

US EPA ARCHIVE DOCUMENT

**MINE PLACEMENT OF COAL COMBUSTION WASTE
STATE PROGRAM ELEMENTS ANALYSIS**

Final DRAFT
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Mine Placement of Coal Combustion Waste State Program Elements Analysis

This document summarizes elements of State regulatory programs applicable to the placement of coal combustion waste (CCW) in surface or underground mines. *This document does not comment on the adequacy of individual State programs*; it summarizes the program elements of the State programs. This analysis is in the form of tables that identify the program elements pertaining to mine placement oversight in each State for coal mines and noncoal mines (e.g., sand, gravel, limestone, clay).

The information presented in this document is summarized from the detailed analysis conducted in *Regulation and Policy Concerning Mine Placement of Coal Combustion Waste in Selected States* (DRAFT, August 2002). The States covered in that document include:

- The States with the largest number of coal mines, which includes all of the members and associate members of the Interstate Mining Compact Commission (IMCC), except North Carolina, South Carolina, and New Mexico, and
- The States with the greatest estimated likelihood of CCW placement into noncoal mines.

In total, this document covers all but two of the States covered in the detailed analysis. Louisiana and Utah are not included in this document because there is currently no placement of CCW in coal mines in these States and EPA has not yet identified the applicable regulatory requirements. The Navajo Nation also is not included because it lacks regulatory jurisdiction over mine placement within its boundaries.

The applicable programs in many States operate under the authority of the Federal Surface Mining Control and Reclamation Act of 1977 (SMCRA). SMCRA requires that State regulations for coal mines be at least as stringent as Federal regulations promulgated by the U.S. Department of Interior Office of Surface Mine Reclamation and Enforcement (OSM). As a result, the tables presented herein use the following conventions to describe program elements:

- For program elements that are included in the Federal SMCRA regulations, the tables show:
 - “S” for States whose program is substantively similar to that required under SMCRA.
 - “S+” for States whose program is more stringent or have requirements in addition to those required under SMCRA.
- For program elements that are not covered by Federal SMCRA regulations, the tables show:
 - An “X” for States whose program includes the program element.
 - A blank for States whose program does not include the program element.
 - “CBC” for States that apply the program element on a case-by-case basis.
 - A question mark for States where the presence of the program element could not be determined by EPA.

The following sections provide a synopsis of the program elements specified in each column of the tables. The program elements for coal mines are presented in Tables 1 through 5 while those for noncoal mines are presented in Tables 6 through 10. The regulatory programs applicable to placement of CCW often differ greatly for coal mines versus noncoal mines because noncoal mines are not regulated under SMCRA. Note that some States have additional program elements that are not covered by the columns in the tables.

Table 1: Administrative Program Elements for COAL MinesAddress CCW in SMCRA Permit

SMCRA requires a permit covering all coal mining and reclamation operations. Sixteen of the 23 States profiled for coal mine placement require that this SMCRA permit specifically address CCW placement (e.g., through identification of the CCW placement areas in the permit application).¹ One State does not address the CCW placement in the SMCRA permit.

Action Item: EPA could not identify whether six of the States explicitly address CCW placement in SMCRA permits.

Type of Revision to SMCRA Permit

When CCW placement is proposed following the issuance of a SMCRA permit, nine of the 23 States treat the proposal as a major permit revision.² Three States treat this as a minor permit revision.³ Three States determine the type of revision on a case-by-case basis.⁴

Action Item: EPA could not identify the type of permit revision for eight of the States.

Additional Permit, Notification, or Approval

Fourteen of the 23 States require some form of regulatory agency approval (e.g., a State solid waste permit) prior to CCW placement in addition to (i.e., outside of) the SMCRA permit.⁵ Two more States determine the need for additional approval on a case-by-case basis (e.g., depending on the characteristics of the CCW).⁶

Public Participation in Permitting

SMCRA requires public participation (public notice, comment, and access to the permit application and final decision) for an application for a permit, a major (but not minor) revision of a permit, or a renewal of a permit. Thus, SMCRA public participation requirements would be applicable to CCW placement projects in States where (1) the SMCRA permit addresses CCW placement, and (2) proposals to place CCW are treated as major permit revisions. Some States have additional public participation provisions (e.g., as part of their solid waste permitting program). In total, 12 of the 23 States incorporate public participation in permitting.⁷ Five more of the 23 States determine the need for public participation on a case-by-case basis.⁸

¹ In six of these States, the need to address CCW placement in the SMCRA permit depends on whether a project is classified as disposal or beneficial use by the State.

² In seven of these States, the determination of the revision as major depends on whether a project is classified as disposal or beneficial use by the State.

³ In two of these States, the determination of the revision as minor depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

⁴ Two of these States determine the type of SMCRA revision on a case-by-case basis depending on whether a project is classified as disposal or beneficial use by the State.

⁵ In five of these States, the need for additional approval depends on whether a project is classified as disposal or beneficial use by the State.

⁶ One of these States determines the need for additional approval on a case-by-case basis depending on whether a project is classified as beneficial use (as opposed to disposal) by the State.

⁷ In six of these States, the need for public participation depends on whether a project is classified as disposal or beneficial use by the State.

⁸ In two of these States, the case-by-case determination of the need for public participation depends on whether the project is classified as beneficial use (as opposed to disposal) by the State.

Action Item: EPA could not identify whether there is public participation for permitting in the other seven States.

Public Availability of Monitoring/Inspection Data

This program element covers whether members of the public have access to ongoing monitoring results and inspection reports. While EPA has not yet completed identification of this program element for all 23 States, it has found that seven of the 23 States do provide public access to items such as ongoing monitoring results and inspection reports.⁹

Action Item: EPA has not yet completed identification of this program element in the other 16 States.

Public Participation in Compliance

This program element covers whether members of the public have the opportunity to participate in compliance assessment or the implementation of compliance activities for projects subject to compliance action. While EPA has not yet completed identification of this program element for all 23 States, it has found that seven of the 23 States do provide opportunity for public participation in compliance.¹⁰

Action Item: EPA has not yet completed identification of this program element in the other 16 States.

Table 2: Planning and Enforcement Program Elements for COAL Mines

Address CCW in Reclamation Plan

SMCRA requires a reclamation plan that provides for the protection of the environment and public safety. Sixteen of the 23 States require that the reclamation plan specifically address CCW placement (e.g., through inclusion of a CCW placement plan).¹¹

Action Item: EPA could not identify whether seven of the States specifically address CCW placement in the reclamation plan.

Address CCW in Site Characterization/PHC Determination

SMCRA requires that the reclamation plan include characterization of the mine site (e.g., geologic and hydrologic information). SMCRA also requires a hydrologic reclamation plan specific to local conditions and a probable hydrologic consequences (PHC) determination. Twelve of the 23 States require that these site characterization and planning activities specifically address CCW placement (e.g., through background monitoring surrounding the placement area).¹²

Action Item: EPA could not determine whether the other 11 States specifically address CCW placement in these activities.

⁹ In three of these States, the public availability of data depends on whether a project is classified as disposal or beneficial use by the State.

¹⁰ In three of these States, the opportunity for public participation depends on whether a project is classified as disposal or beneficial use by the State.

¹¹ In eight of these States, the need to address CCW placement in the reclamation plan depends on whether a project is classified as disposal or beneficial use by the State.

¹² In eight of these States, the need to address CCW placement in the site characterization/PHC determination depends on whether a project is classified as disposal or beneficial use by the State.

Siting Restrictions

SMCRA places restrictions on where surface coal mining operations, in general, may be conducted (e.g., not within 300 feet of occupied dwellings, parks, or public buildings). Fourteen of the 23 States have additional, more stringent location standards specifically for CCW placement.¹³

Address Acid Mine Drainage/Acid-Base Balance

Six of the 23 States have special requirements applicable to CCW placement when acid mine drainage is present or when the placement is designed to remediate acid mine drainage.¹⁴ Examples of such requirements include characterization of the neutralization potential of the CCW or complete acid-base accounting for the CCW and the placement environment.

Formal Risk Assessment Focused on CCW

This means that a formal risk assessment is required as part of the planning process for CCW placement. While EPA has not yet completed identification of this program element for all 23 States, it has found that one of the 23 States has a risk assessment element in place and another State determines the need to do a risk assessment on a case-by-case basis for disposal projects (as opposed to beneficial use).

Action Item: EPA has not yet completed identification of this program element for 16 of the States.

Enforceable Limits/Corrective Action Requirements

SMCRA requires compliance with all applicable Federal and State water quality requirements and with all permit conditions. In the event of noncompliance with a permit condition, permittees must take all possible steps to minimize adverse impacts, including, but not limited to: accelerated or additional monitoring and implementation of compliance measures. Nine of the 23 States have enforceable limits (e.g., numerical standards) specific to CCW placement projects and/or more specific corrective action requirements (e.g., identifying when corrective action is required and/or what measures should be taken) applicable to CCW placement projects.¹⁵

Table 3: Waste Characterization and Monitoring Program Elements for COAL Mines

Waste Characterization

Eighteen of the 23 States require chemical analysis (e.g., through leachate testing) of CCW prior to the start of placement.¹⁶ Eleven of these States also require ongoing characterization during placement (e.g., quarterly, annually, or when the source of the CCW changes).¹⁷ Thirteen States

¹³ In nine of these States, the need to have more stringent siting requirement depends on whether a project is classified as disposal or beneficial use by the State.

¹⁴ In five of these States, the need to address acid mine drainage depends on whether a project is classified as disposal or beneficial use by the State.

¹⁵ In five of these States, the application of enforceable limits and/or corrective action requirements depends on whether a project is classified as disposal or beneficial use by the State.

¹⁶ In nine of these States, the requirement for pre-placement waste characterization depends on whether a project is classified as disposal or beneficial use by the State.

¹⁷ In nine of these States, the requirement for ongoing waste characterization depends on whether a project is classified as disposal or beneficial use by the State.

have specific numerical standards that CCW must meet before being considered acceptable for placement.¹⁸

Groundwater Monitoring

SMCRA requires groundwater monitoring to be designed on a site-specific basis based on the PHC determination. At a minimum, SMCRA requires monitoring for four parameters, with submission of data every three months, that continues until bond release. Twelve of the 23 States have additional or more stringent requirements (e.g., more minimum parameters, specific monitoring of the CCW placement area) for monitoring during CCW placement.¹⁹ Five more States determine the need for additional monitoring for CCW placement projects during placement on a case-by-case basis.²⁰ Six of the 11 States extend their more stringent monitoring requirements to the post-closure period.²¹ Six more States determine the need for additional post-closure monitoring on a case-by-case basis.²²

Action Item: EPA could not determine the applicability of post-closure ground-water monitoring for one State.

Surface Water Monitoring

This program element covers whether States require more stringent or additional surface water monitoring than that required by SMCRA. While EPA has not yet completed identification of this program element, it has found that two States have requirements no more stringent than SMCRA for monitoring during placement and post-closure, three States have more stringent requirements than SMCRA, and one State addresses surface water monitoring on a case-by-case basis for beneficial use projects (as opposed to disposal).²³

Action Item: EPA has not yet completed identification of this program element for the other 17 States.

Table 4: Design and Operational Program Elements for COAL Mines

Groundwater Table Restrictions

Eleven of the 23 States require that CCW be placed a certain minimum distance (e.g., eight feet, four feet) above the water table, while two States require it only on a case-by-case basis.²⁴

¹⁸ In nine of these States, the applicability of the waste characteristic limits depends on whether a project is classified as disposal or beneficial use by the State.

¹⁹ In ten of these States, the need for additional or more specific monitoring depends on whether a project is classified as disposal or beneficial use by the State.

²⁰ In one of these States, the possible determination of a need for additional or more specific monitoring depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

²¹ In five of these States, the need for additional or more specific post-closure monitoring depends on whether a project is classified as disposal or beneficial use by the State.

²² In three of these States, the possible determination of a need for additional or more specific post-closure monitoring depends on whether a project is classified as disposal or beneficial use by the State.

²³ In three of the States with surface water monitoring requirements that are more stringent than SMCRA, the applicability of the requirements depends on whether a project is classified as disposal or beneficial use by the State.

²⁴ In eight of these States, the applicability of the groundwater table restrictions depends on whether a project is classified as disposal or beneficial use by the State.

Compaction or Other Waste Conditioning

Six of the 23 States have requirements regarding compaction of CCW during placement.²⁵ Four of these States require compaction; the other two require that applicants describe procedures for compaction in the operating plan. In addition, four States require compaction on a case-by-case basis.²⁶

Interim Cover

Two of the 23 States require periodic (e.g., daily) cover over the CCW during placement (for disposal projects only, as opposed to beneficial use), while two require it on a case-by-case basis.²⁷

Fugitive Dust Controls

SMCRA requires an air pollution control plan for mine sites. Eleven of the 23 States have explicit requirements for fugitive dust control specifically for CCW placement.²⁸

Erosion/Surface Runoff Controls

SMCRA requires that disturbed areas be backfilled and graded to minimize erosion and water pollution. Eight of the 23 States have explicit requirements for erosion or runoff controls specifically for CCW placement areas.²⁹

Table 5: Closure and Post-Closure Program Elements for COAL Mines

Final Cover

SMCRA requires a minimum of 2 feet of soil cover for final disposal of noncoal mine waste. Eight of the 23 States specifically require final cover over CCW placement areas.³⁰

Revegetation

SMCRA requires revegetation over areas used for final disposal of noncoal mine waste. One State has specific standards for revegetation of CCW placement areas for projects classified as disposal (as opposed to beneficial use) by the State.

Financial Assurance/Bonding

SMCRA requires a performance bond that covers the entire permit area, with release contingent on successful completion of the reclamation plan, including revegetation. Four of the 23 States have more specific or stringent financial assurance requirements (e.g., specific financial assurance for the CCW placement project, a liability period that extends beyond the SMCRA

²⁵ In five of these States, the need for compaction or other waste conditioning depends on whether a project is classified as disposal or beneficial use by the State.

²⁶ In three of these States, potential requirements for compaction or other waste conditioning depend on whether a project is classified as disposal or beneficial use.

²⁷ In these two States, potential requirements for interim cover depend on whether a project is classified as disposal or beneficial use.

²⁸ In nine of these States, the need for fugitive dust controls depends on whether a project is classified as disposal or beneficial use by the State.

²⁹ In five of these States, the need for specific erosion control requirements depends on whether the project is classified as disposal or beneficial use by the State.

³⁰ In six of these States, the need for specific final cover requirements depends on whether the project is classified as disposal or beneficial use by the State.

liability period).³¹ Four more States determine the need for more stringent financial assurance requirements on a case-by-case basis.

Post-closure Site Utilization Restrictions

This program element covers whether States place restrictions on the post-closure use of CCW placement areas. While EPA has not yet completed identification of this program element, it has found that one State does place site utilization restrictions for disposal projects (as opposed to beneficial use) and another State places such restrictions for beneficial use projects.

Action Item: EPA has not yet completed identification of this program element for 18 of the States.

Table 6: Administrative Program Elements for NONCOAL Mines

Mining Permit Specifically Addressing CCW

A SMCRA permit is not required for noncoal mining, however, a majority of States do require some type of permit coverage for noncoal mining and reclamation operations. Fourteen of the 26 States profiled for noncoal mine placement require that the State mining permit specifically address CCW placement (e.g., through identification of the CCW placement areas in the permit application).³²

Solid Waste Disposal Permit

In seven of the 26 States, a solid waste disposal permit is required in addition to a State mining permit.³³ An additional 11 of the 26 States require a solid waste permit but no mining permit.³⁴ Four of the 26 States require a solid waste disposal permit on a case-by-case basis.³⁵

Other Notification or Approval

Eight of the 26 States require some form of regulatory agency notification or approval prior to CCW placement.³⁶ Two of these States require it in addition to (i.e., outside of) the State mining permit, one State requires it in addition to the State solid waste permit, and another State requires it in addition to both the State mining permit and solid waste permit. One State determines the need for additional approval on a case-by-case basis (e.g., depending on the characteristics of the CCW).

Public Participation in Permitting

Similar to SMCRA permits, State mining and solid waste permits often require public participation (public notice, comment, and access to the permit application and final decision) for an application for a permit, a major (but not minor) revision of a permit, or a renewal of a

³¹ Three of these States have specific financial assurance requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

³² In two of these States, the requirement to obtain a mining permit depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

³³ In two of these States, the requirement to obtain a solid waste permit depends on whether a project is classified as disposal or beneficial use by the State.

³⁴ In five of these States, the requirement to obtain a solid waste permit depends on whether a project is classified as disposal (as opposed to beneficial use) by the State.

³⁵ In one of these States, the potential requirement to obtain a solid waste permit depends on whether a project is classified as disposal (as opposed to beneficial use) by the State.

³⁶ In four of these States, the requirement to provide additional notification or approval depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

permit. In total, 21 of the 26 States incorporate public participation in permitting.³⁷ An additional two States determine the need for public participation on a case-by-case basis.³⁸

Public Availability of Monitoring/Inspection Data

This program element covers whether members of the public have access to ongoing monitoring results and inspection reports. While EPA has not completed identification of this program element, it has found that four States do make such information available.³⁹

Action Item: EPA has not yet completed identification of this program element for the other 22 States.

Public Participation in Compliance

This program element covers whether members of the public have the opportunity to participate in compliance assessment or the implementation of compliance activities for projects subject to compliance action. While EPA has not completed identification of this program element, it has found that four States do provide opportunity for public participation.⁴⁰

Action Item: EPA has not yet completed identification of this program element for the other 22 States.

Table 7: Planning and Enforcement Program Elements for NONCOAL Mines

Reclamation Plan Specifically Addressing CCW

Fourteen of the 26 States require that the reclamation plan (where required) specifically address CCW placement (e.g., through inclusion of a CCW placement plan).⁴¹

Action Item: EPA could not determine whether one of the States specifically addresses CCW placement in a reclamation plan.

Site Characterization Specifically Addressing CCW

Eight of the 26 States require that site characterization and planning activities (e.g., geologic and hydrologic information) specifically address CCW placement (e.g., through background monitoring surrounding the placement area).⁴² In addition, one States requires site characterization on a case-by-case basis.⁴³

³⁷ In five of these States, public participation requirements depend on whether a project is classified as disposal or beneficial use by the State.

³⁸ In one of these States, the potential for public participation in the permitting process depends on whether the project is defined as disposal (as opposed to beneficial use) and in another State it depends on whether CCW placement will occur in an abandoned (as opposed to active) mine.

³⁹ In one of these States, public availability of monitoring/inspection data depends on whether CCW placement will occur in an active (as opposed to abandoned) mine.

⁴⁰ In one of these States, public availability of monitoring/inspection data depends on whether CCW placement will occur in an active (as opposed to abandoned) mine.

⁴¹ In two of these States, the need to address CCW placement in the reclamation plan depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

⁴² In one of these States, the need to address CCW placement in the site characterization depends on whether a project is classified as beneficial use (as opposed to disposal) by the State.

⁴³ In one of these States, the potential application of site characterization requirements depends on whether the project is classified as disposal (as opposed to beneficial use).

Action Item: EPA could not determine whether five of the States specifically address CCW placement in these activities.

Siting Restrictions

Twenty-one of the 26 States place restrictions on where surface mining operations, in general, may be conducted (e.g., not within 300 feet of occupied dwellings, parks, or public buildings).⁴⁴ In addition, three States place restrictions on a case-by-case basis.

Enforceable Limits/Corrective Action Requirements

Eighteen of the 26 States have enforceable limits (e.g., numerical standards) specific to CCW placement projects and/or more specific corrective action requirements (e.g., identifying when corrective action is required and/or what measures should be taken) applicable to CCW placement projects in noncoal mines.⁴⁵ In two States, enforceable limits and corrective action requirements are applied on a case-by-case basis.

Formal Risk Assessment Focused on CCW

This means that a formal risk assessment is required as part of the planning process for CCW placement. EPA has not yet completed identification of this program element, but it has found that one State does perform a risk assessment for CCW placement.

Action Item: EPA has not yet completed identification of this program element for 20 of the States.

Table 8: Waste Characterization and Monitoring Program Elements for NONCOAL Mines

Waste Characterization

Fifteen of the 26 States require chemical analysis (e.g., through leachate testing) of CCW prior to the start of placement.⁴⁶ Seven of these States also require ongoing characterization during placement (e.g., quarterly, annually, or when the source of the CCW changes).⁴⁷ Two States require prior chemical analysis only on a case-by-case basis, with one of them also determining ongoing characterization on a case-by-case basis. Twelve States have specific numerical standards that CCW must meet before being considered acceptable for placement.⁴⁸ Two States apply waste characteristic limits on a case-by-case basis.⁴⁹

⁴⁴ In seven of these States, the need to adhere to siting restrictions depends on whether a project is classified as disposal (as opposed to beneficial use) by the State.

⁴⁵ In five of these States, the enforceable limits/corrective action requirements apply only to projects that are defined as disposal (as opposed to beneficial use) by the State. In another one of these states, these requirements apply only to active (as opposed to abandoned) mines.

⁴⁶ In five of these States, the applicability of pre-placement waste characterization depends on whether a project is classified as disposal or beneficial use by the State. In another one of these States, it applies only to active (as opposed to abandoned) mines

⁴⁷ In three of these States, the applicability of the ongoing waste characterization is required only for projects classified as disposal (as opposed to beneficial use) by the State.

⁴⁸ In five of these States, the applicability of the waste characteristic limits depends on whether a project is classified as disposal or beneficial use by the State.

⁴⁹ In one of these States, the waste characteristic limits are potentially applicable only to projects classified as disposal (as opposed to beneficial use), while in the other they are potentially applicable only to active (as opposed to abandoned) mines.

Groundwater Monitoring

Fifteen of the 26 States have requirements for ground water monitoring during CCW placement and 13 of these extend the requirements to the post-closure period.⁵⁰ Another of these extends the requirements to the post-closure period always for abandoned mines and on a case-by-case basis for active mines. Eight more States determine the need for monitoring for CCW placement projects during placement on a case-by-case basis and all determine the need for post-closure monitoring on a case-by-case basis, as well.⁵¹

Surface Water Monitoring

Six of the 26 States have requirements for surface water monitoring during CCW placement⁵² and four out of the six extend the requirements to the post-closure period. An additional four of the 26 States determine surface water monitoring requirements on a case-by-case for the placement and post-closure periods.

Action Item: EPA has not yet determined this program element for eight States.

Table 9: Design and Operational Program Elements for NONCOAL Mines

Groundwater Table Restrictions

Nine of the 26 States require that CCW be placed a certain minimum distance (e.g., eight feet, four feet) above the water table.⁵³ An additional three States determine the need for groundwater table restrictions on a case-by-case basis.⁵⁴

Action Item: EPA has not yet determined this program element for two States.

Compaction or Other Waste Conditioning

Thirteen of the 26 States have requirements regarding compaction of CCW during placement.⁵⁵ One additional State determines the need for compaction on a case-by-case basis.

Action Item: EPA has not yet determined this program element for two States.

⁵⁰ In four of these States, the need for ground water monitoring depends on whether a project is classified as disposal (as opposed to beneficial use) by the State.

⁵¹ Two of these States, the potential applicability of ground water monitoring requirements depends on whether the project is classified as disposal (as opposed to beneficial use) by the State. In another one of these States, the requirements may apply only when placement is to occur in an active (as opposed to abandoned) mine.

⁵² In one of these States, the need for ground water monitoring depends on whether a project is classified as disposal (as opposed to beneficial use) by the State.

⁵³ In three of these States, the applicability of the water table restrictions depends on whether a project is classified as disposal or beneficial use by the State. Another one of these States applies restrictions only to open cut mines.

⁵⁴ In one of these States, the potential applicability of groundwater table restrictions depends on whether the project will be occurring in an active (as opposed to abandoned) mine. In another one of these States, the potential applicability of groundwater table restrictions depends on whether a project is classified as disposal or beneficial use.

⁵⁵ Three of these States requires compaction only for projects that are defined as disposal (as opposed to beneficial use) by the State. In another one of these States, the potential applicability of compaction depends on whether the project will be occurring in an abandoned (as opposed to active) mine.

Interim Cover

Nine of the 26 States require periodic (e.g., daily) cover over the CCW during placement.⁵⁶ An additional six States determine the need for periodic cover on a case-by-case basis.⁵⁷

Fugitive Dust Controls

Sixteen of the 26 States have explicit requirements for fugitive dust control specifically for CCW placement.⁵⁸ An additional two States determine the need for fugitive dust controls on a case-by-case basis.⁵⁹

Action Item: EPA has not yet determined this program element for two States.

Erosion/Surface Runoff Controls

Eighteen of the 26 States have explicit requirements for storm water erosion or runoff controls specifically for CCW placement areas.⁶⁰ An additional four States determine erosion and runoff controls on a case-by-case basis.⁶¹

Table 10: Closure and Post-Closure Program Elements for NONCOAL Mines

Final Cover

Nineteen of the 26 States specifically require some type of final cover over CCW placement areas.⁶² An additional four States determine the need to apply final cover requirements on a case-by-case basis.⁶³

Action Item: EPA has not yet determined whether this element is applicable in one of the States.

⁵⁶ Two of these States requires interim cover only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁵⁷ Three of these States potentially require interim cover only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁵⁸ In five of these States, the fugitive dust control requirements depend on whether a project is classified as disposal (as opposed to beneficial use) by the State. In another one of these States, the requirements apply only when the CCW placement will occur in a hard rock mine.

⁵⁹ One of these States potentially applies the fugitive dust control requirements only to active (as opposed to abandoned) mines.

⁶⁰ Three of these States have specific erosion control requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁶¹ One of these States may require specific erosion control requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State, while another one of these States may apply the requirements only to CCW placement in active mines.

⁶² Five of these States have specific final cover requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁶³ One of these States potentially requires specific final cover requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

Revegetation

Twenty of the 26 States have specific standards for revegetation of CCW placement areas.⁶⁴ An additional three States determine the applicability of revegetation requirements on a case-by-case basis.⁶⁵

Action Item: EPA has not yet determined whether this element is applicable in one of the States.

Financial Assurance/Bonding

Seventeen of the 26 States have financial assurance requirements (e.g., specific financial assurance for the CCW placement project, a liability period that extends beyond completion of reclamation) for CCW placement in noncoal mines.⁶⁶ Four more States determine the need for financial assurance requirements on a case-by-case basis.⁶⁷

Post-closure Site Utilization Restrictions

This program element covers whether States place restrictions on the post-closure use of CCW placement areas. Although EPA has not yet completed identification of this program element, it has found that one State has in place such restrictions and another State applies such restrictions to CCW placement in active (as opposed to abandoned) mines.

Action Item: EPA has not yet completed identification of this program element for 22 States.

⁶⁴ In six of these States, the applicability of the revegetation requirements depends on whether a project is classified as disposal or beneficial use by the State.

⁶⁵ Two of these States potentially require revegetation requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁶⁶ Two of these States have financial assurance requirements only for projects that are defined as disposal (as opposed to beneficial use) by the State.

⁶⁷ One of these States potentially requires financial assurance only for projects that are defined as disposal (as opposed to beneficial use) by the State.

Table 1. Administrative Program Elements: COAL Mines

State	Permitting				Public Availability of Monitoring/ Inspection Data	Public Participation in Compliance
	Address CCW in SMCRA Permit	Type of Revision to SMCRA Permit	Additional Permit, Notification or Approval	Public Participation in Permitting		
AL	X	Major		X	?	?
AK	?	?	X	?	?	?
AR [1]	?	?	X	?	?	?
AZ [4]	?	?	CBC	?	?	?
CO	X	?	X	X	X	X
IL	D	Major	X	X	X	X
	BU	CBC	X	CBC	X	X
IN	D	Major	X	X	X	X
	BU	None	X		X	X
KS [1]	?	?	X	?	?	?
KY - D [2]	X	CBC		CBC	?	?
MD	X	Minor		CBC	?	?
MO - BU [2]	X	Major	X	X	?	?
MT	X	CBC		CBC	?	?
NM	?	?		?	?	?
ND	D	Major	X	X	X	X
	BU	Minor	X		X	X
OH - BU [2]	X	Major	X	X	X	X
OK - AB - D [5]		None	X	X	X	X
PA - BU [3]	X	Major	X	X	X	X
TN [1][4]	X	?	X	?	?	?
TX	D	None	X	X	?	?
	BU	?		?	?	?
VA - BU [1][2]	X	Major	CBC	X	?	?
WA [4]	?	?	X	?	?	?
WV - BU [2]	X	Minor		CBC	?	?
WY	X	Major		X	?	?

Notes for States Column:

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- [5] Proposed regulations are pending, information presented is based on the program elements that currently apply
- D Program elements specific to projects defined as disposal by the State
- BU Program elements specific to projects defined as beneficial use by the State
- AB Program elements specific to projects in abandoned coal mines

Key to Table Entries:

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- S+ State's program element is more stringent/in addition to that required under SMCRA
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- ? Presence of program element could not be determined by EPA
- Shaded EPA has not yet completed research on program elements in shaded columns

Table 2. Planning and Enforcement Program Elements: COAL Mines

State	Address CCW in Reclamation/Operational Plan	Address CCW in Site Characterization/PHC Determination	Siting Restrictions	Address Acid Mine Drainage/Acid-Base Balance	Formal Risk Assessment Focused on CCW	Enforceable Limits/Corrective Action Requirements
AL	?	?	S		?	S
AK	?	?	S+		?	S
AR [1]	?	?	S		?	S
AZ [4]	?	?	S		?	S+
CO	X	X	S+	X	X	S+
IL	D	X	S+	X	CBC	S+
	BU	X	S	CBC		S
IN	D	X	S+	X		S+
	BU	X	S			S
KS [1]	X	X	S+		?	S
KY - D [2]	X	X	S+		?	S+
MD	X	?	S		?	S
MO - BU [2]	X	X	S+		?	S
MT	X	?	S		?	S
NM	X	X	S		?	S
ND	D	X	S+			S+
	BU	X	S			S+
OH - BU [2]	X	X	S+	X		S
OK - AB - D [5]	X	X	S			S
PA - BU [3]	X	X	S+	X		S+
TN [1][4]	?	?	S+		?	S
TX	D	?	S+		?	S+
	BU	X	S		?	S
VA - BU [1][2]	X	X	S+		?	S
WA [4]	?	?	S+		?	S
WV - BU [2]	X	?	S	X	?	S
WY	?	?	S		?	S

Notes for States Column:

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- D Program elements specific to projects defined as disposal by the State
- BU Program elements specific to projects defined as beneficial use by the State
- AB Program elements specific to projects in abandoned coal mines

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Table 3. Waste Characterization and Monitoring Program Elements: COAL Mines

State	Waste Characterization			Groundwater Monitoring		Surface Water Monitoring	
	Prior to Placement	During Placement	Characteristic Limits	During Placement	Post-Closure	During Placement	Post-Closure
AL				S	S	?	?
AK				S+	S+	?	?
AR [1]	X	X	X	CBC	S	?	?
AZ [4]	X			CBC	CBC	?	?
CO	X	X		S	S	S	S
IL	D	X		S+	CBC	S	S
	BU	X	CBC	X	S	S	S
IN	D	X	X	S+	S	S+	S+
	BU			S	S	S	S
KS [1]				CBC	S	?	?
KY - D [2]	X	X	X	S+	S+	?	?
MD	X		X	S	S	?	?
MO - BU [2]	X	X	X	S+	CBC	?	?
MT	X		X	CBC	CBC	?	?
NM	X			S+	CBC	?	?
ND	D	X		S+	S+	?	?
	BU	X	X	CBC	CBC	?	?
OH - BU [2]	X	X	X	S+	S+	S+	S+
OK - AB - D [5]	X	X	CBC	S+	?	S+	?
PA - BU [3]	X	X	X	S+	S+	CBC	CBC
TN [1][4]			X	CBC	CBC	?	?
TX	D	X	X	S+	S+	?	?
	BU			S	S	?	?
VA - BU [1][2]	X		X	S	S	?	?
WA [4]				S+	S	?	?
WV - BU [2]	X	X	X	S	S	?	?
WY	X			S	S	?	?

Notes for States Column:

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- D Program elements specific to projects defined as disposal by the State
- BU Program elements specific to projects defined as beneficial use by the State
- AB Program elements specific to projects in abandoned coal mines

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Table 4. Design and Operational Program Elements: COAL Mines

State		Groundwater Table Restrictions	Compaction or Other Waste Conditioning	Interim Cover	Fugitive Dust Controls	Erosion/Surface Runoff Controls
AL					S	S
AK		X			S	S
AR [1]					S	S
AZ [4]					S	S
CO		X	CBC		S	S
IL	D	CBC	CBC		S+	S+
	BU				S+	S+
IN	D				S+	S
	BU				S	S
KS [1]				S	S	
KY - D [2]		X			S+	S
MD					S	S
MO - BU [2]		X	X		S+	S+
MT					S	S+
NM					S	S+
ND	D	X	X	X	S+	S+
	BU				S	S
OH - BU [2]		X	CBC		S	S
OK - AB - D [5]		X		CBC	S+	S+
PA - BU [3]		X	CBC	CBC	S+	S+
TN [1][4]		X	X		S+	S
TX	D	X	X	X	S+	
	BU				S	S
VA - BU [1][2]		X	X		S+	S+
WA [4]					S	S
WV - BU [2]			X		S+	S
WY		CBC			S	S

Notes for States Column:

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Table 5. Closure and Post-Closure Program Elements: COAL Mines

State		Final Cover	Revegetation	Financial Assurance/ Bonding	Post-closure Site Utilization Restrictions
AL		S	S	S	?
AK		S	S	S+	?
AR [1]		S	S	S	?
AZ [4]		S	S	CBC	?
CO		S	S	CBC	?
IL	D	S+	S	S	
	BU	S+	S	S	
IN	D	S+	S	S	
	BU	S	S	S	
KS [1]		S	S	CBC	?
KY - D [2]		S+	S	S+	?
MD		S	S	S	?
MO - BU [2]		S	S	S	?
MT		S	S	S	?
NM		S+	S	S	?
ND	D	S+	S+	S+	X
	BU	S	S	S	
OH - BU [2]		S	S	S	
OK - AB - D [5]		S+	S	S	
PA - BU [3]		S+	S	S	X
TN [1][4]		S	S	CBC	?
TX	D	S+	S	S+	?
	BU	S	S	S	?
VA - BU [1][2]		S	S	S	?
WA [4]		S	S	S	?
WV - BU [2]		S	S	S	?
WY		S	S	S	?

Notes for States Column:

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Table 6. Administrative Program Elements: NONCOAL Mines

State	Permitting				Public Availability of Monitoring/ Inspection Data	Public Participation in Compliance
	Mining Permit Specifically Addressing CCW	Solid Waste Disposal Permit	Other Notification or Approval	Public Participation in Permitting		
AL [1]	X				?	?
AZ		CBC	CBC	X	?	?
CO	X	X		X	?	?
FL [1]		X		X	?	?
GA [1]	X	X		X	?	?
IL [1]	D	X		X	?	?
	BU	X		X	?	?
IN	D	CBC		X	?	?
	BU		X		?	?
IA	D	X			?	?
	BU		X		?	?
KS		X		X	?	?
KY		X		X	?	?
MD	X			X	?	?
MA [2]		CBC			?	?
MI			X		?	?
MN		X		X	?	?
		X		CBC	?	?
MO	D	X			?	?
	BU	X	X	X	?	?
MT	O	X	X	X	?	?
	HR	X	X	X	?	?
NE [1][2]			X		?	?
NY	X	X	X	X	X	X
ND [1]		X		X	X	X
OH [1]	D	X	X		?	?
	BU	X		X	?	?
OK [2]	X			X	X	X
PA	A	X	CBC	X	X	X
	AB	X	CBC	X	?	?
TN [1]	X	X		X	?	?
TX	D		X	X	?	?
	BU					
WV [1]	X	X		X	?	?
WI	A-D	X		X	?	?
	A-BU	X		X	?	?
	AB-D		X		?	?
	AB-BU			X	CBC	?

Notes for States Column:

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- A Programs elements specific to projects in active noncoal mines
- AB Program elements specific to projects in abandoned noncoal mines
- BU Program elements specific to projects defined as beneficial use by the State
- D Program elements specific to projects defined as disposal by the State
- HR Hard Rock mining program
- O Opencut mining program

Key to Table Entries:

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Table 7. Planning and Enforcement Program Elements: NONCOAL Mines

State		Reclamation/ Operational Plan Specifically Addressing CCW	Site Characterization Specifically Addressing CCW	Siting Restrictions	Enforceable Limits/ Corrective Action Requirements	Formal Risk Assessment Focused on CCW
AL [1]		X	?	X	X	?
AZ				CBC	CBC	?
CO		?	X	X	X	?
FL [1]				X	X	?
GA [1]		X	?	X	X	?
IL [1]	D		X	X	X	?
	BU	X	X			?
IN	D			X		?
	BU					?
IA	D			X	X	?
	BU					?
KS				X		?
KY				X	X	?
MD		X	X	X		?
MA [2]						
MI		X	X	X		?
MN				X	X	?
MO	D			X	X	?
	BU	X	X			?
MT	O	X		X	X	?
	HR	X		X	X	?
NE [1][2]						
NY		X		CBC	X	
ND [1]				X	X	
OH [1]	D	X	CBC	X	X	?
	BU	X				?
OK [2]		X	X	CBC	CBC	
PA	A	X	X	X	X	X
	AB	X	X	X		X
TN [1]		X	?	X	X	?
TX	D		?	X	X	?
	BU					
WV [1]		X	X	X	X	?
WI	A-D	X	?	X	X	?
	A-BU	X	?		X	?
	AB-D			X	X	?
	AB-BU				X	?

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Table 8. Waste Characterization and Monitoring Program Elements: NONCOAL Mines

State	Waste Characterization			Groundwater Monitoring		Surface Water Monitoring	
	Prior to Placement	During Placement	Characteristic Limits	During Placement	Post-closure	During Placement	Post-closure
AL [1]	?	?	?	CBC	CBC	CBC	CBC
AZ	CBC		X	CBC	CBC	?	?
CO	X	X		CBC	CBC	?	?
FL [1]				X	X	X	X
GA [1]	?	?	?	X	X	X	X
IL [1]	D	X	X	CBC	CBC	?	?
	BU	X	X				
IN	D	X	X				
	BU						
IA	D			X	X		
	BU						
KS				CBC	CBC	CBC	CBC
KY				X	X	X	X
MD	X	?	X	X	X	?	?
MA [2]							
MI	X		X				
MN	X	X	X	X	X	CBC	CBC
MO	D			X	X		
	BU	X	X				
MT	O			X	X		
	HR			X	X		
NE [1][2]	X		X				
NY	X	X		X	CBC	X	CBC
ND [1]	X			X	X	?	?
OH [1]	D	X	X	CBC	CBC	?	?
	BU						
OK [2]	X	X	CBC	X	?	X	?
PA	A	X	X	X	CBC	CBC	CBC
	AB	X	X	X	X	CBC	CBC
TN [1]			X	CBC	CBC	?	?
TX	D	X	X	X	X	?	?
	BU						
WV [1]				X	X		
WI	A-D	X		X	X	X	X
	A-BU	X		X	X	X	X
	AB-D			X	X		
	AB-BU						

Notes for States Column:

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- HR Hard Rock mining program
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Key to Table Entries:

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- ? Presence of program element could not be determined by EPA
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Table 9. Design and Operational Program Elements: NONCOAL Mines

State		Groundwater Table Restrictions	Compaction or Other Waste Conditioning	Interim Cover	Fugitive Dust Controls	Erosion/Surface Runoff Controls
AL [1]		?	?		?	X
AZ		?	?	CBC	CBC	CBC
CO		X		X	X	X
FL [1]			X	X	X	X
GA [1]			X	CBC	?	X
IL [1]	D	CBC	X	CBC	X	X
	BU					
IN	D			CBC	X	CBC
	BU					
IA	D				X	X
	BU					
KS				X		
KY						X
MD		X	CBC			X
MA [2]						
MI						
MN			X	X	X	X
MO	D	X	X	X	X	X
	BU					
MT	O	X	X	X	X	X
	HR					
NE [1][2]						
NY		CBC	X		X	CBC
ND [1]		X	X	X	X	X
OH [1]	D				X	X
	BU					
OK [2]		?		?	X	X
PA	A	X	CBC	CBC	X	X
	AB					
TN [1]		X	X		X	X
TX	D	X	X	X	X	
	BU					
WV [1]			X	X		X
WI	A-D					X
	A-BU					
	AB-D					
	AB-BU					

Notes for States Column:

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Table 10. Closure and Post-Closure Program Elements: NONCOAL Mines

State		Final Cover	Revegetation	Financial Assurance/ Bonding	Post-closure Site Utilization Restrictions
AL [1]		?	X	X	?
AZ		CBC	CBC	CBC	?
CO		X	X	CBC	?
FL [1]		X	X	X	?
GA [1]		X	X	X	?
IL [1]	D	X	CBC	X	?
	BU		X	X	?
IN	D	CBC	CBC	CBC	?
	BU				?
IA	D	X	X		?
	BU				?
KS		CBC	?	X	?
KY		X	X	X	?
MD		X	X	X	?
MA [2]					
MI		X			?
MN		X	X	X	?
MO	D	X	X	X	?
	BU	X	X	X	?
MT	O	X	X	X	?
	HR	X	X	X	?
NE [1][2]					
NY		CBC	X	X	X
ND [1]		X	X	X	?
OH [1]	D	X	X		?
	BU				?
OK [2]		X	X	X	
PA	A	X	X	X	X
	AB	X	X	X	?
TN [1]		X	X	CBC	?
TX	D	X	X	X	?
	BU				
WV [1]		X	X	X	?
WI	A-D	X		X	?
	A-BU				?
	AB-D	X	X	X	?
	AB-BU				?

Notes for States Column:

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