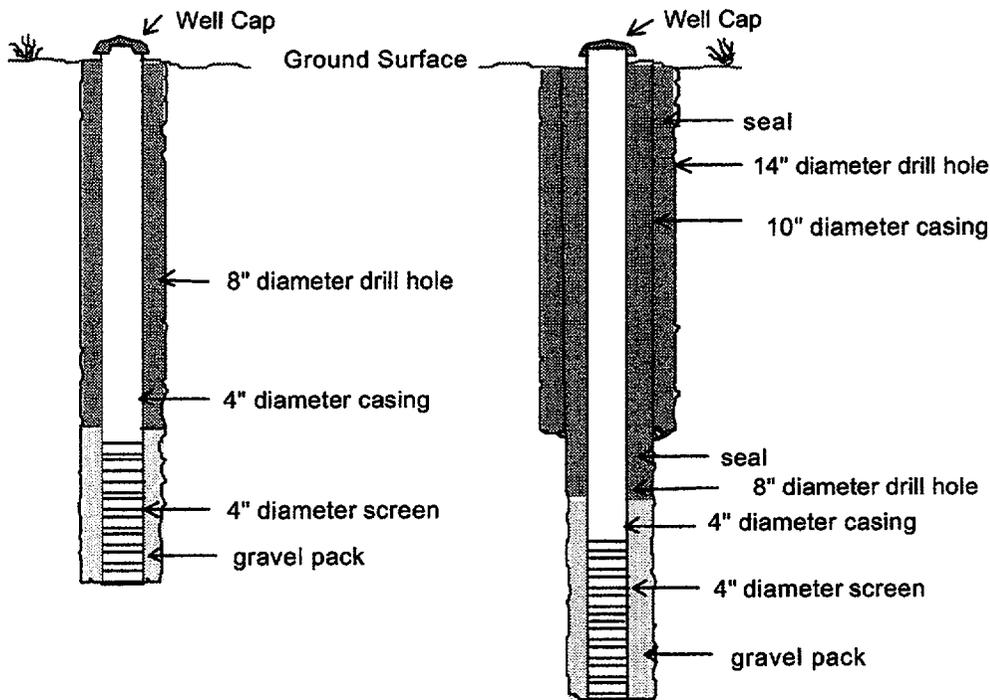
65(c)(vi) 6(c)(v)(F) Bentonite clay mixtures shall be composed of bentonite clay and clean water thoroughly mixed before placement so that there are no balls, clods, etc or other features that could reduce the effectiveness of the seal.

65(c)(vii) 6(c)(v)(G) Used drillers mud or cuttings or chips from drilling the borehole shall not be used as sealing material.

65(c)(viii) 6(c)(v)(H) The minimum time that must be allowed for materials containing cement to "set" shall be in accordance with (ASTM) C150-00 "Standard Specifications for Portland Cement" (2000) or American Petroleum Institute (API) RP 10B "Recommended Practices for Testing Oil-Well Cements and Cement Additives" (22nd ed., 12/1997, with Addendums 1 (10/1999) and 2 (11/00). When necessary these times may be reduced by use of accelerators as determined by the well contractor.

As noted in the SOPR for Section 6(a), many of the WQD requirements are for a broad spectrum of wells; therefore, the requirements have been condensed. Also as noted in the SOPR for Section 6(a), the WQD Rules and Regulations generally include section headings (e.g., Well Location/Siting); in contrast, the LQD Rules and Regulations generally include an introductory phrase or sentence. Therefore, several of the proposed changes in this section are for format consistency.

Proposed Section 6(c)(i): The proposed changes from the WQD Rules and Regulations clarify that sealing is needed whether a single casing is installed in the drill hole or both inner and outer casings are installed and specifies the annular space and seal thickness that are considered the minimum necessary for obtaining an adequate seal. The following diagram (Figure 1) illustrates the requirements:



Also applicable to open-hole completions

Not to Scale

Figure 1
Well Construction Diagram

Proposed Section 6(c)(ii) and (iii): As noted above, many of the WQD requirements are applicable to a broad spectrum of wells. Therefore, the requirements have been modified to more accurately reflect the specific concerns related to in situ wells.

Proposed Section 6(c)(iv): The corresponding WQD requirements are intended for wells that are sealed from the surface downward. As this is not the method commonly used by (or considered appropriate for) in situ wells, the proposed rule reflects the method used by (and appropriate for) in situ wells.

Proposed Section 6(c)(v): The proposed rule is essentially the same as the WQD rule, with minor editorial changes (e.g., in §6(c)(v)(G), chips and cuttings are generally considered synonymous) and the addition of dates so the reference is specific.

~~WQD Chapter 11, Section 67(a)~~ LQD Chapter 11, Section 6(d) Casing. The casing shall provide structural stability to prevent casing collapse during installation as well as drillhole wall integrity when installed; be of required size to convey liquid at a specified injection/recovery rate and pressure; and be of required size to allow for sampling. Casing materials may include steel or polyvinyl chloride, which meet the relevant ASTM standards, or other materials if approved by the Administrator.

Based on experience and industry practice, only a few types of casing have been found to be appropriate for in situ mining; therefore, the list of casings found in the Water Quality rules at Chapter 13, Section 67(a) is not presented here.

~~WQD Chapter 11, Section 67(b)~~ LQD Chapter 11, Section 6(e) All casing shall be placed with sufficient care to avoid damage to casing sections and joints. All joints in the casing above the perforations or screens shall be watertight and capable of withstanding projected injection pressures. The uppermost perforations shall be at least below the minimum depth of seal. Casing shall be equipped with centering guides at a minimum spacing of twenty feet to ensure even thickness of annular seal and/or gravel pack.

~~67(b)(i) 6(e)(i)~~ Metallic casing. Steel casing may be joined by either welding or by threading and coupling.

~~67(b)(ii) 6(e)(ii)~~ Plastic (non-metallic) casing. Depending on the type of material and its fabrication, plastic casing may be joined by solvent welding or may be mechanically joined. Depending on the type of material and its fabrication. Compatibility between potential contaminants and the sealing agent used shall be demonstrated.

As noted above, many of the WQD requirements are applicable to a broad spectrum of wells. Therefore, the requirements have been modified to more accurately reflect the specific concerns related to in situ wells.

~~69(a)~~ **6(f)(i)** Be done by methods which will not cause damage to the well or cause adverse subsurface conditions that may destroy barriers to the vertical movement of water between aquifers; and

~~69(c)~~ **6(f)(ii)** Include documented deviation checks.

Several of the requirements in the corresponding WQD rule are not applicable to in situ rules or are covered elsewhere in the proposed in situ rules; therefore, this section is shorter than the corresponding WQD section.

Chapter 11, Section 6(g) For Class III injection wells, the following construction requirements are in addition to the requirements listed in (a) through (f) of this Section:

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(g)(i) <u>Appropriate logs and other tests shall be conducted during the drilling and construction of new Class III wells. A descriptive report prepared by a knowledgeable log analyst interpreting the results of such logs and tests shall be submitted to the Administrator. The logs and tests appropriate to each type of Class III well shall be determined based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses. Deviation checks shall be conducted on all holes where pilot holes and reaming are used, unless the hole will be cased and sealed by circulating the sealing material to the surface. Where deviation checks are necessary, they shall be conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration are not created during drilling.</u></p>	<p>40 CFR 146.32 Construction requirements. (b) Appropriate logs and other tests shall be conducted during the drilling and construction of new Class III wells. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. The logs and tests appropriate to each type of Class III well shall be determined based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses. Deviation checks shall be conducted on all holes where pilot holes and reaming are used, unless the hole will be cased and cemented by circulating cement to the surface. Where deviation checks are necessary they shall be conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(g)(ii) <u>All Class III wells shall be cased and sealed to prevent the migration of fluids into or between underground sources of water. The casing and sealing material used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and sealing requirements, the following factors shall be considered:</u></p> <p>(A) <u>Depth to the production zone;</u> (B) <u>Injection pressure, external pressure, internal pressure, axial loading, or other factors as determined by the Administrator;</u> (C) <u>Drill hole annular space;</u> (D) <u>Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);</u> (E) <u>Corrosiveness of injected fluids and formation fluids;</u> (F) <u>Lithology of receiving strata and confining zones; and</u> (G) <u>Type and grade of sealing material.</u></p>	<p>40 CFR 146.32 Construction requirements.</p> <p>(a) All new Class III wells shall be cased and cemented to prevent the migration of fluids into or between underground sources of drinking water. The Director may waive the cementing requirement for new wells in existing projects or portions of existing projects where he has substantial evidence that no contamination of underground sources of drinking water would result. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:</p> <p>(1) Depth to the injection zone; (2) Injection pressure, external pressure, internal pressure, axial loading, etc.; (3) Hole size; (4) Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material); (5) Corrosiveness of injected fluids and formation fluids; (6) Lithology of injection and confining zones; and (7) Type and grade of cement.</p>

The "waiver" portion of the EPA rule is not proposed for adoption because the subsurface conditions and groundwater concerns in the State are such that it is unlikely a "waiver" of this type would be advisable. In addition, an applicant can still apply for a variance under W.S. § 35-11-601.

For consistency with Section 6(c), the term "cement" has been replaced with "seal."

Chapter 11, Section 6(h) The following monitoring well construction requirements are in addition to the requirements listed in (a) through (f) of this Section:

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(h)(i) <u>Where injection is into a receiving strata which contains water with less than 10,000 milligrams per liter (mg/l) Total Dissolved Solids (TDS), monitoring wells shall be completed into the production zone and any Underground Source of Water which could be adversely affected by the mining operation. These wells shall be located in such a fashion as to detect any excursion of injection fluids, process by-products, or formation fluids outside the mining area or zone. If the operation may be affected by subsidence or catastrophic collapse, the monitoring wells shall be located so that they will not be physically affected.</u></p>	<p>40 CFR 146.32 Construction requirements. (e) Where injection is into a formation which contains water with less than 10,000 mg/l TDS monitoring wells shall be completed into the injection zone and into any underground sources of drinking water above the injection zone which could be affected by the mining operation. These wells shall be located in such a fashion as to detect any excursion of injection fluids, process by-products, or formation fluids outside the mining area or zone. If the operation may be affected by subsidence or catastrophic collapse the monitoring wells shall be located so that they will not be physically affected.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(h)(ii) <u>Where injection is into a receiving strata which contains water with greater than 10,000 mg/l TDS, no monitoring wells are necessary in the production zone.</u></p>	<p>40 CFR 146.32 Construction Requirements. (f) Where injection is into a formation which does not contain water with less than 10,000 mg/l TDS, no monitoring wells are necessary in the injection stratum.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(h)(iii) <u>Where the injection wells penetrate an Underground Source of Water (USW) in an area subject to subsidence or catastrophic collapse, an adequate number of monitoring wells shall be completed into the USW to detect any movement of injected fluids, process by-products or formation fluids into the USW. The monitoring wells shall be located outside the physical influence of the subsidence or catastrophic collapse.</u></p>	<p>40 CFR 146.32 Construction Requirements. (g) Where the injection wells penetrate an USDW in an area subject to subsidence or catastrophic collapse an adequate number of monitoring wells shall be completed into the USDW to detect any movement of injected fluids, process by-products or formation fluids into the USDW. The monitoring wells shall be located outside the physical influence of the subsidence or catastrophic collapse.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6(h)(iv) <u>In determining the number, location, and construction of the monitoring wells and frequency of monitoring, the following criteria shall be considered:</u></p> <p>(A) <u>The uses for which the groundwater in the receiving strata is suitable under premining conditions, as determined from Chapter 8, Water Quality Division Rules and Regulations (as amended March 12, 1993), in any aquifer affected or potentially affected by the injection operation;</u></p> <p>(B) <u>The proximity of the injection operation to points of withdrawal;</u></p> <p>(C) <u>The local geology and hydrology;</u></p> <p>(D) <u>The operating pressures and whether a negative pressure gradient is being maintained;</u></p> <p>(E) <u>The nature and volume of the recovery fluid, the formation fluid, and the process by-products;</u> <u>and</u></p> <p>(F) <u>The injection well density.</u></p>	<p>40 CFR 146.32 Construction requirements.</p> <p>(h) In determining the number, location, construction and frequency of monitoring of the monitoring wells the following criteria shall be considered:</p> <p>(1) The population relying on the USDW affected or potentially affected by the injection operation;</p> <p>(2) The proximity of the injection operation to points of withdrawal of drinking water;</p> <p>(3) The local geology and hydrology;</p> <p>(4) The operating pressures and whether a negative pressure gradient is being maintained;</p> <p>(5) The nature and volume of the injected fluid, the formation water, and the process by-products; and</p> <p>(6) The injection well density.</p>

The Wyoming Statutes and Regulations require protection of the quality of the water for both actual and potential uses, which may include domestic, agricultural, or livestock uses (W.S. § 35-11-102 & 35-11-103(f)(iii); WQD Rules and Regulations, Chapter 8, Section 3(c)). Therefore, the proposed language specifies this broader concern, rather than relying on the term "population" for which a definition was not found in the EPA rules and which is not necessarily applicable in rural settings.

In the proposed subsection 6(g)(9v)(B), the phrase "of drinking water" was not included for two reasons. The first is to avoid confusion of the broad EPA definition of "drinking water" (water with a Total Dissolved Solids concentration less than 10,000 milligrams per liter) with the WQD groundwater classification system (WQD Chapter 8, Section 4). The second is that any groundwater withdrawal, regardless of quality, could affect the production/injection balance in a wellfield and, as a result, the design of the monitoring system.

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-426(a), 35-11-427, 35-11-428(a)(iii)(C)&(F), and 35-11-431(a)(vii).

12. Proposed Rule Adoption: Chapter 11, Section 7

Section 7. Mechanical Integrity Testing (MIT) of Class III Injection Wells.

Chapter 11, Section 7(a) A schedule and methods for Mechanical Integrity Testing shall be approved by the Administrator and included in the permit or Research and Development Testing License application (per Section 4(a)(xvi) of this Chapter) and shall constitute conditions of the permit. The schedule and methods shall meet the following requirements:

The EPA rule at 40 CFR 144.52(a)(5) requires that the monitoring and reporting requirements are considered permit conditions:

40 CFR 144.52 Establishing permit conditions.

(a)...Permits...shall contain the following requirements, when applicable.

(5) Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data....

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 7(a)(i) <u>The operator of a Class III well shall establish mechanical integrity as defined in Section 1 of this Chapter for each well prior to commencing injection and shall maintain mechanical integrity for each well until it is plugged or converted in accordance with Section 8 of this Chapter.</u></p>	<p>40 CFR 144.51(q). <i>Duty to establish and maintain mechanical integrity.</i> (1) The owner or operator of a Class...III well permitted under this part shall establish prior to commencing injection or on a schedule determined by the Director, and thereafter maintain mechanical integrity as defined in §146.8 of this chapter... 40 CFR 144.12 <i>Prohibition of movement of fluid into underground sources of drinking water.</i> (a) No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water...</p>

The definition in 40 CFR 146.8 is the definition included in Chapter 11, Section 1 of these proposed regulations.

The rule in 40 CFR 144.12 (in the proposed Section 11(d) of this Chapter) is cited because establishment of mechanical integrity is one of the primary methods used to ensure that mining fluids do not moved to prohibited zones.

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 7(a)(ii) For demonstrating mechanical integrity as defined in Section 1 of this Chapter:</u></p> <p><u>(A) One of the following methods must be used to evaluate the absence of significant leaks in the casing, tubing or packer:</u></p> <p><u>(I) Following an initial pressure test, monitoring of the tubing-casing annulus pressure with sufficient frequency to be representative, as determined by the Administrator, while maintaining an annulus pressure different from atmospheric pressure measured at the surface; or</u></p> <p><u>(II) Pressure test with liquid or gas.</u></p> <p><u>(B) One of the following methods must be used to determine the absence of significant fluid movement into an underground source of water through vertical channels adjacent to the injection bore:</u></p> <p><u>(I) The results of a temperature or noise log; or</u></p> <p><u>(II) Where the nature of the casing precludes the use of the logging techniques prescribed above, cementing records demonstrating the presence of adequate cement to prevent such migrations shall be provided; or</u></p> <p><u>(III) Where the Administrator elects to rely on cementing records to demonstrate the absence of significant fluid movement, the monitoring program prescribed by Section 14 of this Chapter shall be designed to verify the absence of significant fluid movement.</u></p> <p><u>(C) The Administrator may allow the operator to use a test to demonstrate mechanical integrity other than those listed in subsection (A) above. To obtain approval, the Administrator with concurrence of the Director shall submit a written request to the EPA, which shall set forth the proposed test and all technical data supporting its use. The EPA shall approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. Any alternate method approved by the EPA shall be published in</u></p>	<p>40 CFR 146.8 Mechanical integrity.</p> <p>(a) [Definition in Chapter 11, Section 1]</p> <p>(b) One of the following methods must be used to evaluate the absence of significant leaks under paragraph (a)(1) of this section:</p> <p>(1) Following an initial pressure test, monitoring of the tubing-casing annulus pressure with sufficient frequency to be representative, as determined by the Director, while maintaining an annulus pressure different from atmospheric pressure measured at the surface;</p> <p>(2) Pressure test with liquid or gas; or</p> <p>(3) [Class II wells only].</p> <p>(c) One of the following methods must be used to determine the absence of significant fluid movement under paragraph (a)(2) of this section:</p> <p>(1) The results of a temperature or noise log; or</p> <p>(2) [Class II wells only]</p> <p>(3) For Class III wells where the nature of the casing precludes the use of the logging techniques prescribed at paragraph (c)(1) of this section, cementing records demonstrating the presence of adequate cement to prevent such migration;</p> <p>(4) For Class III wells where the Director elects to rely on cementing records to demonstrate the absence of significant fluid movement, the monitoring program prescribed by §146.33(b) shall be designed to verify the absence of significant fluid movement.</p> <p>(d) The Director may allow the use of a test to demonstrate mechanical integrity other than those listed in paragraph [(b)] of this section with the written approval of the Administrator. To obtain approval, the Director shall submit a written request to the Administrator, which shall set forth the proposed test and all technical data supporting its use. The Administrator shall approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. Any alternate method approved by the Administrator shall be published in</p>

PROPOSED RULE ADOPTION	EPA RULE
<u>the Federal Register and may be used in all States unless its use is restricted at the time of approval by the EPA.</u>	the Federal Register and may be used in all States unless its use is restricted at the time of approval by the Administrator.

Chapter 11, Section 7(a)(iii) Maintenance of the mechanical integrity of each Class III well, which has not been plugged or converted as required by Section 8 of this Chapter, shall be demonstrated at least once every five years.

The existing LQD rules (Chapter 11, Section 3(c)(vi)) (now Chapter 11, Section 4(a)(xvii)) require that the permit identify "[a] schedule and procedures to check for mechanical integrity of injection wells prior to injection and at a minimum of every five years of use." Deletion of the phrase "of use" is proposed because the phrase is: inconsistent with existing WQD requirements; so ambiguous as to raise technical and regulatory concerns; contrary to EPA and WQD regulations; and not in keeping with other state programs. The purpose of the following review is to summarize LQD's concerns about the phrase "of use." This section of Chapter 11 was also the subject of considerable discussion during the November 1998 EQC hearing, and those discussions are summarized below. However, after review of those discussions, the LQD still believes that the proposed deletion of the phrase "of use" is necessary.

EXISTING WQD REQUIREMENTS

The existing WQD rules and regulations (Chapter 9, Section 7(a)(6)) include a requirement that the mechanical integrity of an injection well be tested once every five years:

Prior to the issuance of a permit for a subsurface discharge and at a minimum of once every five years thereafter for the life of the permit, the operator shall demonstrate and/or document, as required by the Administrator, the mechanical integrity of the well or system.

In addition, the WQD rules and regulations Chapter 9, Section 70(a)(i) require that the operator of a well that has not been in service for a one year period to maintain the well in such a way that "[t]he well has no defects which will allow the impairment of quality of water in the well or in the water bearing formations penetrated."

Therefore, the WQD rules and regulations include both a requirement that mechanical integrity be checked once every five years and a requirement that, even if a well is not in use, some assurance is needed that the well integrity is maintained. Periodic testing of a well provides that assurance.

TECHNICAL & REGULATORY CONCERNS RELATED TO THE AMBIGUITY OF THE TERM "IN USE"

The integrity of a well declines due to factors such as: age of the casing and cement seal; corrosivity of injection fluids (whether injected into that well or in circulation in the wellfield); physical impacts on the casing (e.g., clogging of screens); or other subsurface conditions (e.g., swelling and shrinking of clays) that may cause well failure. Therefore, degradation of a well's integrity is not precluded even if a well is not actively used for injection.

Even if a well is not actively used for injection, it may still be of use as a production well or a monitoring well. Therefore, the meaning of terms like "in use," "in service," "useful," and "cessation of operations" may shift over time, which can create ambiguities as to when well testing and/or well abandonment are required. For LQD, this is of increasing concern in recent years due to the number of injection wells which are idled as production is cut back or, once an injection well fails a Mechanical Integrity Test (MIT), it is simply no longer actively used as an injection well. For example, one operator has over 200 wells that failed MITs but were not repaired because the operator decided to not use them as injection wells. Such non-use of wells or change in use of a particular well does not mean, however, that well integrity will not be compromised or that a well does not need to be repaired before the well use is changed.

The concerns about well degradation over time are illustrated by the graphs (Figures 2 and 3 on the following pages) which indicate an increase in MIT failures as wells age. Both graphs are developed from the same data set which include all of the MIT tests for one operator from the last three years. Figure 2 is a comparison of the number of MIT failures in new wells and in wells that are being tested after five or more years of service. Figure 3 is a comparison of the percentage of MIT failures in new wells and in wells that are being tested after five or more years of service.

Figure 2
Comparison of Pass/Fail Rate of MITs on New Wells and Wells that are 5 or More Years Old at One In Situ Mine

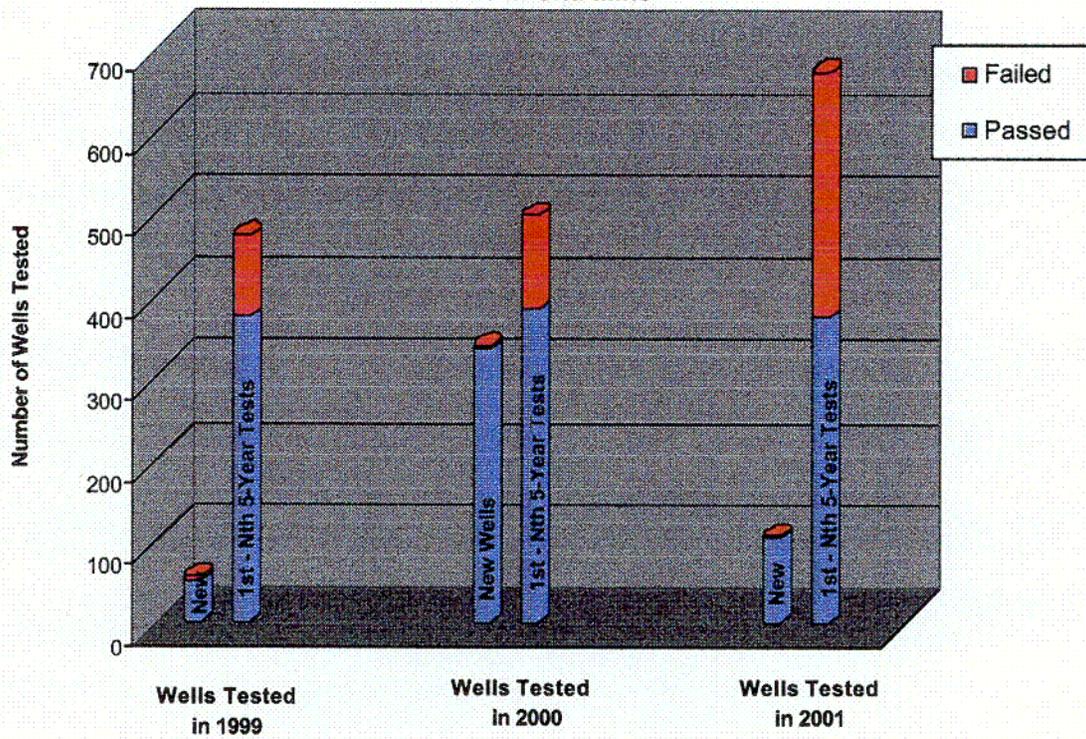
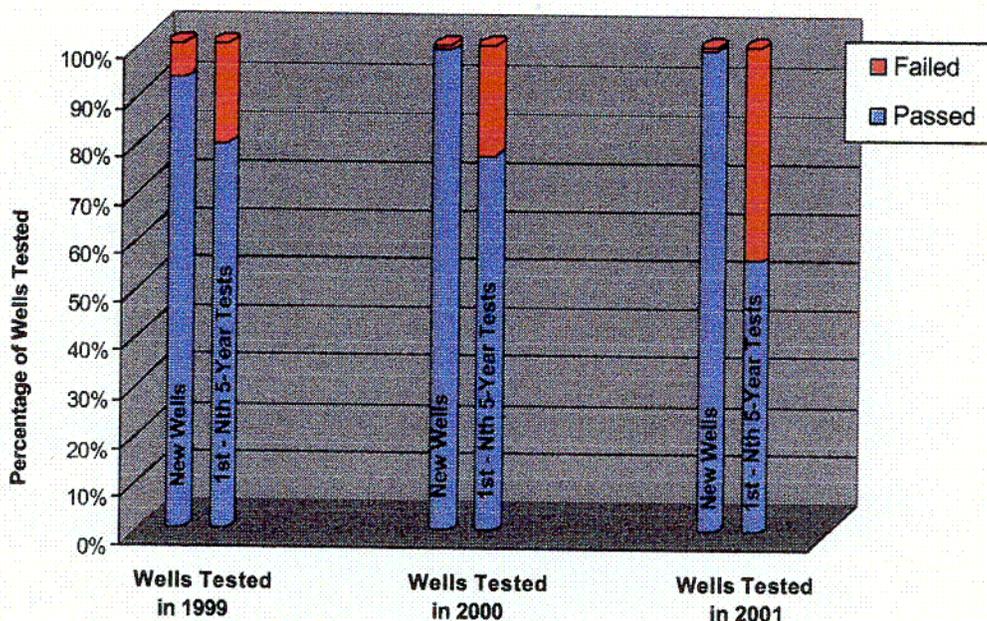


Figure 3
Comparison of Pass/Fail Rate of MITs on New Wells and Wells that are 5 or More Years Old
at One In Situ Mine



EPA AND WQD REGULATIONS

Such non-use, changes in use, and MIT failures are addressed in the Code of Federal Regulations and WQD's Rules and Regulations either directly or indirectly. With respect to non-use, under both EPA and WQD regulations, abandonment (or at a minimum maintenance) of a well is required within a specific time frame after the well is no longer serving the purpose for which it was permitted, as discussed in the proposed Chapter 11, Section 8, which begins on Page 67. With respect to changes in use, WQD rules and regulations (Chapter 11, Section 62) require that "[b]efore a change of use for an existing well can occur, construction standards...shall be met for the new use." It is unlikely that an injection well which has failed an MIT would meet the construction standards for any other potential use of that well.

With respect to MIT failures, per 40 CFR 144.51(q)(1), the owner or operator of a Class III well "shall establish prior to commencing injection or on a schedule determined by the Director, and thereafter maintain mechanical integrity..."(emphasis added) Therefore, the Director (in this case the LQD Administrator) has the authority to require a schedule for MIT. Similarly, when a Class III well lacks mechanical integrity, then:

"[t]he Director may allow plugging of the well...or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as necessary to prevent the movement of fluid into or between [Underground Sources of Drinking Water] caused by the lack of mechanical integrity." (40 CFR 144.51(q)(2))

In addition, the LQD Administrator can impose additional conditions under 40 CFR 144.52(a)(9) "as are necessary to prevent the migration of fluids...." It is LQD's understanding that the EPA uses this provision extensively, in part for MIT requirements because of the lack of a specific time frame for MITs in the EPA Rules. However, the lack of a specific time frame was based on industries' assertions that well lives would be less than five years in general (Federal Register, Vol. 45, No. 123, Page 42485, June 24, 1980), which is not the case in Wyoming.

Based on the above considerations, the LQD Administrator has the authority to require corrective action and another MIT after an MIT failure, on the basis of the potential for fluid movement rather than whether the well will be used for injection again. Also, per 40 CFR 146.34(a)(14), among the items the LQD Administrator must consider in authorizing Class III wells is a contingency plan to cope with well failures "to prevent the migration of contaminating fluids into underground sources of drinking water," again providing the authority to require corrective action and another MIT on the basis for potential for fluid movement. Given the number of injection wells in the state (over 4000 injection wells between two active in situ operations), it is more practical to require testing on the basis of elapsed time, not just time in use of each well.

OTHER STATE PROGRAMS

A five-year MIT requirement is also not an unusual requirement. The Nebraska Underground Injection Control (UIC) program requires:

"Demonstration of mechanical integrity pursuant to Chapter 16 at least once every five years during the life of the well." (Nebraska Department of Environmental Quality Rules and Regulations, Title 122, Chapter 18, Section 003.03).

Similarly, the New Mexico UIC program requires that:

"Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that an effluent disposal well or in situ

extraction well has mechanical integrity." (New Mexico Water Quality Control Commission Regulations, Title 20, Chapter 6, Part 2, Section 5204).

PREVIOUS DISCUSSIONS

Both the Wyoming Mining Association and Power Resources, Inc. commented on this section of the proposed regulations at the November 1998 EQC hearing. Both requested that either the phrase "of use" or a variation of that phrase be retained and expressed the opinion that the State was exceeding EPA requirements (or did not have the authority) to require MITs once every five years, particularly given the EPA regulations LQD relied on in the previous Statement of Reasons (40 CFR §§146.8 and 146.33). However, as outlined in the above discussion, LQD believes that the State has both the authority and is obligated to require MITs on the basis of elapsed time, not just time in use, to ensure adequate protection of the groundwater resources of the State. Also, given the number of injection wells in the state (as noted above over 4000 injection wells between two active in situ operations), the potential for serious consequences is significant if well repairs or plugging are not completed promptly after MIT failure.

Chapter 11, Section 7(a)(iv) Before resuming injection into any Class III well that has been damaged by surface or subsurface activity or that has undergone an activity that may jeopardize the mechanical integrity of the well, such as the use of downhole cutting and underreaming tools, the operator must demonstrate the mechanical integrity of that well.

The first portion of this proposed regulation is intended to reflect the requirements of 40 CFR 144.51(q)(2): "[t]he owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to §146.8 of this chapter."

The second portion of this proposed regulation is based upon 40 CFR 144.51(q)(1): "[t]he owner or operator of a Class III well "shall establish prior to commencing injection or on a schedule determined by the Director, and thereafter maintain mechanical integrity..." Based upon LQD's experience, use of downhole cutting tools and related well maintenance/improvement activities can jeopardize well integrity; hence the basis for specifically requiring re-testing of a well after these activities.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 7(a)(v) <u>If the Administrator determines that a Class III well lacks mechanical integrity, he or she shall give written notice of this determination to the operator of the well. Unless the Administrator requires immediate cessation, the operator shall cease injection into the well within 48 hours of receipt of the Administrator's determination. The Administrator may allow plugging of the well or require the operator to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into unauthorized zones or onto the surface caused by the lack of mechanical integrity. The operator may resume injection upon written notification from the Administrator that the operator has demonstrated mechanical integrity.</u></p>	<p>40 CFR 144.51(q)(2). When the Director determines that a Class I, II, or III well lacks mechanical integrity pursuant to §146.8 of this chapter, he shall give written notice of his determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of §146.10 of this chapter or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to §146.8 of this chapter.</p>

Chapter 11, Section 7(a)(vi) Results of MIT testing shall be reported in accordance with the requirements in Section 15 of this Chapter.

The cross-reference to Section 15 is included to help ensure the requirements for reporting the MIT results are not overlooked.

The authority to adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(iv); 35-11-112(a)(i), 35-11-401(f)(iv), 35-11-402(a)(vi), 35-11-406(b)(ix), 35-11-415(b)(viii), and 35-11-428(a)(iii)(F).

13. Proposed Rule Adoption: Chapter 11, Section 8

Section 8. Requirements for Plugging of Drill Holes and Repair, Conversion, and Plugging of Wells.

This section consolidates requirements from the WQD Rules and Regulations (Section 70 of Part G of Chapter 13) and requirements proposed for adoption from counterpart EPA rules.

Chapter 11, Section 8(a) A plan for drill holes and well repair, plugging, and conversion shall be approved by the Administrator and included in the permit or Research and Development License application, as required by Section 5(a)(iii) of this Chapter, and shall constitute a condition of the permit.

Per 40 CFR 144.51(o), an approved "plugging and abandonment plan" meeting the requirements of 40 CFR 146.10 is considered a permit condition.

Chapter 11, Section ~~2(f)~~ 8(b) ~~All wells and drill holes resulting from in situ mining operations shall be plugged in accordance with Chapter 14 8 of these regulations and W.S. § 35-11-404.~~

Neither Chapter 8 nor W.S. § 35-11-404 address well abandonment; therefore, the term "wells" has been deleted.

Chapter 11 is specifically for in situ mining, so it is redundant to include the phrase "resulting from in situ mining operations."

The reference to Chapter 14 is apparently a remnant from LQD's old combined coal and noncoal rules. The correct reference in the noncoal rules is Chapter 8.

The phrase "of these regulations" is being removed for consistency with other references in this Chapter.

Chapter 11, Section 8(c) If a well lacks mechanical integrity, repair or plugging of the well is required to prevent the movement of fluid into unauthorized zones or onto the surface caused by the lack of mechanical integrity. Repair or plugging of the well must be completed within 120 days of the testing which indicates the well lacks mechanical integrity. If the well is repaired rather than plugged, retesting of the well, in accordance with the requirements of Section 7(a)(ii) of this Chapter must be completed within 120 days after the repair is completed.

As noted in Section 7, an increasing number of injection wells are simply idled once a well fails a Mechanical Integrity Tests (MIT); however, such non-use does not mean that the well cannot serve as a conduit for fluid movement between aquifers. To ensure that

well repairs are completed in a timely manner, the 120-day requirement has been specified in the regulations.

This provision is also intended to ensure compliance with broad requirements for prevention, reduction, and elimination of pollution (e.g., W.S. § 35-11-102) and more specific requirements, such as 40 CFR 144.51(q)(1) which requires that an "owner or operator...maintain mechanical integrity" of a well. The specified time frame is intended to ensure that mechanical integrity problems are promptly addressed while allowing for some flexibility due to weather conditions or other adverse field conditions.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 8(d) <u>The operator shall notify the Administrator, as required by the permit or Research and Development Testing License, before plugging a well or converting it to uses other than those defined in Section 1(c) of this Chapter.</u></p>	<p>40 CFR 144.51(n) The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well....</p>

PROPOSED RULE AMENDMENT	EPA RULE & WQD RULE
<p>Chapter 11, Section 8(e) <u>All abandoned wells shall be plugged or converted, in accordance with the Plugging/Conversion Plan in the permit or Research and Development Testing License, in order to assure that groundwater is protected and preserved for future use and to eliminate any potential physical hazard. A well is considered "abandoned" when it has not been used for a period of one year, unless the operator submits to the Administrator and receives approval for a non-significant revision (Section 19(c)(vi) of this Chapter) demonstrating their intention to use the well again and the actions and procedures they will take to ensure that mechanical integrity of the well are maintained (Section 7(a)(i) of this Chapter) and the well will not endanger Underground Sources of Water in accordance with the requirements of this Chapter.</u></p>	<p>40 CFR 144.52(a)(6) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:</p> <ul style="list-style-type: none"> (i) Provides notice to the Regional Administrator; (ii) Describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator. <p>WQD Rules, Chapter 9, Part G, Section 70(a) All wells that are no longer useful (including test wells) must be plugged in order to assure that groundwater supply is protected and preserved for further use and to eliminate the potential physical</p>

PROPOSED RULE AMENDMENT	EPA RULE & WQD RULE
	<p>hazard. A well is considered "abandoned" when it has not been used for a period of one year, unless the owner demonstrated his intention to use the well again by properly maintaining the well in such a way that:</p> <ul style="list-style-type: none"> (i) The well has no defects which will allow the impairment of quality of water in the well or in the water bearing formations penetrated [See proposed Section 7(a)(iii) of this Chapter]. (ii) The well is covered and the cover is water-tight. (iii) The well is marked so that it can be clearly seen. (iv) The area surrounding the well is kept clear of brush or debris [See proposed Section 4(a)(xxiii).]

The EPA rules require that a well be plugged and abandoned if it has not been used for two years (40 CFR 144.52(a)(6)); however, the WQD rules and regulations (Chapter 9, Part G, Section 70(a)) require that a well be considered abandoned after one year of non-use. Therefore, for consistency within WDEQ regulations, the WQD time frame has been retained.

As noted in the Statement of Reasons for Chapter 11, Section 7(a)(iii) (starting on Page 61, LQD is increasingly concerned about the number of injection wells which are idled as production is cut back or, once an injection well fails a Mechanical Integrity Test (MIT), it is simply no longer actively used as an injection well. These wells may still be useful as production or monitoring wells; however, to ensure adequate groundwater protection, the LQD considers it imperative that the integrity of these wells be maintained and that it be confirmed before the wells are converted from injection wells to production or monitoring wells.

For clarity, the term "further" from the WQD rules was changed to "future" in the proposed rules.

Chapter 11, Section 8(f) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 8(f) <u>A well shall be plugged to meet the requirements below to assure that plugging of the well will not allow the movement of fluids into or between Underground Sources of Water:</u></p> <p>(i) <u>The well shall be plugged with:</u></p> <p>(A) <u>Neat cement grout, sand-cement grout, concrete, or bentonite grout with a permeability of 10^{-7} cm/sec or less. To assure that the well is filled and there has been no bridging of the sealing material, the operator should provide LOD with documentation that the volume of material placed in the well at least equals the volume of the empty hole; or</u></p> <p>(B) <u>Other plugging materials if such materials will prevent movement of fluids into or between underground sources of water and the Administrator approves the use of such materials.</u></p> <p>(ii) <u>The well shall be plugged using a method which will not allow the movement of fluids either into or between underground sources of water. The description of the method will identify:</u></p> <p>(A) <u>The type and number of plugs to be used;</u></p> <p>(B) <u>The placement of each plug including the elevation of the top and the bottom;</u></p> <p>(C) <u>The method of placement of the plugs, in accordance with Section 8(e)(iii); and</u></p> <p>(D) <u>The procedure to be used to meet the requirements of Section 8(e)(iv).</u></p> <p>(iii) <u>Placement of the cement plugs shall be accomplished by one of the following:</u></p> <p>(A) <u>The Balance method;</u></p> <p>(B) <u>The Dump Bailer method;</u></p> <p>(C) <u>The Two-Plug method; or</u></p> <p>(D) <u>An alternative method approved by the Administrator, which:</u></p> <p>(I) <u>Includes placement of cementing materials in the interval or intervals to be sealed by methods that prevent free fall, dilution and/or separation of aggregates from sealing materials; and</u></p> <p>(II) <u>Provides a comparable level of reliable protection to underground sources of water.</u></p>	<p>40 CFR 146.10 Plugging and abandoning Class I-III wells.</p> <p>(a) Prior to abandoning Class III wells the well shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. The Director may allow Class III wells to use other plugging materials if he is satisfied that such materials will prevent movement of fluids into or between underground sources of drinking water.</p> <p>40 CFR 146.34 Information to be considered by the Director....</p> <p>(c) Prior to granting approval for the plugging and abandonment of a Class III well the Director shall consider the following information:</p> <p>(1) The type and number of plugs to be used;</p> <p>(2) The placement of each plug including the elevation of the top and bottom;</p> <p>(3) The type, grade and quantity of cement to be used;</p> <p>(4) The method of placement of the plugs, and</p> <p>(5) The procedure to be used to meet the requirements of §146.10(c).</p> <p>40 CFR 146.10(b) Placement of the cement plugs shall be accomplished by one of the following:</p> <p>(1) The Balance method;</p> <p>(2) The Dump Bailer method;</p> <p>(3) The Two-Plug method; or</p> <p>(4) An alternative method approved by the Director, which will reliably provide a comparable level of protection to underground sources of drinking water.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(iv) The well to be plugged shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Administrator, prior to the placement of the cement plug(s).</u></p> <p><u>(v) When the underground pressure head producing flow (ie. gassy or artesian) is such that a counter-pressure must be applied to force a sealing material into the annular space, this counter-pressure should be maintained for the length of time required for the cementing/sealing mixture to set or fully hydrate.</u></p>	<p>40 CFR 146.10(c) The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).</p>

The requirements from different sections in the EPA rules have been combined.

Subsection 8(f)(i) includes requirements from the WQD Rules and Regulations, Chapter 13, Part G, Section 70(e)(i) and (d)(v). Subsection 8(f)(iii)(d)(II) (from WQD Chapter 13, Part G, Section 70(d)(iii)) is included to address a known concern with alternate methods for placement of cement plugs. Similarly, Subsection 8(f)(v) (from WQD Chapter 13, Part G, Section 70(d)(iv)) is included to address a known concern about plugging flowing wells.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 8(g) <u>In the case of an in situ operation which underlies or is in an aquifer which has been exempted under Section 10 of this Chapter, the Plugging/Conversion Plan in the permit or Research and Development Testing License shall also demonstrate adequate protection of Underground Sources of Water (USWs). The Administrator shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to assure adequate protection of USWs.</u></p>	<p>40 CFR 146.10(d) The plugging and abandonment plan required in 40 CFR 144.52(a)(6) and 144.51(n) shall, in the case of a Class III project which underlies or is in an aquifer which has been exempted under 40 CFR 146.04, also demonstrate adequate protection of USDWs. The Director shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to insure adequate protection of USDWs.</p>

Chapter 11, Section 8(h) The top of the cementing/sealing mixture of any plugged and abandoned well should show clearly, by permanent markings, whether inscribed in the cement or on a steel plate placed atop the sealing mixture, the permit number, well identification number and date of plugging. All markings devices should be installed at a minimum depth of two feet below the land surface.

This subsection is from WQD Chapter 13, Part G, Section 70(f).

Chapter 11, Section 8(i) Plugging and conversion activities shall be reported in accordance with the requirements in Section 15 of this Chapter.

The cross-reference to Section 15 is included to help ensure that the requirements for reporting plugging and conversion activities are not overlooked.

The authority to adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(iv); 35-11-112(a)(i), 35-11-402(a)(vi), 35-11-404(c)(iv), 35-11-406(b)(ix), 35-11-415(b)(viii), and 35-11-428(a)(iii)(F).

14. Proposed Rule Adoption: Chapter 11, Section 9

Section 9. Permit and Research and Development Testing License Conditions

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 9(a) The following conditions shall apply to permits and Research and Development Testing Licenses. Each condition shall be incorporated into the permit or Research and Development Testing License either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit or Research and Development Testing License.</u></p>	<p>40 CFR 144.51 Conditions applicable to all permits. The following conditions apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 9(a)(i) The operator has a duty to comply with all terms and conditions of the approved permit or Research and Development Testing License.</u></p> <p><u>(A) Any permit or Research and Development Testing License noncompliance is grounds for enforcement action and any Research and Development Testing License noncompliance is grounds for denial of a Research and Development Testing License renewal application.</u></p> <p><u>(B) The filing of a request by the operator for a permit or Research and Development Testing License revision per Chapter 7 or Section 19 of this Chapter does not waive any permit or Research and Development Testing License condition.</u></p>	<p>40 CFR 144.51(a) Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit under §144.34.</p> <p>(b) [Not applicable to the Wyoming program]</p> <p>(c) - (e) [See following proposed subsections.]</p> <p>40 CFR 144.51(f) Permit actions...The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. [See 40 CFR 124.5(c)(2) also.]</p>

The CFR may include section headings (e.g., Duty to Comply); in contrast, the LQD Rules and Regulations generally include an introductory phrase or sentence. Therefore, several of the proposed changes in this section are for format consistency.

The last portion of 40 CFR 144.51(a) was not adopted because LQD does not issue emergency permits. Subsection (B) was added to provide a cross-reference between this section and the sections on revisions.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 9(a)(ii) <u>It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit or Research and Development Testing License.</u></p>	<p>40 CFR 144.51(c) <i>Need to halt or reduce activity not a defense.</i> It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 9(a)(iii) <u>The operator has a duty to take all reasonable steps to minimize, mitigate, or correct any adverse impact on the environment resulting from noncompliance with this permit or Research and Development Testing License.</u></p>	<p>40 CFR 144.51(d) <i>Duty to mitigate.</i> The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 9(a)(iv) <u>The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the operator to achieve compliance with the terms and conditions of the permit or Research and Development Testing License. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the terms and conditions of the permit or Research and Development Testing License.</u></p>	<p>40 CFR 144.51(e) <i>Proper operation and maintenance.</i> The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.</p>

PROPOSED RULE ADOPTION	EPA RULE
<u>Chapter 11, Section 9(a)(v) The permit or Research and Development Testing License does not convey any property rights of any sort or any exclusive privilege.</u>	40 CFR 144.35(b) and 40 CFR 144.51(g) <i>Property rights</i> . This permit does not convey any property rights of any sort, or any exclusive privilege.

PROPOSED RULE ADOPTION	EPA RULE
<u>Chapter 11, Section 9(a)(vi) The operator has a duty to provide to the Administrator, within a time specified, any information which the Administrator may request to determine whether cause exists for revising or revoking the permit or Research and Development Testing License, or to determine compliance with this permit or Research and Development Testing License. The operator shall also furnish to the Administrator, upon request, copies of records to be kept as required by the permit or Research and Development Testing License.</u>	40 CFR 144.51(h) <i>Duty to provide information</i> . The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

As discussed in the Statement of Reasons for Sections 19 and 20 of this Chapter, which address Revisions and Revocation, the EPA rules refer to "modification" and "termination" of permits; however, most of the Wyoming Statutes and existing LQD rules refer to "revision" and "revocation" of permits, respectively. Therefore, the terms "revision" and "revocation" has been retained. Also, the EPA rules refer to "revocation and reissuance" of permits. However, the Wyoming Environmental Quality Act does not differentiate between revocation and termination of permits - in either case, a revoked permit would need to be re-issued before mining could resume. Therefore, the EPA rules relating solely to "revocation and reissuance" have not been incorporated into the proposed LQD rules.

Chapter 11, Section 9(a)(vii) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 9(a)(vii) In compliance with all the provisions of Chapter 7 and Section 19 of this Chapter:</u></p> <p><u>(A) The operator shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted or licensed facility and</u></p> <p><u>(B) When the operator becomes aware of failure to submit any relevant facts in a permit or Research and Development Testing License application, or submitted incorrect information in a permit or Research and Development Testing License application or in any report to the Administrator, the operator shall promptly submit such facts or information to the Administrator.</u></p>	<p>40 CFR 144.51(l) Reporting requirements.</p> <p>(1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.</p> <p>(2) [Related to "anticipated noncompliance," which is not a part of the Wyoming program.]</p> <p>(3) [Related to permit transfers, see proposed W.S. § 35-11-408 and proposed Section 19(c).]</p> <p>(4) [Related to monitoring, see proposed Section 14.]</p> <p>(5) [Related to Compliance Schedules, which are not a part of the Wyoming program.]</p> <p>(6) [Related to reporting, see proposed Section 15.]</p> <p>(7) [Related to noncompliance, see proposed Section 12.]</p> <p>(8) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.</p>

Chapter 11, Section 9(a)(viii) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 9(a)(viii) Prior to requesting bond reduction for abandonment of a Class III well or for conversion of a Class III well to another use, the operator shall provide documentation and receive approval from the Administrator regarding the plugging or conversion of that well.</u></p>	<p>40 CFR 144.52(a)(7) Financial responsibility. (i) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until: (A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to §§144.51(o) and 146.10 of this chapter, and submitted a plugging and abandonment report pursuant to §144.51(p); or (B) The well has been converted in compliance with the requirements of §144.51(n); or (C) The transferor of a permit has received notice from the Director that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.</p>

Chapter 11, Section 9(a)(ix) The following shall also constitute conditions of the permit:

- (A) Plans for corrective action, including injection pressure limitation, as specified in Section 13(a) of this Chapter;
- (B) Monitoring requirements as specified in Section 14 of this Chapter;
- (C) Schedule and methods to establish and maintain Mechanical Integrity as specified in Section 7 of this Chapter; and
- (D) A plan for well repairs, plugging, and conversion as specified in Section 8 of this Chapter.

This section is included to provide cross-references to other portions of the rules in which permit terms conditions are discussed.

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(a)(ii), 35-11-112(a)(i), 35-11-405(a), 35-11-415(a), (b)(ii), and (b)(viii), 35-11-426(a), 35-11-427, 35-11-428(a)(i)-(iii), 35-11-429(a)(iv) and (v) and 35-11-801(a).

15. Proposed Rule Adoption: Chapter 11, Section 10

Section 10. Aquifer Classification and Exemption.

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 10(a) Injections from Class III wells shall be restricted to those production zones that:</u></p> <p><u>(i) Have been classified by the Wyoming Department of Environmental Quality as Class V aquifers under Chapter 8 of the Water Quality Division Rules and Regulations (as amended March 12, 1993); and</u></p> <p><u>(ii) Have concentrations of Total Dissolved Solids:</u></p> <p><u>(A) Less than 10,000 milligrams per liter, meet the definition of an "Underground Source of Water" as defined in Section 1 of this Chapter; and have been approved as an exempted aquifer by the U.S. Environmental Protection Agency pursuant to Section 10(b) of this Chapter; or</u></p> <p><u>(B) Greater than 10,000 milligrams per liter; and</u></p> <p><u>(iii) Are located in a geologic and hydrologic setting in which movement of fluid containing any contaminant into Underground Sources of Water can be prevented.</u></p>	<p>40 CFR 144.1(g) <i>Scope of the permit or rule requirement...</i>[N]o injection shall be authorized...if it results in the movement of fluid containing any contaminant into Underground Sources of Drinking Water....The Director may also designate "exempted aquifers" using criteria in §146.04. Such aquifers are those which would otherwise qualify as "underground sources of drinking water" to be protected....No aquifer is an "exempted aquifer" until it has been affirmatively designated under the procedures in §144.7....</p>

The WQD Class V designation depends only on whether the groundwater is "closely associated with commercial deposits of hydrocarbons and/or other minerals...." (WQD Chapter 8, Section 4(d)(viii)). In other words, the Class V designation does not depend on the quality of the groundwater and does not signify that a production zone is not also an Underground Source of Drinking Water. Therefore, an Aquifer Exemption must be obtained for those production zones that also meet the EPA definition of Underground Sources of Drinking Water.

The EPA definition of Underground Source of Drinking Water, and therefore the need for an aquifer exemption, depends on the concentration of Total Dissolved Solids.

The EPA interprets 40 CFR 144.1(g) as also requiring an appropriate geologic and hydrologic setting such that the potential movement of fluids out of the production zone can be adequately controlled.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 10(b) <u>An aquifer, or a portion thereof, which meets the criteria for an Underground Source of Water as defined in Section 1 of this Chapter may be designated as an "exempted aquifer":</u></p> <p>(i) <u>If it meets the following criteria:</u></p> <p>(A) <u>It does not currently serve as a source of water for Class I, II, III, Special (A) or Class IVA uses as described in Chapter 8 of the Water Quality Rules and Regulations (as amended March 12, 1993), and</u></p> <p>(B) <u>It cannot now and will not in the future serve as a source of water because:</u></p> <p>(I) <u>It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit or Research and Development Testing License applicant or operator to contain minerals or hydrocarbons that, considering their quantity and location, are expected to be commercially producible; or</u></p> <p>(II) <u>It is situated at a depth or location which makes recovery of water for Class I, II, III, Special (A) or Class IVA as described in Chapter 8 of the Water Quality Division Rules and Regulations (as amended March 12, 1993) economically or technologically impractical; or</u></p> <p>(III) <u>It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or</u></p> <p>(IV) <u>It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or</u></p> <p>(V) <u>The total dissolved solids content of the groundwater is less than 10,000 mg/l and it is not reasonably expected to supply a public water system as defined by W.S. § 35-11-103(c)(viii); and</u></p> <p>(ii) <u>As demonstrated by information in the permit or Research and Development Testing License application, including:</u></p>	<p>40 CFR 146.4 Criteria for exempted aquifers. An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in §146.3 may be determined under 40 CFR 144.8 to be an "exempted aquifer" if it meets the following criteria:</p> <p>(a) It does not currently serve as a source of drinking water; and</p> <p>(b) It cannot now and will not in the future serve as a source of drinking water because:</p> <p>(1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;</p> <p>(2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;</p> <p>(3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or</p> <p>(4) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or</p> <p>(c) The total dissolved solids content of the groundwater is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.</p> <p>40 CFR 144.7(c)(1) For Class III wells, the Director shall require an applicant for a permit which necessitates an aquifer exemption under</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(A) A map and general description of the receiving strata identifying and describing in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and define the extent of the aquifer proposed for exemption;</u></p> <p><u>(B) General information on the mineralogy and geochemistry of the receiving strata; and</u></p> <p><u>(C) Analysis of the amenability of the receiving strata to the proposed mining method; and a timetable of planned development of the receiving strata.</u></p>	<p>§146.04(b)(1) to furnish the data necessary to demonstrate that the aquifer is expected to be minerals or hydrocarbon producing. Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a timetable of planned development of the receiving strata shall be considered by the Director....</p>

The EPA and WQD classification systems differ in that "drinking water" under the EPA classification is broadly defined to include waters with less than 10,000 mg/l of Total Dissolved Solids. The WQD classification, which is consistent with the EPA requirements for establishment of water quality standards by states (40 CFR 131.10), is based first on use and then on concentrations of specific parameters and is protective of more specific uses, e.g., agricultural and livestock. To ensure that the State concerns are taken into account, the WQD classification has been used in Section 10(b)(i).

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 10(c) <u>A request for an aquifer exemption shall be presented by the Administrator to the EPA as a state program revision pursuant to Code of Federal Regulations, Title 40, Part 145, Section 32 (40 CFR § 145.32 as amended July 1, 2001).</u></p>	<p>40 CFR 144.7(b)(3) Subsequent to program approval or promulgation, the Director may, after notice and opportunity for a public hearing, identify additional exempted aquifers. For approved State programs exemption of aquifers identified (i) under §146.04(b) shall be treated as a program revision under §145.32; (ii) under §146.04(c) shall become final if the State Director submits the exemption in writing to the Administrator and the Administrator has not disapproved the designation within 45 days. Any disapproval by the Administrator shall state the reasons and shall constitute final Agency action for purposes of judicial review.</p>

Aquifer Exemptions are issued by the EPA, and in the past, WQD submitted the request for exemptions in the past. However, under the joint agreement of May 1996 between

LQD and WQD, LQD has assumed the UIC permitting functions for in situ mining (Class III wells), including submittal to EPA of a request for an Aquifer Exemption. The exemption process includes public notice requirements which are addressed in Chapter 11, Section 21.

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-110(ix), 35-11-112(a)(i), 35-11-426(a), and 35-11-428.

16. Proposed Rule Adoption: Chapter 11, Section 11

Section 611. Prohibitions.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 6 11(a) Permittees and licensees shall not inject recovery fluid into any zone or interval other than that described in the approved permit or license. No Class III well construction may commence until a permit or Research and Development Testing License has been issued which includes well construction information in accordance with the requirements of Section 6 of this Chapter. Construction of wells needed to obtain the information required in Section 3 of this Chapter may be allowed with approval of the Administrator; however, such wells may not be used for injection.</p>	<p>40 CFR 144.11 <i>Prohibition of unauthorized injection.</i> Any underground injection, except as authorized by permit or rule issued under the UIC program, is prohibited. The construction of any well required to have a permit is prohibited until the permit has been issued.</p> <p>40 CFR 146.34 Information to be considered by the Director. This section sets forth the information which must be considered by the Director in authorizing Class III wells. Certain maps, cross sections, tabulations of wells within the area of review, and other data may be included in the application by reference provided they are current, readily available to the Director (for example, in the permitting agency's files) and sufficiently identified to be retrieved...</p> <p>(a) Prior to the issuance of a permit for an existing Class III well...or the construction of a new Class III well the Director shall consider the [information in the permit application].</p>

The first sentence of this proposed rule reflects the prohibitions in the EPA rules against installation of any wells before issuance of a UIC permit if those wells are to be used for injection. The second sentence of this proposed rule is a state initiative that allows the operator to install wells to gather information required for the permit or license application, such as water quality, groundwater flow direction, and aquifer characteristics. The second sentence was added by LQD after much discussion with EPA. The purpose is to allow installation of wells needed to gather the necessary baseline information for permit or license approval and the information needed for the EPA aquifer exemption. However, those wells cannot be used for injection.

The flexibility for such an approach was contemplated when Wyoming's UIC program was under development. A memorandum dated May 18, 1983 titled "Digest of Requirements for Wyoming's UIC Program Related to In Situ Mining Operations" (no author) states:

" . . . However, construction and completion of wells may be authorized prior to the issuance of an in situ permit or license, by

issuance of a Water Quality Division permit to construct. The Water Quality Division will issue the permit if the applicant submits a complete and accurate application pursuant to Water Quality Division requirements. The permit to construct will not be authorization to inject. Authorization to inject can only be obtained through a valid Department mining permit or license."

LQD assumed the UIC permitting functions for in situ mining (under the joint agreement of May 1996 between LQD and WQD). Because the LQD does not issue "permits to construct", the requirement for "approval of the Administrator" was added to the proposed rule to ensure that the WDEQ would be aware of the well installation.

Because of the wellfield-by-wellfield development of in situ mines, this restriction on installation of injection wells is not considered unduly onerous and might only be problematic if approval of the first one or two wellfield coincides with permit approval. For example, the initial permit application for most in situ mines will include detailed hydrologic information and mapping of the well layout in only one or two wellfields at most and more general information about other proposed wellfields. In turn, the initial approval is only for the wellfield(s) for which detailed information has been provided, and approval of other wellfields depends on submittal of detailed information for those specific wellfields.

In general, the detailed information is obtained from: the wells in the monitor well ring around a production area (wellfield); monitoring wells in overlying an underlying aquifers, and pumping and monitoring wells within the production area. A multi-day aquifer test is conducted by pumping the wells within the production area to ensure communication with the monitor well ring and no communication with the wells in the overlying and underlying aquifers. Some operators might later propose to use those pumping and monitoring wells in the production area as injection wells. However, that would not be possible under the proposed rule if those pumping wells were constructed before the permit was issued. As this is not generally the case, this provision is not considered unduly burdensome.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 11(b) <u>The operator may not commence injection in a new injection well until construction is complete, and:</u></p> <p><u>(i) The operator has submitted notice of completion of construction to the Administrator;</u> <u>and</u> <u>(ii) With respect to inspection and review:</u></p>	<p>40 CFR 144.51(m). <i>Requirements prior to commencing injection.</i> Except for all new wells authorized by an area permit under §144.33(c), new injection well may not commence injection until construction is complete, and (1) The permittee has submitted notice of completion of construction to the Director; and</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(A) The Administrator has inspected or otherwise reviewed the new injection well and finds the well is in compliance with the permit or Research and Development Testing License; or</u></p> <p><u>(B) The operator has not received notice from the Administrator of the intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (b)(i) of this subsection, in which case prior inspection or review is waived and the operator may commence injection. The Administrator shall include in the notice a reasonable time period in which he or she shall inspect the well.</u></p>	<p>(2)(i) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or</p> <p>(ii) The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (m)(1) of this section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 11(c) The approved permit or Research and Development Testing License shall include maximum injection volumes and/or pressures necessary to assure: fractures are not initiated in the confining zone; injected fluids do not migrate into any Underground Source of Water (USW); and formation fluids are not displaced into any USW. Operating requirements shall, at a minimum, specify that:</u></p> <p><u>(i) Except during well stimulation, injection pressure at the wellhead shall be calculated to assure that the pressure in the production zone during injection does not initiate new fractures or propagate existing fractures. In no case, shall injection pressure initiate fractures in the confining zone, if confinement is present, or cause the migration of injection or formation fluids into a USW;</u></p> <p><u>(ii) Injection between the outermost casing protecting underground sources of water and the well bore is prohibited.</u></p>	<p>40 CFR 144.52(a)(3). <i>Operation requirements</i> ...[T]he permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water....</p> <p>40 CFR 146.33(a). <i>Operating requirements.</i> Operating requirements prescribed shall, at a minimum, specify that:</p> <p>(1) Except during well stimulation, injection pressure at the wellhead shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures. In no case, shall injection pressure initiate fractures in the confining zone or cause the migration of injection or formation fluids into an underground source of drinking water.</p> <p>(2) Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 11(d) No operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection or mining-related activity in a manner that allows the movement of fluid containing any contaminant into zones or intervals other than those zones authorized in the approved permit or Research and Development Testing License. The operator shall have the burden of showing that the requirements of this paragraph are met.</u></p>	<p>40 CFR 144.11 <i>Prohibition of unauthorized injection.</i> Any underground injection, except as authorized by permit or rule issued under the UIC program, is prohibited...</p> <p>40 CFR 144.12 <i>Prohibition of movement of fluid into underground sources of drinking water.</i> (a) No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.</p>

Any unpermitted activity that would potentially jeopardize the waters of the state is expressly prohibited by the Wyoming Environmental Quality Act (W.S. § 35-11-201(a)). The existing LQD regulations only prohibit injection of recovery fluid into any zone or interval other than that described in the approved permit or license; however, this prohibition is too general because other non-injection activities may jeopardize the waters of the state. For example, during mining, well field overproduction could move fluid from a previously contaminated area outside of a wellfield towards that wellfield introducing contamination into areas between the wellfield and the previously contaminated area into the wellfield itself. The proposed rule change incorporates any in situ mining related activities which may result in movement of fluids into unauthorized areas.

The EPA rules refer to primary drinking water standards and adverse impacts to human health; however, Chapter 8 of WQD Rules and Regulations is based first on use and then on concentrations of specific parameters and is protective of more specific uses, e.g., agricultural and livestock. To ensure that the State concerns are taken into account, the a broader approach has been used in Section 11(d).

The authority to adopt these rules is provided by W.S. §§ 35-11-102, 35-11-112(a)(i), 35-11-402(a)(i),(vi),&(xiii), 35-11-426(a), 35-11-427, 35-11-428(a), and 35-11-431(a).

17. Proposed Rule Amendment/Adoption: Chapter 11, Section 12

Section 12. Noncompliance and Excursions.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 2(e) 12(a) The operator shall;</p> <p>(i) Verbally report any confirmed excursion to the Administrator any noncompliance which may endanger public health or the environment, including potential excursions, within 24 hours of the time the operator becomes aware of the occurrence, including:</p> <p>(A) Any monitoring or other information which indicates that any contaminant may cause endangerment to an Underground Source of Water (USW); and</p> <p>(B) Any noncompliance with a permit or Research and Development Testing License or malfunction of the injection system which may cause fluid migration into, or between USWs.</p> <p>(ii) <u>Provide a written report to the Administrator within five days of the operator becoming aware of the noncompliance occurrence. The Administrator of the Land Quality Division will forward one copy to the Administrator of the Water Quality Division. If the noncompliance is:</u></p> <p>(A) <u>Not a potential excursion, the written report shall describe:</u></p> <p>(I) <u>The noncompliance and its cause;</u></p> <p>(II) <u>The period of noncompliance, including exact dates and times;</u></p> <p>(III) <u>If the noncompliance has not been corrected, the anticipated time it is expected to continue; and</u></p> <p>(IV) <u>Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.</u></p> <p>(B) <u>A potential excursion, the written report shall describe:</u></p>	<p>40 CFR 144.51(l)(6). <i>Twenty-four hour reporting.</i> The permittee shall report any noncompliance which may endanger health or the environment, including:</p> <p>(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or</p> <p>(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances [see Section 12(b)].</p> <p>40 CFR 144.51(l)(6)(ii)....A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(I) The location of the excursion, including the monitoring well(s) involved;</u></p> <p><u>(II) The date(s) confirmation samples will be collected in accordance with Section 12(b); and</u></p> <p><u>(III) Interim measures taken to mitigate the impacts of the potential excursion.</u></p>	

Under the joint agreement of May 1996 between LQD and WQD, LQD has assumed the UIC permitting functions for in situ mining (Class III wells). Therefore, it is not necessary for the operator to send information to both LQD and WQD. However, to ensure that both divisions are aware of groundwater conditions related to underground injection activities, LQD will forward a copy of the noncompliance report to WQD.

The EPA regulations refer primarily to "noncompliance," while the existing LQD regulations refer primarily to "excursions," which are essentially one type of noncompliance. Therefore, the proposed regulations incorporate the broader EPA concerns and the more specific LQD concerns. In particular, there is an aspect of excursion monitoring and reporting for which additional explanation is helpful, specifically why the excursion monitoring and reporting process differs in some respects from the noncompliance monitoring and reporting process.

The excursion monitoring process can result in "false positives," i.e., indication of an excursion when, in fact, there may not be an excursion. Therefore, excursion confirmation follows initial excursion detection. (The confirmation process is outlined below.) To comply with EPA notification requirements, the proposed rules include verbal reporting of potential excursions within 24 hours. However, in recognition of the excursion confirmation process, the initial written notification is simplified in the proposed rules, with additional detail provided if the excursion is confirmed, as outlined below. (An analogy for the initial excursion reporting requirement would be spill reporting, which includes verbal and written notification.)

Chapter 11, Section 2(e)12(b) "Confirmation" of an excursion means that an excursion detected in a regularly scheduled sampling event is subsequently detected in a second or third sampling event conducted in accordance with the following requirements:

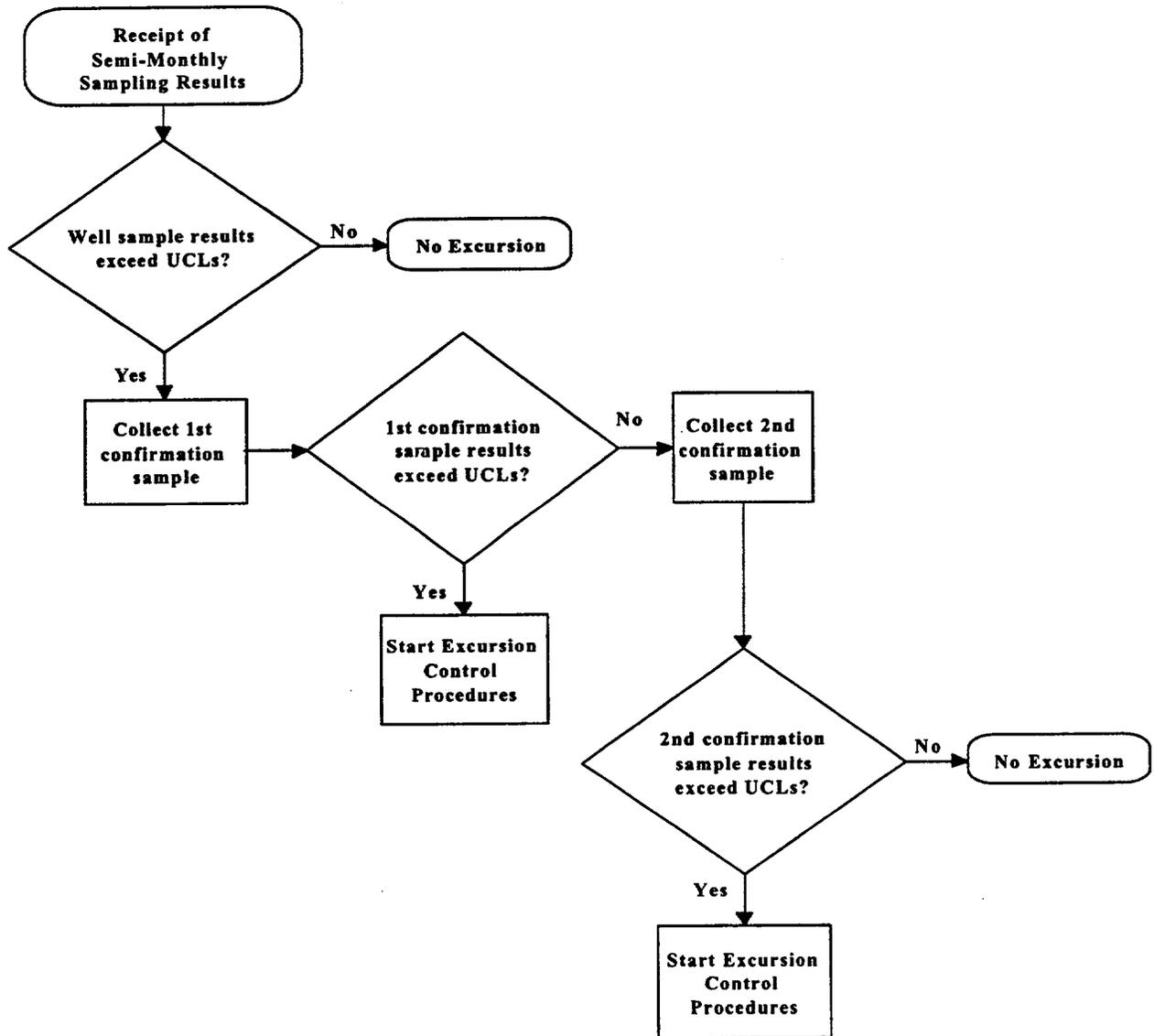
(i) The second sampling event shall be conducted within 24 hours of the receipt of the results from the first sampling event in which the excursion was initially detected. If the results from the first and second sampling event both indicate an excursion has occurred, then the excursion will be considered confirmed for the purpose of meeting the reporting requirements of W.S. § 35-11-429(a).

(ii) If the results from the first and second sampling events provide conflicting information about whether or not an excursion has occurred, then a third sampling event must be conducted within 24 hours of the receipt of the results from the second sampling event. However, if the results of the confirmatory sampling are not complete within 30 days of the initial sampling event which indicated an excursion might be present, then the excursion will be considered confirmed for the purpose of meeting the reporting requirements of W.S. § 35-11-429(a).

In essence, for an excursion in a monitoring well to be confirmed, the results from two out of three samples from that well must exceed the Upper Control Limit(s) set in the permit for a specified parameter (or set of parameters). The flowchart (Figure 4) shown below for the confirmation process begins with the operator's receipt of the result from the regularly scheduled (semi-monthly) "detection" sampling. That result is compared with the UCL and, if the UCL is exceeded, then an initial "confirmation" sample is collected. If the result from that initial confirmation sample also exceeds the UCL, then an excursion has been "confirmed." However, if the result from the initial confirmation sample does not exceed the UCL (i.e., if it contradicts the detection sampling result), then a second confirmation sample is collected. If the result from the second confirmation sample exceeds the UCL, then an excursion has been "confirmed."

Because of the times required for transporting samples, completing laboratory analyses, and related activities, the initial laboratory result indicating a possible excursion may not be obtained by an operator for several days after sample collection, and the result of the confirmation sampling may not be obtained for several days after the result from the initial sampling is acted upon. To alleviate concerns that confirmation of excursions will not be inordinately delayed because of sampling and analysis times (i.e., so the confirmation process is not "open-ended"), a time frame has been added in Section 12(b)(ii) above.

Flowchart (Figure 4) on next page...



**Figure 4
Excursion Confirmation**

Chapter 11, Section ~~2(e)~~12(c) The operator shall:

(i) ~~v~~Verbally report any confirmed excursion to the Administrator within 24 hours of confirmation of the excursion; and;

(ii) ~~s~~Submit ~~within seven days thereafter~~ a written report to the ~~Administrators of the Land Quality Division and the Water Quality Division~~ within five days of the confirmation of the excursion detailing the procedures for mitigating or controlling the excursion. The Administrator of the Land Quality Division will forward one copy to the Administrator of the Water Quality Division.

During the November 1998 EQC hearing, the Wyoming Mining Association requested that the requirement to submit a report within five days be revised to reflect five "working" days. However, the EPA regulations do not make allowance for "working" days." Therefore, to parallel the EPA noncompliance reporting requirements, the LQD regulations include the five-day time frame.

Under the joint agreement of May 1996 between LQD and WQD, LQD has assumed the UIC permitting functions for in situ mining (Class III wells). Therefore, it is not necessary for the operator to send information to both LQD and WQD. However, to ensure that both divisions are aware of groundwater conditions related to underground injection activities, LQD will forward a copy of the noncompliance report to WQD.

Chapter 11, Section ~~2(e cont'd)~~ 12(d) ~~The Administrator of the Land Quality Division may after consultation with the Director and Administrator of the Water Quality Division, terminate or modify the mining operation if an excursion is not controlled within 60 days following the confirmation of the excursion. An excursion is controlled when the movement of recovery fluid out of the production zone and into unauthorized areas has ceased~~ it can be demonstrated through water quality and groundwater gradient or if applicable, pressure measurements, that recovery fluid in unauthorized areas is declining.

(i) If an excursion is not controlled within 30 days following confirmation of the excursion, a sample must be collected from each of the affected monitoring wells and analyzed for the following parameters: Ammonia; Antimony; Arsenic; Barium; Beryllium; Bicarbonate; Boron; Cadmium; Calcium; Carbonate; Chloride; Chromium; Conductivity; Copper; Fluoride; Gross Alpha; Gross Beta; Iron; Lead; Magnesium; Manganese; Mercury; Molybdenum; Nitrate; Nitrate + Nitrite; pH; Potassium; Selenium; Sodium; Sulfate; Radium-226 and 228; Thallium; Total Dissolved Solids; Uranium; Vanadium; and Zinc.

(ii) If an excursion is not controlled within 60 days following the confirmation of the excursion, the Administrator of the Land Quality Division may, after consultation with the Director and Administrator of the Water Quality Division, terminate or modify the mining operation and revoke the permit or Research and Development Testing License or modify the mining operation and require modification of the permit or Research and Development Testing License. Modifying the operation may include: sampling of

additional wells for the parameters listed in Section 12(d)(i); installation of additional monitor wells; termination of injection in the portion of the well field in which the excursion originated; or a combination of approaches to assure control within the necessary time frames.

(iii) If the excursion is controlled, but the fluid which moved out of the production zone during the excursion has not been recovered within 60 days following confirmation of the excursion (i.e., the monitor well is still "on excursion"), the operator will submit, within 90 days following confirmation of the excursion, a plan and compliance schedule, acceptable to the Department, for bringing the well (or wells) off excursion. The plan and compliance schedule can be submitted as part of the monthly excursion report required in Section 12(e) of this Chapter. The compliance schedule shall meet the requirements of Section 13(b) of this Chapter.

The proposed Section 12(d) is based on the latter portion of the existing Section 2(e) but has been rearranged to follow the potential sequence of events during an excursion and augmented to incorporate EPA requirements. The definition of "control" of an excursion is included first, as none of the latter portions of this section are needed once the LQD has agreed that an excursion is controlled. The proposed language in the definition and the following subsections is intended to help answer some of the questions asked of LQD about excursion control, including the criteria used by LQD to determine excursion control.

PROPOSED SECTION 12(d)(i)

The proposed rule codifies the provision in LQD's Guideline 4 (which is current industry practice) and addresses EPA requirements in 40 CFR 144.12 on movement of contaminated fluids into Underground Sources of Drinking Water. The last sentence of Guideline 4, Section III.C.5.c (Page 19) indicates that, if an "excursion lasts longer than 30 days, a suite of samples should be analyzed for Guideline 8 parameters." However, the Guideline 8 parameters do not include all of the parameters of concern to EPA, specifically the Inorganic Parameters for which the EPA has established Maximum Concentration Limits (MCLs), several of which could be mobilized by the in situ mining process. Therefore, the list has been expanded to include those parameters as well. (The specific parameters are: Antimony; Barium; Beryllium; Copper; Lead; Mercury; Nitrate; and Thallium. Sampling and analytical techniques for these parameters are similar to those for the Guideline 8 parameters.) The correlation of the LQD and EPA sampling requirements is discussed in more detail at the end of the Statement of Reasons for this section.

PROPOSED SECTION 12(d)(ii)

The sentence regarding the forwarding of one copy to the Administrator of the WQD has been added because of the joint agreement between WQD and LQD. As part of this agreement, signed in 1996, the Administrator of the Water Quality Division no longer needs to be consulted regarding an excursion. As a courtesy and as part of the

agreement, LQD will forward the copy of the excursion report to WQD.

Another change in this section is to coordinate the LQD and EPA requirements. The Wyoming Statutes (W.S. § 35-11-429(a)(ii)) and existing regulations (Chapter 11, Section 2(e)) refer to termination and modification of the mining operation, while EPA regulations refer to revocation or modification of the permit (40 CFR 144.39(b)(1) and 144.40(a)(1)). To ensure that both the 'on the ground' and 'on paper' concerns are met, the LQD and EPA requirements have been combined.

PROPOSED SECTION 12(d)(iii)

During the November 1998 EQC hearing, the Wyoming Mining Association requested that the proposed requirement for submittal of a plan and schedule (Section 12(c)(iii)) be deleted as the requirement was over and above EPA requirements. However, additional reporting or other actions can be required by the Administrator under the EPA regulations (40 CFR 144.12(b)), and the EPA considers compliance schedules an important option for the corrective action process (40 CFR 144.55). The purpose of the requirement for submittal of a plan and compliance schedule is to help standardize the excursion reporting process and is considered necessary because of instances in which wells have remained on excursion long after the excursion was controlled but not eliminated.

CORRELATION OF THE LQD AND EPA SAMPLING REQUIREMENTS

The LQD relies on sampling of 'indicator' parameters, specifically the parameters for which Upper Control Limits have been set, to detect the initial phases of an excursion. These parameters are selected on the basis of the lixiviant in use, the relative mobility of the parameters, and the fact that the concentrations of these parameters need to change before any of the parameters of greater concern (e.g., uranium and selenium) are mobilized. The different rates of movement of various chemical species and the factors which contribute to the differences are discussed in more detail in several groundwater hydrology texts (e.g., Freeze, R.A. & J.A. Cherry, Groundwater, Prentice-Hall, Inc., 1979, and J. Bear, Hydraulics of Groundwater, McGraw-Hill, Inc., 1979), and the following figure (Figure 5) illustrates the concept.

Time X

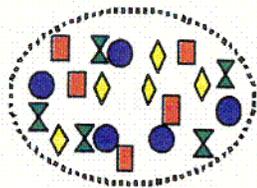
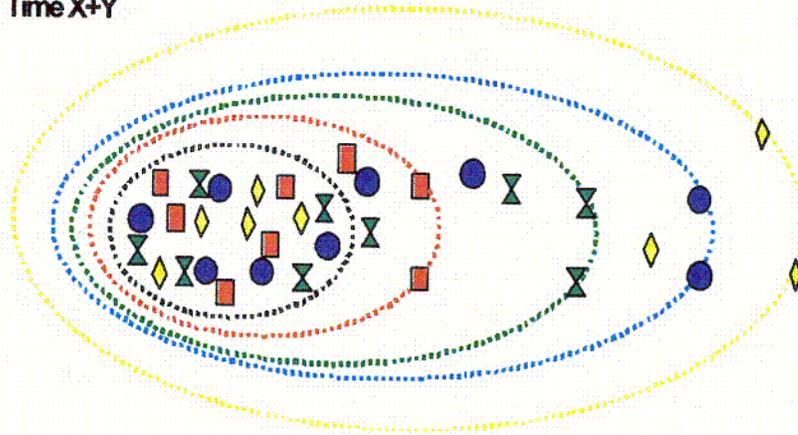


Illustration of Different Rates of Chemical Species Movement

(continuing source)

- ◆ Chloride
- Sodium
- △ Radium
- Uranium

Time X+Y



Ground Water Flow Direction

Figure 5

Once an excursion occurs, i.e. once the Upper Control Limits established in the permit have been exceeded, then the length of the excursion becomes critical. If it is quickly controlled, then the parameters of greater concern do not have sufficient time to migrate outside of the monitoring well ring. However, if the excursion is not adequately controlled or the fluid which moved out of the production area has not been recovered, then sampling for the parameters of greater concern is needed to determine if, and to what extent, those parameters have migrated outside of the production area.

In all instances, movement of fluid outside the monitor well ring is of concern to LQD. In many cases, the monitor well ring is also the only monitoring point between the production area and the extent of the exempted portion of the aquifer (Figures 6 and 7 below). In these instances, the concentrations of the parameters of concern to EPA

must also be taken into consideration because of the potential to impact areas outside the exempted portion of an aquifer.

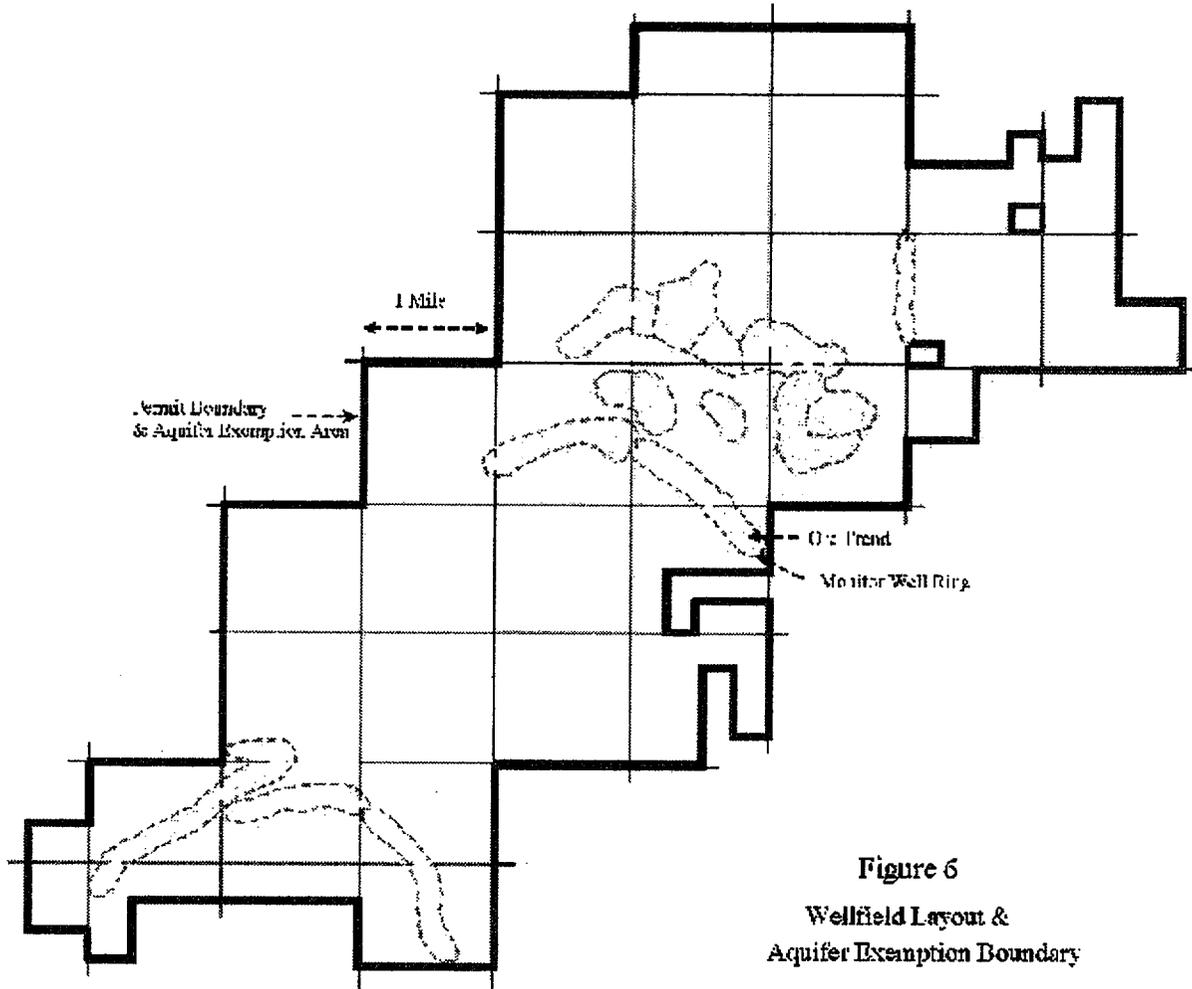


Figure 6
Wellfield Layout &
Aquifer Exemption Boundary

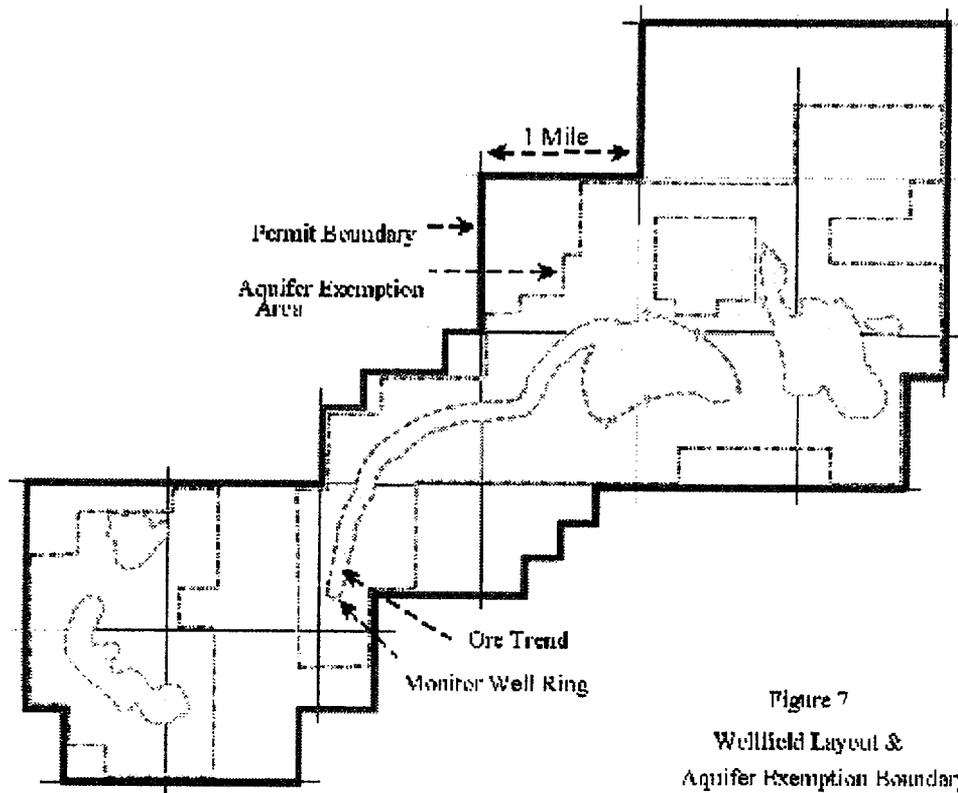


Figure 7
Wellfield Layout &
Aquifer Exemption Boundary

Chapter 11, Section 2(e) 12(e) In addition to the excursion notifications and control plan required above, a monthly report on the status of an excursion shall be submitted to the Administrator beginning the first month the excursion is confirmed and continuing until that excursion is over. The monthly report shall be a requirement of the compliance schedule and shall include, at a minimum:

(i) Concentrations of UCL parameters and groundwater elevations in all monitoring wells on excursion and, as necessary, surrounding wells;

(ii) Such information deemed necessary by the Administrator to show that the excursion is being controlled and that the bond amount for groundwater restoration remains sufficient;

(iii) Information on steps taken to control the excursion.

The purpose of the requirement for submittal of a monthly status report is to help standardize the excursion reporting process, which is considered necessary because of the variety of reporting schedules currently used by operators. At the November 1998 EQC hearing, the Wyoming Mining Association commented that monthly reporting "exceeds EPA requirements." However, two provisions in the EPA rules (40 CFR 144.12(b) and 40 CFR 144.54) allow for more frequent reporting than quarterly reporting:

40 CFR 144.12(b) - "For Class I, II and III wells, if any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized under part 146, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with §144.39, or the permit may be terminated under §144.40 if cause exists, or appropriate enforcement action may be taken if the permit has been violated."

40 CFR 144.54(c) - "Applicable reporting requirements based upon the impact of the regulated activity and as specified in part 146..."

Given the potential contaminant travel times if a wellfield is out of balance, the LQD considers a monthly status report essential until the operator can demonstrate that an excursion has been controlled and that the impacts of the excursion have been removed or that a less frequent reporting schedule is adequate.

In Section 12(e), both the terms "concentrations" and "values" are used in recognition of the fact that UCLs for some types of mining (e.g., trona) depend on other monitoring other than groundwater monitoring, e.g., pressure changes.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 12(f) <u>The operator shall report all instances of noncompliance, not reported under this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Sections 12(a)(i) and (ii), as applicable.</u></p>	<p>40 CFR 144.51(l)(7) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (l) (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (l)(6) of this section.</p>

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(a)(ii), 35-11-112(a)(i), 35-11-402(a)(i), (vi), & (xiii), 35-11-403(a)(iv), 35-11-426(a), 35-11-427, 35-11-428(a)(iii)(F) & (J), 35-11-429(a)(i) & (ii), 35-11-431(a)(vii), and 35-11-433(a).

18. Proposed Rule Adoption: Chapter 11, Section 13

Section 13. Corrective Actions and Compliance Schedules.

The EPA has codified many of the procedures which the LQD and industry already follow when problems are encountered, such as development of a schedule of actions to be taken to address well repairs. The proposed language in this section simply codifies those procedures in the State program.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 13(a) Corrective actions are:</p> <p><u>(i) Needed when a well is improperly sealed, completed, or abandoned, in which case:</u></p> <p><u>(A) Operators shall provide the well information, as required in Sections 3(a)(xi) and (xii) of this Chapter, and the corrective action plan as required in Section 4(a)(xviii) of this Chapter. Where the Administrator's review of the plan indicates that the operator's plan is inadequate (based on the factors presented below), the Director shall require the operator to revise the plan, prescribe a plan for corrective action as a term and condition of the permit, or deny the application.</u></p> <p><u>(B) In determining the adequacy of corrective action proposed by the operator and in determining the additional steps needed to prevent fluid movement into Underground Sources of Water, the following criteria and factors shall be considered by the Administrator:</u></p> <p><u>(I) Nature and volume of injected fluid;</u></p> <p><u>(II) Nature and volume of native groundwater;</u></p>	<p>40 CFR 144.55 Corrective Action</p> <p>(a) Coverage. Applicants for Class...III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone...For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in §146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition for the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of §146.06 (Area of Review) and §146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.</p> <p>40 CFR 146.7 Corrective action. In determining the adequacy of corrective action proposed by the applicant under 40 CFR 144.55 and in determining the additional steps needed to prevent fluid movement into underground sources of drinking water, the following criteria and factors shall be considered by the Director:</p> <p>(a) Nature and volume of injected fluid;</p> <p>(b) Nature of native fluids or by-products of injection;</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(III) Compatibility of injected fluid and native groundwater;</u></p> <p><u>(IV) Potentially affected population;</u></p> <p><u>(V) Geology;</u></p> <p><u>(VI) Hydrology;</u></p> <p><u>(VII) Proposed method of operation as required by Section 4(a)(x) of this Chapter or history of the injection operation if the corrective action is needed in response to amending new wells into an existing operation;</u></p> <p><u>(VIII) Completion and plugging records;</u></p> <p><u>(IX) Plugging procedures in effect at the time the well was abandoned; and</u></p> <p><u>(X) Hydraulic connections with Underground Sources of Water.</u></p> <p><u>(ii) Needed if any water quality monitoring of an Underground Source of Water indicates the movement of any contaminant into an Underground Source of Water, except as specifically authorized in the approved permit or Research and Development Testing License, in which case, the Administrator shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well and limitation of injection pressure) as are necessary to prevent such movement. These additional requirements shall be imposed by requiring the operator to revise the permit or Research and Development Testing License, the permit or Research and Development Testing License may be revoked, or appropriate enforcement action may be taken if the permit or Research and Development Testing License has been violated.</u></p>	<p>(c) Potentially affected population;</p> <p>(d) Geology;</p> <p>(e) Hydrology;</p> <p>(f) History of the injection operation;</p> <p>(g) Completion and plugging records;</p> <p>(h) Abandonment procedures in effect at the time the well was abandoned; and</p> <p>(i) Hydraulic connections with underground sources of drinking water.</p> <p>40 CFR 144.12 Prohibition of movement of fluid into underground sources of drinking water.</p> <p>(a) [See proposed Section 11 on Prohibitions.]</p> <p>(b) For Class...III wells, if any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized under part 146, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with §144.39, or the permit may be terminated under §144.40 if cause exists, or appropriate enforcement action may be taken if the permit has been violated....</p> <p>40 CFR 144.55(b)(3) Injection pressure limitation. The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 13(a)(iii) <u>The status of corrective action on defective wells shall be reported in accordance with the requirements of Section 15 of this Chapter.</u></p>	<p>pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.</p>

This proposed Section 13(a) combines requirements related to corrective actions from different portion of the EPA rules, including 40 CFR 144.12, 40 CFR 144.55, and 40 CFR 146.7. For example, for simplicity, the limitation of injection pressure as a corrective action (40 CFR 144.55(b)(3)) was incorporated into the list of other potential corrective actions that may be required.

In the proposed Section 13(a)(i)(A), Section 3 of the proposed rules is referenced because the requirement for identification of well locations (40 CFR 144.55(a)) was included in that section along with other requirements for identification of well locations. Similarly, the proposed Section 4 is referenced because the requirement for submittal of a corrective action plan (40 CFR 144.55(a)) was included in that section along with other requirements for plans, procedures, and schedules.

In the proposed Section 13(a)(i)(B), Subsections (a) and (b) from 40 CFR 146.7 ("Nature and volume of injected fluid" and "Nature of native fluids or by-products of injection") were split into Subsections (I), (II), and (III). This was done to highlight the fact that the properties of the individual components (i.e., injected fluid and native groundwater) as well as the properties of their combination are of concern, e.g., to ensure a precipitate does not form.

Also, the proposed Subsection 13(a)(i)(B)(VII) (from 40 CFR 146.7(F) ("History of the injection operation")) was expanded to include both proposed and historic operations as corrective action may be needed before operations begin, as well as during operations. In the proposed Subsection 13(a)(i)(B)(IX), the term "plugging procedures" was used instead of "abandonment procedures" because the plugging procedures are generally of most concern to ensure adequate downhole seals.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 13(b) <u>When appropriate, a permit or license may include, or be revised to include, a compliance schedule leading to compliance with the applicable statutes and regulations. The schedule shall be applicable whether the operator is continuing or ceasing regulated activities.</u></p> <p>(i) <u>Any compliance schedule shall require compliance as soon as possible, and in no case later than 3 years after the date the schedule is put into effect. In addition:</u></p> <p style="padding-left: 40px;">(A) <u>The schedule shall set forth interim requirements, the dates for their achievement, and a projected date of compliance with all the requirements;</u></p> <p style="padding-left: 40px;">(B) <u>The time between interim dates shall not exceed 1 year, and</u></p> <p style="padding-left: 40px;">(C) <u>The schedule shall specify dates for the submission of progress reports, no later than 30 days following each interim date and the final date of compliance.</u></p>	<p>40 CFR 144.53 Schedule of Compliance.</p> <p>(a) General. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the SDWA and parts 144, 145, 148, and 124.</p> <p style="padding-left: 40px;">(1) Time for compliance. Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.</p> <p style="padding-left: 40px;">(2) Interim dates. Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.</p> <p style="padding-left: 80px;">(i) The time between interim dates shall not exceed 1 year.</p> <p style="padding-left: 80px;">(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages from completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.</p> <p style="padding-left: 40px;">(3) Reporting. The permit shall be written to require that if paragraph (a)(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.</p>

The EPA considers compliance schedules applicable in three situations. Based on the physical and regulatory setting in Wyoming and the LQD's experience to date, only two situations are anticipated in which compliance schedules would be applicable in Wyoming. Therefore, the proposed rules are somewhat shorter than the EPA rules. The situations addressed by the EPA and by the proposed LQD rules are outlined below. In addition, there are some specific differences between the provisions for compliance schedules in the EPA rules and the proposed LQD rules. Those differences are also outlined below.

SITUATIONS IN WHICH COMPLIANCE SCHEDULES MAY BE APPLICABLE

The EPA rules envision use of compliance schedules in three situations: (1) when new rules are enacted; (2) during noncompliance or excursions; and (3) for completing corrective action before a permit is issued. The LQD considers that compliance schedules might be applicable in either of the first two situations, but not the third.

To address the situation when new rules are enacted, the LQD has proposed the change to Chapter 11, Section 2(e) (operators need to demonstrate compliance with new regulations within one year of the effective date of the regulations). To ensure that EPA concerns are addressed should an operator fail to demonstrate compliance within one year, the provision for a compliance schedule has also been proposed. The proposed provision for a compliance schedule also addresses EPA concerns for available options during noncompliance or excursions (Section 12(d)(3)). Because the LQD believes it cannot issue a permit in situations where corrective action is needed, provisions for compliance schedules in such situations have not been considered appropriate.

With respect to the proposed Section 13(b)(i), it is LQD's understanding that the EPA considers the "effective date" to apply to both initial permit approvals and modifications.

DIFFERENCES BETWEEN EPA AND PROPOSED LQD USES OF COMPLIANCE SCHEDULES

In 40 CFR 144.53(a)(2)(ii), an option is provided for an interim date in excess of one year. Such a lengthy time period between interim dates is not considered appropriate for the compliance issues of concern in Wyoming, e.g., looking at rates of change in water quality in response to remedial actions; therefore this option is not provided in the proposed rules.

The EPA rule in 40 CFR 144.53(b), which allows for alternate schedules if an operator decides to cease conducting regulated activities, is not considered applicable in Wyoming. If an operator ceases activities before the permit terms and conditions remain in place and a permit revision is considered necessary.

The authority to adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(a)(ii), 35-11-112(a)(i), 35-11-402(a)(i),(vi),&(xiii), 35-11-403(a)(iv), 35-11-426(a), 35-11-428(a)(iii)(F)&(J), and 35-11-431(a)(vii).

19. Proposed Rule Amendment/Adoption: Chapter 11, Section 14

Section 14. Monitoring Requirements.

~~Chapter 11, Section 3(c)(xv)14(a) Details of a program to~~ A detailed monitoring program shall be approved by the Administrator and included in the permit or Research and Development Testing License application, as required by Section 4(a)(xvi) of this Chapter, and shall constitute a condition of the permit. The program shall describe the procedures for monitoring the quantity and quality of waters that may be affected by the operation from premining before mining through release of bond; reclamation including a description of procedures and time schedules used to confirm excursions and shall, at a minimum, specify:

Per 40 CFR 144.52(a)(5), the monitoring and reporting requirements are considered permit conditions.

The phrases "premining" and "release of bond" were changed to the more commonly used phrases "before mining" and "reclamation", respectively.

For clarity, the requirements for excursion monitoring have been moved to a separate subsection below.

PROPOSED RULE AMENDMENT	EPA RULE
<p>Chapter 11, Section 14(a)(i) Requirements for: <u>(A) The proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);</u></p> <p><u>(B) The intervals and frequency of monitoring, sufficient to yield data which are representative of the monitored activity, including continuous monitoring when appropriate;</u></p> <p><u>(C) Tests and methods used to generate monitoring data.</u></p>	<p>40 CFR 144.54 Requirements for recording and reporting of monitoring results. All permits shall specify: (a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate); (b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;....</p> <p>40 CFR 144.52 Establishing permit conditions. (a)(5) Monitoring and reporting requirements as set forth in 40 CFR part 156. The permittee shall be required to identify types of tests and methods used to generate the monitoring data.....</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 14(a)(ii) Monitoring of:</p> <p>(A) <u>The nature of the injected fluids with sufficient frequency, and at least monthly, to yield representative data on the characteristics of the fluid. Whenever the injection fluid is modified to the extent that the previous analysis is incorrect or incomplete, a new analysis shall be provided to the Administrator.</u></p> <p>(B) <u>The injection pressure and either flow rate or volume at least weekly or metering and daily recording of injected and produced fluid volumes as appropriate; and</u></p> <p>(C) <u>Class III injection wells may be monitored for the parameters required by subsections (A) and (B) on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well operating with a common manifold. Separate monitoring systems for each well are not required provided the operator demonstrates that manifold monitoring of injection pressure is comparable to individual well monitoring.</u></p>	<p>40 CFR146.33 Operating, monitoring, and reporting requirements.</p> <p>(b) <i>Monitoring requirements.</i> Monitoring requirements shall, at a minimum, specify:...</p> <p>(1) Monitoring of the nature of injected fluids with sufficient frequency to yield representative data on its characteristics. Whenever the injection fluid is modified to the extent that the analysis required by §146.34(a)(7)(iii) is incorrect or incomplete, a new analysis as required by §146.34(a)(7)(iii) shall be provided to the Director.</p> <p>(2) Monitoring of injection pressure and either flow rate or volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate....</p> <p>(6) All Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner/operator demonstrates that manifold monitoring is comparable to individual well monitoring.</p>

A minimum sampling frequency (monthly) is included to give operators some guidance as to what the LQD considers to be a minimum acceptable frequency. This frequency is based on the LQD staff's understanding of current industry practice and practical considerations for sample collection and reporting.

A more frequent monitoring schedule is proposed in Section 14(a)(ii)(B) than is required in 40 CFR 146.33(b)(2) for several reasons. Experience has shown that more frequent monitoring is necessary to ensure efficient and effective resource recovery, as well as environmental protection, and current industry standards reflect more frequent monitoring.

Chapter 11, Section 14(a)(iii) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section <u>14(a)(iii)</u> Requirements for: (A) <u>Semi-monthly monitoring of the fluid level in the production zone, where appropriate;</u> (B) <u>Semi-monthly monitoring of the water levels and parameters chosen to measure the water quality in monitoring wells;</u> (C) <u>Quarterly monitoring of the water levels and parameters chosen to detect any movement of injected fluids, process by-products, or formation fluids in the monitoring wells where the injection wells penetrate an Underground Source of Water in an area subject to subsidence or catastrophic collapse (Section 6(g)(iii) of this Chapter); and</u> (D) <u>Periodic monitoring of pressure changes or other physical parameters if such monitoring provides for more rapid detection of excursions.</u></p>	<p>40 CFR146.33 Operating, monitoring, and reporting requirements. (b) <i>Monitoring requirements.</i> Monitoring requirements shall, at a minimum, specify... (4) Monitoring of the fluid level in the injection zone semi-monthly, where appropriate and monitoring of the parameters chosen to measure water quality in the monitoring wells required by §146.32(e), semi-monthly. (5) Quarterly monitoring of wells required by §146.32(g). [40 CFR 146.32(g) is related to wells required in areas "subject to subsidence or catastrophic collapse," see proposed Section 6(g)(iii).]</p>

Monitoring of water levels is routinely done whenever water quality samples are collected; therefore, for completeness, the phrase "water levels" has been added in Sections 14(a)(iii)(B)&(C).

Section 14(a)(iii)(D) was added in recognition that not all in situ operations rely on ground water monitoring for excursion detection (e.g., pressure changes to detect excursions during trona mining.)

Chapter 11, Section ~~3(c)(xv)~~14(a)(iv) ~~Details of a program to monitor the quantity and quality of waters that may be affected by the operation from premining through release of bond, including a Δ description of procedures and time schedules used to:~~

- (A) Detect and confirm excursions; and**
- (B) Monitor excursions and excursion control efforts.**

The phrase "to detect" was added to ensure that the permit included discussion of how the monitoring information will be used to detect excursions, such as comparison of water quality data with Upper Control Limits.

Subsection 14(a)(iv)(B) was added to ensure that, although specific monitoring will depend on the type and extent of the excursion, general considerations, such as increased sampling frequency, are described.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section <u>14(a)(v)</u> <u>Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.</u></p>	<p>40 CFR 144.51 Conditions applicable to all permits. (j) Monitoring and records. (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.</p>

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(a)(iv), 35-11-112(a)(i), 35-11-426(a), 35-11-428(a)(iii)(F), and 35-11-431(a)(ii)&(vii).

20. Proposed Rule Amendment/Adoption: Chapter 11, Section 15

Section 715. Maintenance of Records and Chemical Analysis Reporting Requirements.

Section 7 currently includes requirements related to both Reporting (Chemical Analysis) and Maintenance of Records. Those requirements related to Reporting have been moved to this proposed section and combined with EPA requirements on Reporting. Those requirements related to Maintenance of Records have been moved to proposed Section 16.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 715(a) The operator shall maintain records at the mine site in accordance with W.S. § 35-11-430(b) and <u>All</u> chemical analyses submitted to the Administrator in accordance with a valid permit or Research and Development License shall include:</p> <p>(i) A description of, or reference for, the procedures and methods used for sample collection, preservation, and quality control;</p> <p>(ii) The name, address, and telephone number of the laboratory performing the analyses, <u>and</u> the laboratory job identification number and the date the analyses were performed; <u>and</u></p> <p><u>(iii) Signatures as required by Section 2(g) of this Chapter.</u></p>	<p>40 CFR 144.51 Permit conditions applicable to all permits.</p> <p>(j) <i>Monitoring and records.</i></p> <p>(3) Records of monitoring information shall include:</p> <p>(i) The date, exact place, and time of sampling or measurements; [see W.S. § 35-11-430(b)(i)]</p> <p>(ii) The individual(s) who performed the sampling or measurements; [see W.S. § 35-11-430(b)(i)]</p> <p>(iii) The date(s) analyses were performed; [see W.S. § 35-11-430(b)(ii)]</p> <p>(iv) The individual(s) who performed the analyses; [see W.S. § 35-11-430(b)(ii)]</p> <p>(v) The analytical techniques or methods used; and [see W.S. § 35-11-430(b)(iii)]</p> <p>(vi) The results of such analyses. [see W.S. § 35-11-430(b)(iv)]</p> <p>40 CFR 144.32 Signatories to permit applications and reports.</p> <p>(a) <i>Applications.</i> [See Section 2(h) of this Chapter.]</p> <p>(b) <i>Reports.</i> All reports required by permits, other information requested by the Director, and all permit applications submitted for Class II wells under §144.31 shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person....</p>

The first part of the existing Section 7 (maintenance of records) has been moved to the proposed Section 16, which is titled Maintenance of Records.

The existing rule includes requirements for submittal of sampling protocols and laboratory information, and those requirements have been retained because this information is considered essential in determining whether a sample is representative and to ensure the objectives of the statutory requirements in W.S. § 35-11-430(b) are met. W.S. § 35-11-430(b) reads:

"The operator shall maintain records at the mine site of all information resulting from monitoring activities required in the permit. The records shall state:

- (i) The date, place, time and method of sampling and the personnel responsible for sampling;*
- (ii) The date on which analysis was performed and the personnel who performed the analysis;*
- (iii) Analytical techniques used; and*
- (iv) The results of the analysis."*

The requirement in the existing rule for submittal of the analytical date is already in W.S. § 35-11-430(b), so that requirement has been deleted from the rule. The term "job" has been replaced with "laboratory" to better conform to the record keeping system used by laboratories.

Chapter 11, Section 15(b) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 15(b) Quarterly monitoring reports shall include, at a minimum:</p> <p>(i) <u>The results of monitoring required per Sections 14(a)(ii) and (iii) of this Chapter.</u></p> <p>(ii) <u>The results of all mechanical integrity testing conducted during that quarter, including the following information identified by Class III well:</u></p> <p>(A) <u>Date of mechanical integrity testing;</u></p> <p>(B) <u>Identification of the method by which mechanical integrity was established;</u></p> <p>(C) <u>Verification of whether the mechanical integrity was or was not established in a well, including:</u></p> <p>(I) <u>Identification of a well which failed to have mechanical integrity established and consequently required repair, and</u></p> <p>(II) <u>A description of the method of plugging or repair.</u></p> <p>(iii) <u>The status of corrective action on defective wells, required per Section 13 of this Chapter.</u></p> <p>(iv) <u>The results of well repair and plugging required per Section 8 of this Chapter, including a statement that:</u></p> <p>(A) <u>Wells were plugged in accordance with the approved permit or Research and Development Testing License; or</u></p> <p>(B) <u>Documentation that prior approval was obtained from the Administrator where plugging procedures differed from the procedures approved in the permit or Research and Development Testing License. This documentation shall be included in the report, and contain a description of the procedures used specifying the differences between the permit or Research and Development Testing License approved method and the alternate method.</u></p>	<p>40 CFR 146.33 Operating, monitoring, and reporting requirements.</p> <p>(c) <i>Reporting requirements.</i> Reporting requirements shall, at a minimum, include:</p> <p>(1) Quarterly reporting to the Director on required monitoring...</p> <p>(2) Results of mechanical integrity and any other periodic test required by the Director reported with the first regular quarterly report after the completion of the test;....</p> <p>40 CFR 146.8 Mechanical integrity.</p> <p>(e) In conducting and evaluating the tests enumerated in this section or others to be allowed by the Director, the owner or operator and the Director shall apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the Director, he shall include a description of the test(s) and the method(s) used. In making his/her evaluation, the Director shall review monitoring and other test data submitted since the previous evaluation.</p> <p>40 CFR 144.51(p) Plugging and abandonment report. For EPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Regional Administrator. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:</p> <p>144.51(p)(1) A statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator, or</p> <p>144.51(p)(2) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the regional administrator, specifying the differences.</p>

Chapter 11, Section ~~4~~15(c) ~~Annual Report. In situ mining operators shall submit annual reports containing a~~Annual monitoring reports shall include, at a minimum:

The reference to "in situ mining" has been deleted because Chapter 11 is specifically for in situ mining and it is redundant to include the phrase.

Chapter 11, Section ~~4~~15(c)(i) ~~a~~All information required by W.S. § 35-11-411; and:

Chapter 11, Section ~~4(a)~~15(c)(ii) A map(s) showing the location of all wells installed in conjunction with the mining activity and showing all areas where:

(A) Groundwater restoration has been achieved, is actively taking place and is expected to commence during the next year;

(B) Mining is expected to commence during the next year;

Chapter 11, Section ~~4(b)~~15(c)(iii) The total quantity of recovery fluid injected and the total quantity of recovery fluid extracted during the reporting period for each well-field area including a description of how these quantities were determined;

Chapter 11, Section ~~4(c)~~15(c)(iv) Monitoring program results pursuant to Section ~~3(c)(xv)~~ Section 4(a)(xvii) and Section 14 of this Chapter, including a map and description of all excursions, their location and extent, that occurred during the reporting period. Completion details shall be included for all monitor wells installed during the previous year which have not been previously reported; and:

This proposed change is to avoid redundant reporting and to provide cross-references to the appropriate sections in this proposed Chapter.

Chapter 11, Section 15(c)(v) *On next page...*

Chapter 11, Section ~~4(d)~~15(c)(v) An updated potentiometric surface map(s) for all aquifer(s) that are or may be affected by the mining operation may be requested at the Administrator's discretion.

This proposed change is intended to ensure that only useful potentiometric surface maps are submitted. Potentiometric surface maps of the production zones, which are currently required in Annual Reports, have generally proven useless because the water levels in the production zone are constantly changing due to variations in pumping rate and purging well water for water quality sampling. However, overlying and underlying zones should have more stable water levels and updated potentiometric surface maps are useful for these units. Potentiometric surface maps may also be useful for aquifers and production zones during some stages of restoration.

Chapter 11, Section ~~4(e)~~15(c)(vi) Supporting data sufficient to demonstrate groundwater restoration in accordance with Section ~~3(d)(ii)~~ 5(a)(xiii) of this Chapter.

Chapter 11, Section 15(d) During excursions, results from excursion-related monitoring shall be reported in accordance with the requirements of Section 12 of this Chapter.

This subsection has been added to provide a cross-reference to the section on excursions.

Chapter 11, Section 15(e) Well abandonment reports shall be made to the Land Quality Division and the State Engineer's Office:

(i) Within sixty days after the abandonment of any well which has artesian or gassy flow at the surface. The report, set forth in affidavit form, should contain the location of the hole to the nearest two hundred feet, the depth of the well, estimated rate of flow, and the facts of the plugging technique.

(ii) Within twelve months after the abandonment of any well. The report should include the location of the well to the nearest 40-acre legal subdivision (quarter quarter section), the depth the well, and the facts of the plugging technique.

The authority to amend and adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(a)(iv), 35-11-112(a)(i), 35-11-411(a)(ii), 35-11-426(a), 35-11-428(a)(iii)(F), 35-11-430, and 35-11-431(a)(vii).

21. Proposed Rule Adoption: Chapter 11, Section 16

Section 16. Maintenance and Retention of Records.

Because of the volume of records that are collected by many mine operators, including in situ operators, they are allowed to submit specific information to the LQD and allowed to retain other information on site and available for inspection. Therefore, Section 16(a) of the proposed rule discusses maintenance of records that an operator is allowed to retain on site and Section 16(b) discusses maintenance/retention of all records.

Chapter 11, Section 716(a) The operator shall maintain records at the mine site in accordance with W.S. § 35-11-430(b), including, for any laboratory analyses that an operator is allowed to retain on site for inspection rather than submit to the Administrator; and all chemical analyses submitted to the Administrator in accordance with a valid permit or Research and Development License shall include:

(i) A description of, or reference for, the procedures and methods used for sample collection, preservation, and quality control;

(ii) The name, address, and telephone number of the laboratory performing the analyses, and the laboratory job identification number and the date the analyses were performed; and

Retention of information about sampling protocols and laboratory information is considered essential in determining whether a sample is representative and to ensure the objectives of the statutory requirements in W.S. § 35-11-430(b) are met. W.S. § 35-11-430(b) reads:

"The operator shall maintain records at the mine site of all information resulting from monitoring activities required in the permit. The records shall state:

- (i) The date, place, time and method of sampling and the personnel responsible for sampling;*
- (ii) The date on which analysis was performed and the personnel who performed the analysis;*
- (iii) Analytical techniques used; and*
- (iv) The results of the analysis."*

The requirement in the existing rule for submittal of the analytical date is already in W.S. § 35-11-430(b), so that requirement has been deleted from the rule. The term "job" has been replaced with "laboratory" to better conform to the record keeping system used by laboratories.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 16(b) <u>The operator shall:</u></p> <p>(f) <u>Retain records of all monitoring information, including the following:</u></p> <p>(A) <u>Records of all data used to complete permit and license applications and any supplemental information submitted under Sections 3, 4 and 5 of this Chapter;</u></p> <p>(B) <u>Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit or Research and Development Testing License, and records of all data used to complete the application for the permit or Research and Development Testing License;</u></p> <p>(C) <u>The nature and composition of all injected fluids; and</u></p> <p>(D) <u>Information requested by the Administrator for inclusion in the Annual Report as required by W.S. § 35-11-411.</u></p> <p>(ii) <u>Retain the records listed in subsections 16(b)(i)(A) through 16(b)(i)(D) at the mine site until termination of the permit or Research and Development Testing License, unless otherwise authorized by the Administrator. However, the record retention schedule cannot be less than three years after the date of the sample, measurement, report, or application. The Administrator may require the operator to deliver the records to the Administrator at the conclusion of the retention period.</u></p>	<p>40 CFR 144.51 Conditions applicable to all permits.</p> <p>(j) <i>Monitoring and records.</i></p> <p>(1) [see Section 14(a)(v).]</p> <p>(2) The permittee shall retain records of all monitoring information, including the following:</p> <p>40 CFR 144.31 Application for a permit; authorization by permit. (f) <i>Recordkeeping.</i> Applicants shall keep records of all data used to complete permit applications and any supplemental information submitted under §144.31 for a period of at least 3 years from the date the application is signed.</p> <p>144.51(j)(2)(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and</p> <p>144.51(j)(2)(ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under §144.52(a)(6), or under part 146 subpart G as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.</p> <p>For EPA administered programs, the owner or operator shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.</p>

With respect to Maintenance of Records, the EPA rules do not differentiate between records that are submitted to the EPA and records that are maintained on site. However, because of the volume of records that are collected by many mine operators,

including in situ operators, they are allowed to submit specific information and allowed to retain other information on site.

W.S. § 35-11-430(b) includes the same requirements as the EPA rules but does not specify a time frame for records retention. Also, the lifespans of many wellfields at the three operating in situ mines in Wyoming exceed three years, and the information on initial conditions and operating conditions is critical in evaluating operating and restoration success. (The essential nature of this information has been highlighted in recent years as efforts to complete restoration, evaluate flare factors, and assess adjacent mining impacts are underway.) Therefore, the LQD considers records retention until permit or license termination essential. In recognition of the fact that all records may not be critical, some leeway is provided by allowing the operator to request a shorter retention time (but not less than the three years required by the EPA).

The authority to adopt these rules is provided by W.S. §§ 35-11-102, 35-11-109(a)(iv), 35-11-112(a)(i), 35-11-426(a), 35-11-428(a)(iii)(F), 35-11-430, and 35-11-431(a)(vii).

22. Proposed Rule Amendment: Chapter 11, Section 17

Section 5 17. Research and Development Testing License Application.

Chapter 11, Section 517(a) In addition to the information required by this Section, an application for a Research and Development Testing License shall contain all information required by W.S. § 35-11-431 and Sections 6 through 16 of this Chapter and shall:

W.S. § 35-11-431 cross-references provisions of W.S. § 35-11-406 and lists specific items that need to be in the license. The cross-reference to the rules has been added to better define the information that the statutes require. The section numbering has been changed to be consistent with the numbering scheme for other sections.

Chapter 11, Section 5~~(a)~~17(a)(i) Demonstrate that the operation is designed to:

~~(i)~~**(A)** Evaluate mineability or workability of a mineral deposit using in situ mining techniques;

~~(ii)~~**(B)** Affect the land surface, surface waters and groundwater of the State to the minimum extent necessary; and

~~(iii)~~**(C)** Provide premining, operational and post-mining data, information and experience that will be used for developing reclamation techniques for in situ mining.

Chapter 11, Section 5~~(b)~~17(a)(ii) Contain a general description of the land, geology and groundwater hydrology for the proposed Research and Development Testing License area including:

~~(i)~~**(A)** The land use, vegetation, and topsoil characteristics of the affected lands;

~~(ii)~~**(B)** Location and name of surface waters and adjudicated water rights inside and within one-half ½ mile of the Research and Development Testing License license areas;

~~(iii)~~**(C)** Locations and present owners of all wells inside and within one-half (~~1/2~~) mile of the Research and Development Testing License area to include information concerning plugging and well completion and producing interval(s) to the extent such information is available in the public record or by a reasonable inspection of the property; and

~~(iv)~~**(D)** Groundwater quality data and potentiometric surface elevations for aquifers that may be affected by the proposed operation.

The term "license" has been changed to "Research and Development Testing License" for clarity, as LQD does issue other types of licenses.

The authority to amend these rules is provided by W.S. §§ 35-11-112(a)(i), 35-11-426(a), 35-11-431(a), 35-11-432, and 35-11-434.

23. Proposed Rule Adoption: Chapter 11, Section 18

Section 18. Duration of Permits and Research and Development Testing Licenses.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 18(a) Permits shall be issued:</p> <p>(i) For a period coinciding with the estimated schedules for termination of all mining and reclamation activities in conformance with the approved mining plan (Section 4(a)(ii)) and reclamation plan (Section 5(a)(i)) as provided in W.S. § 35-11-405(a) and (b); and</p> <p>(ii) With the option for revision of the mining and reclamation schedules, as provided in W.S. § 35-11-429.</p>	<p>40 CFR 144.36 Duration of permits.</p> <p>(a)...UIC permits for Class...III wells shall be issued for a period up to the operating life of the facility....</p> <p>(c) The Director may issue any permit for a duration that is less than the full allowable term under this section.</p>

The EPA Rules state that a permit "shall be issued for a period up to the operating life of the facility" and that the Director may issue a permit for a shorter period of time. The Wyoming Statutes (W.S. § 35-11-405(b)) state that "[a] mining permit...remains valid...until termination of all mining and reclamation operations, except as otherwise provided in this act." W.S. § 35-11-406(a) defines a mining permit as "the certification that the tract of land described may be mined by an operator licensed to do so in conformance with an approved mining plan and reclamation plan." Requirements for approved plans include a "timetable for accomplishment of the reclamation plan" (W.S. § 35-11-431(a)(v)) and "estimated dates of commencement and termination of the proposed permit" (W.S. § 35-11-406(a)(xi)). Therefore, the permit is issued on the basis of a viable schedule, and, as outlined below, that schedule can be modified. (As noted in the Statement of Reasons for Chapter 11, Section 4(a)(ii), extensive delays in the schedule are of increasing concern.)

One of the primary concerns of the legislation and rules governing in situ operations is the protection of groundwater resources. For example, in W.S. § 35-11-429(a)(iv), any significant change to the mining and reclamation plans is prohibited if the change "would jeopardize reclamation or protection of any waters of the state unless a permit revision has been approved by the director pursuant to this act." Therefore, revisions to the schedules in the mining and reclamation plans can be made, provided the revisions do not adversely affect long-term reclamation goals.

Mining and reclamation schedules have been of increasing concern to LQD because of the length of time some of the existing in situ mining and reclamation activities have extended beyond the original projections. Of particular concern is the additional length

of time for restoration activities. As an example, in a permit approved in 1987, an operator projected fourteen years from installation of the first wellfield to restoration of all the wellfields. Additional wellfields and new lands were added over the years, but the overall schedule was not revised until 1997. In the revised schedule, restoration activities now extend to 2012. More importantly, restoration of two of the original wellfields, that was to have been completed in 1996, was projected to extend through 1998 and has not yet been completed. Therefore, the LQD believes that more attention must be given to mining and reclamation schedules to ensure that the permit remains viable.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 18(b) <u>The Administrator shall review the permit at least once every five years to determine whether it should: remain unchanged; be revised in accordance with the requirements of Section 19 of this Chapter; or revoked in accordance with the requirements of Section 20 of this Chapter.</u></p>	<p>40 CFR 144.36 Duration of permits. (a)...The Director shall review each issued Class...III well UIC permit at least once every 5 years to determine whether it should be modified, revoked and reissued, terminated, or a minor modification made as provided in §§144.39, 144.40, and 144.41.</p>

Chapter 11, Section 18(c) As specified in W.S. § 35-11-431(a), a Research and Development Testing License is issued for up to one year and may be renewed annually.

The reference to the statutory time frame for licenses is included so the time frames for both permits and licenses can be found in the same place in the rules.

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(ii), 35-11-112(a)(i), 35-11-428, 35-11-429(a)(iv) and (v) and 35-11-801(a).

24. Proposed Rule Adoption: Chapter 11, Section 19

Section 19. Revisions to Class III Well Portions of an In Situ Mine Permit or Research and Development Testing License.

There are some variations between the EPA and State approaches to permit revisions and terminations that must be addressed in Sections 19 (Revision) and 20 (Revocation) to ensure that the state rules are as effective as the federal rules and to ensure that provisions of the Wyoming Statutes are addressed.

With respect to terminology, the EPA rules refer to permit "modification." However, all existing LQD Coal and Noncoal rules refer to permit "revision." Therefore, in the proposed rules, the term "revision" is used instead of "modification." Similarly, the EPA rules refer to "revocation and reissuance" of permits. However, the Wyoming Environmental Quality Act does not differentiate between revocation and termination of permits - in either case, a revoked permit would need to be re-issued before mining could resume. Therefore, the EPA rules relating solely to "revocation and reissuance" have not been incorporated into the proposed LQD rules. Finally, the EPA rules refer to "termination" of permits; however, all the existing LQD rules refer to "revocation" of permits. Therefore, the term "revocation" has been retained.

Chapter 11, Section 19(a) A permit, license to mine, or Research and Development Testing License may be revised as a significant or non-significant revision as specified in Sections 19(b) and 19(c), respectively, to address one or more of the following considerations, subject to the limitations of Sections 19(d) and 19(e).

(i) A revision may be necessary to address:

(A) A permit condition per Section 9 of this Chapter;

(B) An excursion or other aspect of noncompliance per Section 12 of this Chapter and W.S. 35-11-429(a)(ii); or

(C) A corrective action or compliance schedule per Section 13 of this Chapter;

(D) A concern noted during the five-year review per Section 18 of this Chapter;

or

(E) An objection by the Administrator to a part of the Annual Report per W.S. § 35-11-411(b);

(F) A change that could jeopardize reclamation or protection of any waters of the state per W.S. 35-11-429(a)(iv):

The list of items in Subsection 19(a)(i) is provided as a cross-reference to other sections of this Chapter and the statutes which mention revisions. The first item (A) on the list reflects both EPA and LQD rules on permit conditions. The second and third items (B and C) reflect EPA rules on excursions, corrective actions, and compliance. The fourth item (D) reflects the EPA rule on 5-year permit reviews. The second item and the last two items (B, E, and F) reflect provisions in the Wyoming Statutes, specifically W.S. § 35-11-411(b) and W.S. § 35-11-429(ii) and (iv).

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 19(a)(ii) <u>Any interested person, including the operator may request a revision provided the request is in writing and contains facts or reasons supporting the request. If the Administrator decides that a request for a permit or license revision is not justified, he or she shall send the requester a brief written response giving the reason(s) for the decision. Denials of requests for revisions are not subject to public notice and comment.</u></p> <p>(iii) <u>If the Administrator requires the operator to revise any Class III Well portions of a permit or Research and Development Testing License, he or she shall prepare a letter to the operator specifying the needed changes and additional information.</u></p>	<p>40 CFR 124.5 Modification, revocation and reissuance, or termination of permits.</p> <p>(a) <i>(Applicable to State programs, see §§... 145.11 (UIC)).</i> Permits (other than [Prevention of Significant Deterioration] permits) may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in §§...144.39 or 144.40 (UIC).... All requests shall be in writing and shall contain facts or reasons supporting the request.</p> <p>(b) If the Director decides the request is not justified, he or she shall send the requester a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings....</p> <p>(c)(1) [Refers to Draft Permits prepared by EPA.]</p> <p>(2) [See Section 19(e).]</p> <p>(d) [See Section 20.]</p> <p>40 CFR 144.39 Modification or revocation and reissuance of permits.</p> <p>When the Director receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit (see §144.51 of this chapter), receives a request for</p>

PROPOSED RULE ADOPTION	EPA RULE
	<p>modification...under §124.5, or conducts a review of the permit file) he or she may determine whether or not one of more of the causes listed in paragraphs (a) and (b) of this section for modification...exist. If cause exists, the Director may modify...the permit accordingly, subject to the limitations of paragraph (c) of this section, and may request an updated application if necessary....</p> <p>[See the following subsections for the 40 CFR 144.39 subsections.]</p>

Subsections 19(a)(ii) and (iii) are adopted from the EPA rules and are a combination of the general (40 CFR 124.5) and specific (40 CFR 144.39) EPA requirements. The restriction in 40 CFR 124.5(a) that permits can only be modified for the reasons listed in 40 CFR 144.39 and 144.40 is not considered to interfere with any requirements under the Wyoming Statutes because all the statutory requirements are considered to fall within the reasons listed in 40 CFR 144.39 and 144.40. Other variations between the EPA and State approaches are discussed after the following subsections.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 19(b) <u>The occurrence of any of the following with regards to the Class III Well portion of a permit or Research and Development Testing License shall result in the operator being required to revise the permit or Research and Development Testing License. These revisions shall be treated as significant revisions and require public notice as specified in Chapter 7 of these regulations and Section 21 of this Chapter. In addition, the State Decision Document will be updated for these revisions:</u></p> <p><u>(i) Any material or substantial alterations or additions to the facility which occurred after issuance of the permit or license, which justify the application of permit or license conditions that are different or absent in the existing permit or license, including:</u></p> <p><u>(A) Any increase in the amount of land related to installation or operation of additional Class III wells, from that which was approved in</u></p>	<p>40 CFR 144.39 Modification or revocation and reissuance of permits. ...</p> <p>If a permit modification satisfies the criteria in §144.41 for "minor modifications" the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures in part 124 must be followed.</p> <p>(a) Causes for modification. The following are causes for modification....</p> <p>(1) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.</p> <p>(2) [Not applicable to Class III wells].</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>the original in situ mining permit or Research and Development Testing License. Such a revision shall include (if not already presented in the permit or Research and Development Testing License) the information required in W.S. § 35-11-428 and the requirements of Sections 4 through 19 this Chapter. However, if the increase in the amount of land is for purposes unrelated to installation or operation of Class III wells, then the provisions of Section 2(b)(ii) of Chapter 7 apply.</u></p> <p><u>(ii) The Underground Injection Control standards or regulations on which the permit or license was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit or license was issued;</u></p> <p><u>(iii) The Administrator determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.</u></p> <p><u>(iv) Cause exists for revocation, as described in Section 20 of this Chapter, but the Administrator determines that revision is appropriate;</u></p> <p><u>(v) A determination is made that the activity endangers human health or the environment and can only be regulated to acceptable levels by a permit revision.</u></p>	<p>(3) <i>New regulations.</i> The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued....</p> <p>(4) <i>Compliance schedules.</i> The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also §144.41(c) (minor modifications).</p> <p>(b) <i>Causes for modification or revocation and reissuance.</i> The following are causes to modify or, alternatively, revoke and reissue a permit:</p> <p>(1) Cause exists for termination under §144.40, and the Director determines that modification...is appropriate.</p> <p>(2) [Permit transfers regulated under Chapter 7 of these regulations.]</p> <p>(3) [Not applicable - applies to hazardous waste].</p> <p>(c) [See Section 19(d).]</p> <p>40 CFR 144.40(b)(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;</p>

In general, the EPA rules only differentiate between significant and non-significant revisions. The items that qualify as non-significant revisions are specifically identified (Section 19(c)), and all other items are considered significant revisions. Public notice is required for all significant revisions. In contrast, the LQD currently has a broader range of revisions in policy, including: major revisions, minor revisions, and non-significant revisions. The items that currently qualify as "significant deviations" are

specifically identified in the rules (Chapter 7, Section 2), and revisions to address these "deviations" require public notice. Therefore, this section of the proposed rules supplements Chapter 7, Section 2 with items specific to Class III portions of permits and licenses.

For example, the EPA considers all addition of new lands as significant revisions. The existing LQD rules only consider additions of new lands that result in an increase in 20% of affected land as significant. However, for the proposed rules to be as effective as the federal rules, all those additions of new lands that impact the Class III portions of the permit must be considered significant and the proposed Section 19(b)(i)(A) specifically addresses this requirement. The LQD believes the distinction between additions of new lands that impact or do not impact the Class III portions of a permit does need to be retained, rather than considering all additions to in situ permits as significant. There have been circumstances when lands were added for mining of gravel for road surfacing, and it is possible that similar circumstances could be encountered in the future.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 19(c) <u>A non-significant revision to any Class III Well portion of a permit or Research and Development Testing License shall meet the requirements of Chapter 7 of these regulations, except that a non-significant revision shall be for the following reasons only:</u></p> <p><u>(i) To correct typographical errors;</u> <u>(ii) To require more frequent monitoring or reporting by the operator;</u> <u>(iii) To change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing schedule of compliance and does not interfere with attainment of the final compliance date requirement;</u></p>	<p>40 CFR 144.41 Minor modifications of permits. Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in §144.39. Minor modifications may only:</p> <p>(a) Correct typographical errors; (b) Require more frequent monitoring or reporting by the permittee; (c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(iv) To allow for a change in ownership or operational control of a facility where the Administrator determines that no other change in the permit or Research and Development Testing License is necessary provided that a written agreement is submitted in a format and on forms required by the Administrator containing a specific date for transfer of permit or Research and Development Testing License responsibility, coverage, and liability between the current operator and new operator;</u></p> <p><u>(v) To change quantities or types of fluids injected which are within the capacity of the facility as permitted or licensed and would not interfere with the operation of the facility or its ability to meet conditions described in the permit or Research and Development Testing License and would not change its classification;</u></p> <p><u>(vi) To change well construction requirements approved by the Administrator pursuant to Section 6 of this Chapter, provided that any such alteration shall comply with the requirements of Section 6; or</u></p> <p><u>(vii) To amend a well plugging/conversion plan which has been updated under Section 8 of this Chapter.</u></p>	<p>(d) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.</p> <p>(e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgement of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.</p> <p>(f) Change construction requirements approved by the Director pursuant to §144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of this part and part 146.</p> <p>(g) Amend a plugging and abandonment plan which has been updated under §144.52(a)(6).</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 19(d) Suitability of the Class III well location will not be considered at the time of permit revision unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.</u></p>	<p>40 CFR 144.39 Modification or revocation and reissuance of permits...</p> <p>(c) Suitability of the Class III well location will not be considered at the time of permit revision unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 19(e) <u>Only those conditions to be revised shall be reopened when a revision is necessary. All other aspects of the existing permit shall remain in effect for the duration of the unrevised permit.</u></p>	<p>40 CFR 124.5 Modification, revocation and reissuance, or termination of permits. (c)(2) In a permit modification under this section, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. [The rest of this subsection applies to permit revocations.]</p>

Proposed section (e) acts as a corollary to Section 9(a)(i)(B) [40 CFR 144.51(f)] which requires that all conditions remain in effect when an application for a revision is filed.

Chapter 11, Section 19(f) Reviews and decisions on a permit revision application shall be conducted according to the provisions in Chapter 7.

This section is included to ensure that revisions to Class III and non-Class III sections of permits are treated the same procedurally.

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(a)(ii), 35-11-112(a)(i), 35-11-426(a), 35-11-427, 35-11-429(a)(ii) & (iv) and 35-11-801(a).

25. Proposed Rule Adoption: Chapter 11, Section 20

Section 20. Revocation.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 20(a) <u>A permit license to mine, or Research and Development Testing License may be revoked by the Administrator to address one or more of the following considerations.</u></p> <p>(i) <u>Revocation may be necessary to address:</u></p> <p style="padding-left: 40px;">(A) <u>An excursion or other aspect of noncompliance per Section 12 of this Chapter, or</u></p> <p style="padding-left: 40px;">(B) <u>One of the items listed in Section 20(b).</u></p> <p>(ii) <u>Any interested person, including the operator, may request revocation provided the request is in writing and contains facts or reasons supporting the request. If the Administrator decides that a request for revocation is not justified, he or she shall send the requester a brief written response giving the reason(s) for the decision. Denials of requests for revocations are not subject to public notice and comment;</u></p> <p>(iii) <u>If the Administrator revokes any Class III Well portions of a permit or Research and Development Testing License, he or she shall prepare a letter to the operator specifying the needed changes and additional information.</u></p>	<p>40 CFR 124.5 Modification, revocation and reissuance, or termination of permits.</p> <p>(a) <i>(Applicable to State programs, see §... 145.11 (UIC)).</i> Permits (other than [Prevention of Significant Deterioration] permits) may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in §§...144.39 or 144.40 (UIC).... All requests shall be in writing and shall contain facts or reasons supporting the request.</p> <p>(b) If the Director decides the request is not justified, he or she shall send the requester a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings....</p> <p>(c) [Only applicable to revisions.]</p> <p>(d) <i>(Applicable to State programs, see §... 145.11 (UIC)...).</i> If the Director tentatively decides to terminate a permit under §...144.40 (UIC),...he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under §124.6. [The rest of the section is only applicable to EPA-issued permits.]</p>

As noted in the previous section, there are differences in terminology and approach between the EPA and State that need to be addressed in the proposed rules to ensure that the state rules are as effective as the federal rules and to ensure that provisions of the Wyoming Statutes are addressed.

TERMINOLOGY

With respect to terminology, the EPA rules refer to "termination" of permits; however, most of the Wyoming Statutes and existing LQD rules refer to "revocation" of permits. Therefore, the term "revocation" has been retained. Also, the EPA rules refer to

"revocation and reissuance" of permits. However, the Wyoming Environmental Quality Act does not differentiate between revocation and termination of permits - in either case, a revoked permit would need to be re-issued before mining could resume. Therefore, the EPA rules relating solely to "revocation and reissuance" have not been incorporated into the proposed LQD rules.

Also, with respect to terminology, the EPA rules refer solely to revocation of permits. However, the Wyoming Statutes and proposed LQD rules also include Licenses to Mine, which is required for each operator to mine in a given permit area. Also, the Wyoming Statutes allow for "suspension" of a License to Mine, which provides some of the same protections as the EPA rules outlined in the next proposed subsection (Chapter 11, Section 20(b)).

APPROACH

With respect to approach to revocation (or termination), there are three items that need to be compared to ensure compatibility between the EPA and LQD rules.

- completion of reclamation/restoration responsibilities if a permit is revoked;*
- reasons for revocation;*
- public notice for revocation.*

Completion of Reclamation/Restoration Responsibilities

LQD has two, related concerns for which there is no direct counterpart in the EPA rules. The first of these is ensuring that any necessary reclamation/restoration is completed if a permit or license is revoked, and the second is bond forfeiture if an operator fails to meet his or her obligations. Because of the need to ensure that reclamation/restoration is completed, the LQD considers permit revocation an extraordinary step that, unless no activity had taken place at the site, would probably only be done in parallel with the bond forfeiture process.

Reasons for Revocation

The EPA has a relatively broad list of reasons for revocation in 40 CFR 144.40. The Wyoming Statutes have a shorter list; however, the LQD believes that the intent of the EPA rules can be achieved through the enforcement provisions in the Wyoming Statutes. This is discussed in more detail after the next proposed subsection (Chapter 11, Section 20(b)).

Public Notice

Because of the difference in the approach to permit preparation between the EPA and State, there is a difference in the approach to public notice, as discussed in more detail after the next proposed section (Chapter 11, Section 21).

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 20(b) <u>The Director or Administrator may revoke a permit, Licence to Mine, or Research and Development Testing License:</u></p> <p><u>(i) If an excursion cannot be controlled or mitigated per W.S. § 35-11-429(a);</u> <u>(ii) For failure to comply with permit terms and conditions per W.S. §§ 35-11-412(b)&(c);</u> <u>(iii) For the operator's failure in the application or during the issuance process to disclose fully all relevant facts or for misrepresenting any relevant facts at any time, as provided in W.S. §§ 35-11-409(a) and 412(a); and</u> <u>(iv) Per the provisions of W.S. §§ 35-11-109(a)(xiii) and 110(b);</u></p> <p>Chapter 11, Section 20(c) <u>A revocation requires public notice as specified in Section 3 of Chapter 7 of these regulations and Section 21 of this Chapter.</u></p>	<p>40 CFR 144.40 Termination of permits. (a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:...</p> <p>(1) [See Statement of Reasons below.]</p> <p>(2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;...</p> <p>(3) [See Statement of Reasons below.]</p> <p>40 CFR 144.40(b) The Director shall follow the applicable procedures in part 124 in terminating any permit under this section.</p>

The EPA rule (40 CFR 144.40) includes two reasons (NonCompliance and Endangerment (144.40(a)(1) and (3), respectively)) to terminate permits for which there are not direct LQD counterparts in W.S. § 35-11-409. However, the WDEQ Director and the LQD Administrator do have the authority to take actions including permit revocation, issuing a cease and desist order, or suspending a License to Mine, that can effectively protect human health and the environment. Therefore, the fact that there are not direct counterparts for all the EPA reasons for permit termination does not necessarily mean the proposed LQD rule is less effective than the EPA rule. The third reason for permit revocation in the EPA rule (Failure to Disclose (40 CFR 144.40(a)(2))) has a direct counterpart in the Wyoming Statutes, as outlined below.

EPA RULES - NONCOMPLIANCE & ENDANGERMENT

The two reasons for permit termination included in the EPA rules, but not in the proposed LQD rules, are in 40 CFR 144.40:

(a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:

(1) Noncompliance by the permittee with any condition of the permit;...

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;..."

Per the following Wyoming Statutes, the LQD has several options for imposing restrictions on activities at a mine site (including termination for failure to control an excursion, license suspension, and cease and desist orders). These options are scattered in several different sections of the Wyoming Statutes.

PERMIT REVOCATION

LQD's authority for permit revocation (termination) in the case of excursions is provided in W.S. § 35-11-429(a):

"Every permit shall:...(ii) Authorize the administrator to terminate or modify the mining operation if an excursion cannot be controlled or mitigated within the constraints specified in the permit."

SUSPENSION OF THE LICENSE TO MINE

In other cases of failure to comply with permit terms and conditions, per W.S. §§ 35-11-412(b) & (c), the LQD can suspend the License to Mine that each operator in a permit area is required to have:

"(b) The director may suspend the license if he determines the operator is in substantial violation of the terms of the license or of the provisions of this act. The suspension shall be lifted when the violations have been corrected to the director's satisfaction. No suspension shall be unreasonably prolonged.

(c) Unless an emergency exists, the revocation or suspension of a license shall become effective upon thirty (30) days notice to the applicant. In the case of an emergency, the director may cause such revocation or suspension to become effective immediately upon receipt of notice."

Because a License to Mine is required for each operator to mine on an approved permit, this provision effectively restricts activities within a permit area. The term "License to Mine" is defined in W.S. § 35-11-103(e)(xiii) as:

"certification from the administrator that the licensee has the right to conduct mining operations on the subject lands in compliance with this act; for which a valid permit exists; that he has deposited a bond conditioned on his faithful fulfillment of the requirements thereof; and that upon investigation the administrator has determined that the licensed mining operation is within the purposes of this act."

FAILURE TO DISCLOSE

W.S. § 35-11-409(a) authorizes permit revocation by the director "any time he determines that the permit holder intentionally misstated or failed to provide any fact which would have resulted in the denial of a mining permit and which good faith compliance with the policies, purposes, and provisions of this act would have required him to provide."

LICENSE REVOCATION

Similarly, license revocation by the director is authorized by W.S. § 35-11-412(a):

"(i) If at any time he becomes aware of the existence of any fact, reason, or condition that would have caused him to deny an application for a mining permit whether or not such conditions existed at the time of the application;

(ii) If he determines that the operator intentionally misstated or failed to provide any fact which would have resulted in the denial of a mining permit and which good faith compliance with the policies, purposes, and provisions of this act would have required him to provide."

POWER AND DUTIES OF THE DIRECTOR

The WDEQ Director has broad authority under W.S. § 35-11-109(a)(xiii):

"(a) In addition to any other powers and duties imposed by law, the director of the department shall:

(xiii) Issue, deny, amend, suspend or revoke permits and licenses and determine the amount of bonds to be posted by the operator to insure reclamation of any affected lands;"

POWERS OF THE LQD ADMINISTRATOR

The LQD Administrator has authority under W.S. § 110(b):

"(b) The administrator of the land quality division shall have, in addition to the powers set forth in subsection (a) of this section, the power to issue, deny, amend, suspend or revoke licenses and to determine the amount of bonds to be posted by an operator to insure reclamation of affected lands in accordance with the specific authority granted the administrator under Article 4 of this act."

Considering the range of options available to LQD for controlling activities at a mine site, the LQD believes these options provide for protection as effective as the EPA rule regarding permit termination in the event of noncompliance with a permit term or condition or endangerment situation. In addition, the Director of the WDEQ can issue the following orders:

CEASE AND DESIST ORDER

A cease and desist order can be issued by the Director (and it must be affirmed by the Environmental Quality Council) per W.S. § 35-11-701(c)(i):

"In case of failure to correct or remedy any alleged violation, the director shall cause to be issued and served upon the person alleged

to be responsible for any such violation a written notice which shall specify the provision of this act, rule, regulation, standard, permit, license, or variance alleged to be violated and the facts alleged to constitute a violation thereof, and may require the person so complained against to cease and desist from the violation within the time the director may determine;..."

EMERGENCY ORDER

Also, the WDEQ Director can issue an emergency order, with the concurrence of the Governor, or issue, through the Attorney General, a civil action for immediate injunctive relief (W.S. §§ 35-11-115(a)&(b)):

"(a) Any other provisions of law to the contrary notwithstanding, if the director finds that a condition of air, water or land pollution exists and that it creates an emergency requiring immediate action to protect human or animal health or safety, the director, with the concurrence of the governor, shall order any persons causing or contributing to such pollution to reduce or discontinue immediately the actions causing the condition of pollution and such order shall fix a time and place for hearing before the council within forty-eight (48) hours thereafter. The council shall affirm, modify or set aside the director's order within forty-eight (48) hours following the adjournment of the hearing.

(b) If the director has evidence that any pollution source presents an immediate and substantial danger to human or animal health or safety, he may institute, through the attorney general, a civil action for immediate injunctive relief to halt any activity causing the danger. The court may issue an ex-parte order and shall schedule a hearing on the matter within three (3) working days from the date the petition for injunctive relief is filed."

The authority to adopt these rules is generally provided under W.S. §§ 35-11-102, 35-11-109(a)(xiii), 35-11-110(a)(ii), 35-11-112(a)(i), 35-11-115, 35-11-409(a)(xiii), 35-11-426(a), 35-11-427, 35-11-429(a)(ii)&(iv) and 35-11-901.

26. Proposed Rule Adoption: Chapter 11, Section 21

Section 21. Public Notice, Public Hearing, Comment, and Decision Requirements.

Chapter 11, Section 21(a) In addition to the requirements of W.S. §§ 35-11-406(g), (j), and (k) and Chapter 7, public notice for actions related to in situ permits or Research and Development Testing Licenses, except permit or license revocation, shall be given by the following methods. Public notice for permit or license revocation shall be given by the methods in Section 21(d) of this Chapter.

Public notice provisions in the EPA rules for Class III wells include requirements not currently included in the LQD rules, such as notification to additional agencies and individuals. Therefore, this section identifies the additional public notice requirements related to permitting of Class III wells. In addition, the public notice requirements for obtaining an Aquifer Exemption (Chapter 11, Section 10(c)) can be addressed along with the public notice requirements for the UIC program. Because of the difference in who prepares permits under the EPA and State approaches, the public notice provisions for revocation are addressed in a separate subsection.

Chapter 11, Section 21(a)(i) On next page...

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 21(a)(i) <u>All public notices issued under this Section shall contain the following:</u></p> <p>(A) <u>Name and address of the office processing the permit action for which notice is being given;</u></p> <p>(B) <u>Name and address of the operator and, if different, of the facility or activity regulated by the permit;</u></p> <p>(C) <u>A brief description of the business conducted at the facility or activity;</u></p> <p>(D) <u>Name, address and telephone number of a person from whom interested persons may obtain further information including copies of the State Decision Document;</u></p> <p>(E) <u>A brief description of the comment procedures, including a statement of procedures to request a hearing or, if a hearing has already been scheduled, the time and place of that hearing, and other procedures by which the public may participate in the final permit decision; and</u></p> <p>(F) <u>Any additional information considered necessary or proper.</u></p>	<p>40 CFR 124.10(d) <i>Contents (applicable to State programs, see...§§145.11 (UIC))....</i></p> <p>(1) <i>All public notices.</i> All public notices issued under this part shall contain the following minimum information:</p> <p>(i) Name and address of the office processing the permit action for which notice is being given;</p> <p>(ii) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit, except in the case of NPDES and 404 draft general permits under §§ 122.28 and 233.37;</p> <p>(iii) A brief description of the business conducted at the facility or activity described in the permit application or draft permit, for NPDES or 404 general permits when there is no application;</p> <p>(iv) Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit, as the case may be, statement of basis or fact sheet, and the application; and</p> <p>(v) A brief description of the comment procedures required by §§ 124.11 and 124.12 and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision.</p> <p>(vi) through (viii) [For EPA-issued, NPDES, and 404 permits]</p> <p>(ix) Any additional information considered necessary or proper.</p>

The requirements of this subsection are in the public notice format presently in use by the LQD, but have not been codified until this proposal. A copy of the existing format (LQD Format No. 6), with necessary changes highlighted, is included in Attachment C of this proposed rules package.

PROPOSED RULE ADOPTION	EPA RULE
<p><u>Chapter 11, Section 21(a)(ii) The Administrator shall mail a copy of the notice to the following persons:</u></p> <p><u>(A) Any other agency (including EPA when the draft permit is prepared by the State) which the Administrator knows has issued or is required to issue a permit for the same facility or activity under the following programs: Resource Conservation and Recovery Act (RCRA); Underground Injection Control (UIC); Prevention of Significant Deterioration (or other permit requirement under the Clean Air Act); National Pollution Discharge Elimination System (including sludge management permits); and Section 404 of the Clean Water Act.</u></p> <p><u>(B) Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources, the Advisory Council on Historic Preservation, State Historic Preservation Officers, including any affected Indian Tribes, and the Wyoming Oil and Gas Commission.</u></p> <p><u>(C) Persons on a mailing list developed by including:</u></p>	<p>40 CFR 124.10(c)(1) <i>Methods (applicable to State programs, see... §§145.11 (UIC))....</i> Public notice of activities described in paragraph (a)(1) of this section shall be given by the following methods:</p> <p>(1) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits [see Chapter 11, Section 21(a)(ii)(F) for this waiver];</p> <p>(i) ["the applicant" - W.S. §35-11-406(j) requires the applicant to file the public notice; therefore, under Wyoming's program, a copy does not need to be mailed to the applicant];</p> <p>(ii) Any other agency which the Director knows has issued or is required to issue a RCRA, UIC, PSD (or other permit under the Clean Air Act), NPDES, 404, sludge management permit, or ocean dumping permit under the Marine Research Protection and Sanctuaries Act for the same facility or activity (including EPA when the draft permit is prepared by the State);</p> <p>(iii) Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation Officers, including any affected States (Indian Tribes). (For purposes of this paragraph, and in the context of the Underground Injection Control Program only, the term State includes Indian Tribes treated as States.)</p> <p>(iv) through (viii) [For NPDES, 404, PSD, & Class I UIC permits]</p> <p>(ix) Persons on a mailing list developed by:</p>

PROPOSED RULE ADOPTION	EPA RULE
<p><u>(I) Those who request in writing to be on the list;</u></p> <p><u>(II) Soliciting persons for "area lists" from participants in past permit proceedings in that area; and</u></p> <p><u>(III) Persons notified of the opportunity to be put on the mailing list through periodic publication in the public press. The Administrator may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Administrator may delete from the list the name of any person who fails to respond to such a request.</u></p> <p><u>(D) Any unit of local government having jurisdiction over the area where the facility is proposed to be located.</u></p> <p><u>(E) Each State agency having any authority under State law with respect to the construction or operation of such facility.</u></p> <p><u>(F) Any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits.</u></p>	<p>(A) Including those who request in writing to be on the list;</p> <p>(B) Soliciting persons for "area lists" from participants in past permit proceedings in that area; and</p> <p>(C) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as Regional and State funded newsletters, environmental bulletins, or State law journals. (The Director may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Director may delete from the list the name of any person who fails to respond to such a request.)</p> <p>(x)(A) To any unit of local government having jurisdiction over the area where the facility is proposed to be located; and</p> <p>(B) To each State agency having any authority under State law with respect to the construction or operation of such facility.</p> <p>(2) [For EPA-issued, NPDES, RCRA, and 404 permits.]</p> <p>(3) [Requirement to meet State legal notice requirements, too]; and</p> <p>(4) [See next subsection].</p>

The federal program on which the Coal Rules are based also requires that notice be sent to several entities other than those listed in W.S. §§ 35-11-406(g) and 406(j). As the Wyoming Statutes only require the operator to send notice to some of those entities, the Coal Rules require the Administrator to send notice to the additional entities. A similar approach has been followed in this instance.

For clarity in Section 21(a)(ii)(A), the list of programs has been rearranged and the waiver moved to Section 21(a)(ii)(F). In addition, the reference to the Marine Sanctuaries Program has been removed because it is unlikely that any of the Wyoming facilities will request an ocean dumping permit. Similarly, in Section 22(a)(ii)(B), the reference to agencies with jurisdiction over coastal zone management plans has been removed because of the lack of coastal zones in Wyoming. The Wyoming Oil and Gas Commission has been included in the reference in Section 21(a)(ii)(B) to ensure the statutory requirement in W.S. § 35-11-406(j) is not overlooked.

The list of interested persons to whom notice should be sent (Section 21(a)(ii)(C)) includes three groups: those who request to be on the list; those on "area lists;" and those notified of the opportunity to be on the list. The LQD currently has a list of interested persons, operators, and environmental groups to whom it sends notices. To augment this list, the LQD has used the public notice for this rule making as a way to contact potentially interested parties (Section 21(a)(ii)(C)(III)). For "area lists" (Section 21(a)(ii)(C)(II)), the LQD has contacted those owners previously contacted for permit actions per W.S. § 35-11-406. With respect to the "notification list" (Section 21(a)(ii)(C)(III)), the LQD has found the press publication effective, and because of the small state population, few of the other publications listed as examples are widely available in Wyoming.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 21(a)(iii) <u>In addition to mailing a copy of the public notice, the Administrator shall mail or electronically transfer a copy of the State Decision Document to the following persons:</u></p> <p><u>(A) Any other agency (including EPA when the draft permit is prepared by the State) which the Administrator knows has issued or is required to issue a permit for the same facility or activity under the following programs: Resource Conservation and Recovery Act (RCRA); Underground Injection Control (UIC); Prevention of Significant Deterioration (or other permit requirement under the Clean Air Act); National Pollution Discharge Elimination System (including sludge management permits); and Section 404 of the Clean Water Act.</u></p> <p><u>(B) Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources, the Advisory Council on Historic Preservation, State Historic Preservation Officers, including any affected Indian Tribes.</u></p>	<p>40 CFR 124.10(e) <i>(Applicable to State programs, see...§§145.11 (UIC))</i>....In addition to the general public notice described in paragraph (d)(1) of this section, all persons identified in paragraphs (c)(1)(i), (ii), (iii), and (iv) of this section shall be mailed a copy of the fact sheet or statement of basis (for EPA-issued permits), the permit application (if any) and the draft permit (if any).</p>

See the proposed Section 21(a)(ii)(A) for the list of persons identified in 40 CFR 124.10(c)(1)(i), (ii), (iii), and (iv).

Chapter 11, Section 21(a)(iv) On next page....

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 21(a)(iv) <u>To supplement the required methods of public notice listed above, public notice can also be given by any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.</u></p>	<p>40 CFR 124.10(c)(1) <i>Methods (applicable to State programs, see...§§145.11 (UIC))....</i> Public notice of activities described in paragraph (a)(1) of this section shall be given by the following methods:...</p> <p>40 CFR 124.10(c)(4) Any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.</p>

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 21(b) <u>Objections may be filed in accordance with W.S. § 35-11-406(k), which objections shall list one or more reasons for denying a permit or Research and Development Testing License revision application as set out in W.S. § 35-11-406(m). If such written objections are filed, a public hearing shall be held in accordance with W.S. § 35-11-406(k) and the requirements of this Chapter. In addition to the hearing notice requirements described in W.S. § 35-11-406(k), the public notice of a hearing shall contain the following information:</u></p> <ul style="list-style-type: none"> <u>(i) Reference to the date of previous public notices relating to the permit;</u> <u>(ii) Date, time, and place of the hearing;</u> <u>(iii) A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.</u> 	<p>40 CFR 124.10(d) <i>Contents (applicable to State programs, see...§§145.11 (UIC))....</i></p> <p>(2) Public notices for hearings. In addition to the general public notice described in paragraph (d)(1) of this section, the public notice of a hearing under §124.12, subpart E, or subpart F shall contain the following information:</p> <ul style="list-style-type: none"> (i) Reference to the date of previous public notices relating to the permit; (ii) Date, time, and place of the hearing; (iii) A brief description of the nature and purpose of the hearing, including the applicable rules and procedures; and (iv) [For 404 permits].

This first part of this section is the same as Chapter 7, Section 3(b) to ensure that all noncoal permits are treated in a similar fashion with respect to comments and hearings. The phrase "and the requirements of this Chapter" was added to the 2nd sentence to note the specific UIC provisions, such as the public notice provisions listed in the latter part of this section.

PROPOSED RULE ADOPTION	EPA RULE
<p>Chapter 11, Section 21(c) <u>A decision on the application will be made by the Director:</u></p> <p>(i) <u>Within 30 days after completion of the notice period if no hearing is requested; or</u></p> <p>(ii) <u>If a hearing is requested:</u></p> <p>(A) <u>The Environmental Quality Council shall issue findings of fact and make a decision on the application within 60 days after the final hearing; and</u></p> <p>(B) <u>The Director will make a decision on the application within fifteen days from receipt of any findings of fact and decision of the Council.</u></p> <p>(iii) <u>In addition to the requirements of W.S. § 35-11-406(p), at the time that any permit or Research and Development Testing License is issued, the Director shall issue a response to objections. This response shall:</u></p> <p>(A) <u>Specify which provisions, if any, of the proposed permit have been changed in the final approved permit, and the reasons for the change;</u></p> <p>(B) <u>Briefly describe and respond to all significant objections on the permit application raised during the public comment period, or during any hearing; and</u></p> <p>(C) <u>Be sent to the applicant and objectors, along with a copy of the Director's decision, and be available to the public.</u></p> <p>(iv) <u>The Administrator will publish a summary of the decision in a newspaper of general circulation in the general area of the proposed operation.</u></p>	<p>40 CFR 124.17 Response to comments.</p> <p>(a) (Applicable to State programs, see 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) At the time that any final permit decision is issued under 124.15, the Director shall issue a response to comments. States are only required to issue a response to comments when a final permit is issued. This response shall:</p> <p>(1) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and</p> <p>(2) Briefly describe and respond to all significant comments on the draft permit or the permit application (for section 404 permits only) raised during the public comment period, or during any hearing.</p> <p>(b) [Only applicable to permits issued by EPA.]</p> <p>(c) (Applicable to State programs, See 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) The response to comments shall be available to the public.</p>

The term "objection" has been used instead of "comment" to reflect the language in W.S. §35-11-406(k).

Subsection 21(c)(iii)(C) was added to provide better definition to the "final written decision" required by W.S. §35-11-406(p) to ensure that the intent of the EPA requirements is met.

Subsection 21(c)(iv) was added to ensure that, given the difference in the EPA and LQD permitting approaches, the intent of the EPA requirements is met. For example, under the EPA approach, the EPA provides for notice of intent to deny a permit. This is necessary, in part, because the EPA, rather than the applicant, is preparing the permit and EPA must get word to the applicant. It also allows for comment on the intent to deny. Under the current LQD approach, only the applicant who prepared the permit receives notice that a permit application has been approved or denied, but unless a hearing is held, no broader notice of that decision is provided. Therefore, Subsection 21(c)(iv) is proposed to ensure that notice of the decision (approval or denial) is given whether or not a hearing is held. (A similar approach has been used in the LQD Coal Rules (Chapter 12, Section 1(ii)(B)).) Objections to either a denial or approval could then be presented in a petition to the Environmental Quality Council (see WDEQ Rules of Practice and Procedure). A copy of the proposed Public Notice Format No. 10 is provided in Attachment C of this proposed rules package.

Chapter 11, Section 21(d) For permit or license revocation, all the provisions of this Chapter shall apply, except that the Director shall cause notice of the revocation to be published.

Under the Wyoming Statutes, all notices are the responsibility of the applicant (e.g., W.S. § 35-11-406(j)), except those notices for permit or license revocation and bond forfeiture for which the Director, Attorney General, and/or EQC have the responsibility (W.S. §§ 35-11-409(b), 412(c), & 421). In keeping with that approach, this proposed rule requires the Director to provide the notices for permit or license revocation for the Class III portions of in situ permits or licenses.

The authority to adopt these rules is provided under W.S. §§ 35-11-109(a)(i)&(x), 35-11-112(a)(i)&(iv), 35-11-402(a)(x), 35-11-406(g),(j), (k), & (p), 35-11-409(b), 35-11-412(c), 35-11-421(b), 35-11-431(a)(vi), 35-11-701, and 16-3-107(b).

27. Proposed Rule Amendment: Chapter 11, Section 22

Section 8 22. Confidential Records.

(a) Information submitted to satisfy the requirements of this Chapter may be held confidential pursuant to W.S. § 35-11-1101.

The EPA rules specify that the name and address of any permit applicant or permittee cannot be held confidential (40 CFR 144.5(b)(1)) and water quality information cannot be held confidential (40 CFR 144.5(b)(2)). The Wyoming statutes (W.S. §35-11-1101) only allow trade secrets to be held confidential, specifically exclude "emission and pollution data," and do not allow prevention of disclosure to regulatory agencies. Therefore, the existing rule is considered to cover the specific EPA concerns. W.S. §35-11-1101(a)&(b) read:

"(a) Any records, reports or information obtained under this act or the rules, regulations and standards promulgated hereunder are available to the public. Upon a showing satisfactory to the director by any person that his records, reports or information or particular parts thereof, other than emission and pollution data, to which the director and administrators have access under this act if made public would divulge trade secrets, the director and administrators shall consider the records, reports or information or particular portions thereof confidential in the administration of this act.

(b) Nothing herein shall be construed to prevent disclosure of any records, reports or information to federal, state or local agencies necessary for the purposes of administration of any federal, state or local air, water or land control measures or regulations or when relevant to any proceedings under this act."

The symbol for section (§) was added for consistency with other statute citations.

The authority to amend this rule is provided by W.S. §§ 35-11-112(a)(i), 35-11-406(d), and 35-11-1101.