Ohio Administrative Code

Rule 1501:13-9-04 Protection of the hydrologic system.

Effective: February 14, 2022

(A) General. Mining shall be planned and conducted to minimize disturbance to the prevailing hydrologic balance in both the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, to assure the protection or replacement of water rights, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the requirements of mining and reclamation rules. The chief may require additional preventive, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Mining and reclamation practices that minimize water pollution and changes in flow shall be used in preference to water treatment.

(B) Water quality standards and effluent limitations.

(1) All surface drainage from the disturbed area, including disturbed areas that have been graded, seeded, or planted, shall be passed through a sedimentation pond or a series of sedimentation ponds before leaving the permit area until vegetation is established, at which time vegetation of the area may be the best technology currently available, provided that drainage from the area:

(a) Meets effluent limitations; and

(b) Does not contribute suspended solids to streamflow.

(2) Sedimentation ponds and other treatment facilities shall be maintained until the quality of the untreated drainage from the disturbed area meets the applicable state and federal water quality standard requirements.

(3) The chief may grant exemptions from the requirements of paragraph (B)(1) of this rule only when:

(a) The chief determines that the disturbed drainage area relative to the total disturbed area is small;

(b) Alternative sediment control measures are provided, if required by the chief; and

(c) The operator demonstrates that the drainage from the disturbed area will meet the effluent limitations of mining and reclamation rules.

(4) For the purposes of this rule only, "disturbed area" shall not include those areas in which only diversion ditches, sedimentation ponds, or roads are installed in accordance with this rule and rule 1501:13-10-01 of the Administrative Code and the upstream area is not otherwise disturbed by the person who conducts coal mining operations.

(5) Before mining commences in any watershed:

(a) A proper sediment control system including sedimentation ponds, diversions, and other treatment methods shall be constructed; and

(b) Upon completion of construction, this sediment control system shall be certified by an engineer or jointly by an engineer and a surveyor, to the extent such joint certification is required or permitted by the chief, as meeting the dimensions and design criteria set forth in the engineering plans, drawings, and design details submitted as part of the application for a permit.

(6) Point source discharge of water from areas disturbed by coal mining operations shall be made in compliance with effluent limitations of all applicable federal and state laws and regulations. All other surface drainage shall not cause additional contributions of suspended solids to streamflows.

(7) Where the sedimentation pond or series of sedimentation ponds is used so as to result in the mixing of drainage from the disturbed areas with drainage from other areas not disturbed by current surface coal mining and reclamation operations, the permittee shall achieve the effluent limitations for all of the mixed drainage when it leaves the permit area.

(C) All facilities utilized by an operator to achieve compliance with federal and state water quality laws shall be properly installed, maintained and operated so that they will perform the functions for which they were designed, and shall be removed in accordance with this rule when no longer

needed, unless they have been approved as part of the postmining land use.

(D) Sediment control measures.

(1) The purpose of this rule is to meet the applicable state and federal effluent limitations by means of a combination of sediment control measures which, taken together, comprise a complete sediment control system.

(2) Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to:

(a) Prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area;

(b) Meet the more stringent of applicable state or federal effluent limitation; and

(c) Minimize erosion to the extent possible.

(3) Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed area shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to:

(a) Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling and grading, and prompt revegetation as required in rule 1501:13-9-15 of the Administrative Code.

(b) Stabilizing the backfill material to promote a reduction in the rate and volume of runoff, in accordance with the requirements of rule 1501:13-9-14 of the Administrative Code;

(c) Retaining sediment within disturbed areas;

(d) Diverting runoff away from disturbed areas;

(e) Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion;

(f) Using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; and

(g) Treating with chemicals.

(E) Stream buffer zones.

(1) No land within one hundred feet, measured horizontally, of a perennial or intermittent stream shall be disturbed unless the chief specifically authorizes coal mining operations closer to or through such a stream. The chief may authorize such operations only upon making a finding under both paragraphs (E)(1)(a) and (E)(1)(b) of this rule or under paragraph (E)(1)(c) of this rule:

(a) The operations will not cause or contribute to the violation of applicable state or federal water quality standards, and will not adversely affect the water quantity and quality or other environmental resources of the stream; and

(b) If there will be a temporary or permanent stream channel diversion, it will comply with paragraph (F) of this rule; or

(c) If restoration of a stream or a portion of a stream on the permit area is not possible, restoration off the permit area by means of mitigation has been approved by the chief under rule 1501:13-13-08 of the Administrative Code.

(2) The area not to be disturbed shall be described as a buffer zone, and the operator shall mark it as specified by paragraph (E) of rule 1501:13-9-01 of the Administrative Code. (F) Diversions.

(1) General requirements.

(a) With the approval of the chief, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria of paragraph (G) of this rule for siltation structure removal, may be diverted away from disturbed areas by means of temporary or permanent diversions. All diversions shall be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions shall not be used to divert water into underground mines without approval of the chief under paragraph (Q) of this rule.

(b) The diversion and its appurtenant structures shall be designed, located, constructed, maintained and used to:

(i) Be stable;

(ii) Provide protection against flooding and resultant damage to life and property;

(iii) Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and

(iv) Comply with all applicable local, state, and federal laws and regulations.

(c) Temporary diversions shall be removed promptly when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process shall be restored in accordance with these rules. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion shall be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement shall not relieve the operator from maintaining water-treatment facilities as otherwise required. A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion shall be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat.

(d) The chief may specify design criteria for diversions to meet the requirements of this rule.

(2) Diversion of perennial and intermittent streams.

(a) Diversion of perennial and intermittent streams within the permit area may be approved by the chief after making the finding relating to stream buffer zones that the diversion will not adversely affect the water quantity and quality and related environmental resources of the stream.

(b) The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion.

(c) The requirements of paragraph (F)(1)(b)(ii) of this rule shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a ten-year, six hour precipitation event for a temporary diversion and a one-hundred-year, six hour precipitation event for a permanent diversion.

(d) A permanent stream-channel diversion or a stream channel restored after the completion of mining shall be designed and constructed using natural channel design techniques so as to restore or approximate the premining characteristics of the original stream channel, including the natural riparian vegetation and the natural hydrological characteristics of the original stream, to promote the recovery and enhancement of the aquatic habitat and to minimize adverse alteration of stream channels on and off the site, including channel deepening or enlargement, to the extent possible.

(e) The design and construction of all stream channel diversions of perennial and intermittent streams shall be certified by an engineer as meeting the performance standards of Chapter 1501:13-9 of the Administrative Code and any design criteria set by the chief.

(3) Diversion of miscellaneous flows.

(a) Miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the chief. Miscellaneous flows shall include ground-water discharges and ephemeral streams.

(b) The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the performance standards set forth in paragraph (F)(1) of this rule.

(c) The requirements of paragraph (F)(1)(b)(ii) of this rule shall be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a two-year, six hour precipitation event for a temporary diversion and a ten-year, six hour precipitation event for a permanent diversion.

(G) Siltation structures.

(1) Definitions. For the purposes of this rule only:

(a) "Siltation structure" means a sedimentation pond, a series of sedimentation ponds, or other treatment facility;

(b) "Disturbed" area shall not include those areas:

(i) In which the only surface mining operations include diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with mining and reclamation rules; and

(ii) For which the upstream area is not otherwise disturbed by the operator; and

(c) "Other treatment facility" means any chemical treatment, such as flocculation, or mechanical structure, such as a clarifier, that has a point-source discharge and that is utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

(2) General requirements.

(a) Additional contributions of suspended solids to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available.

(b) All surface drainage from the disturbed area shall be passed through a siltation structure before leaving the permit area, except as provided in paragraph (B)(3) or (G)(2)(e) of this rule.

(c) Siltation structures for an area shall be constructed before beginning any surface mining operations in that area and, upon construction, shall be certified by an engineer as being constructed as designed and as approved in the reclamation plan.

(d) Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with paragraph (H) of this rule.

(e) Siltation structures shall be maintained until removal is authorized by the chief and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than two years after the last augmented seeding, unless, after vegetation is established, the operator demonstrates and the chief approves under paragraph (E)(1)(g) of rule 1501:13-4-05 or paragraph (E)(1)(f) of rule 1501:13-4-14 of the Administrative Code alternative methods of sediment control as the best technology currently available.

(f) When a siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan and rule 1501:13-9-15 of the Administrative Code.

(3) Sedimentation ponds.

(a) When used, sedimentation ponds shall:

(i) Be used individually or in series;

(ii) Be located as near as possible to the disturbed area and out of perennial streams unless approved by the chief; and

(iii) Be designed, constructed, and maintained to:

(a) Provide adequate sediment storage volume;

(b) Provide adequate detention time to allow the effluent from the ponds to meet state and federal effluent limitations;

(c) Contain or treat the ten-year twenty-four hour precipitation event ("design event") unless a lesser design event is approved by the chief based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations of this rule will be met;

(d) Provide a nonclogging dewatering device adequate to maintain the detention time required under paragraph (G)(3)(a)(iii)(b) of this rule;

(e) Minimize, to the extent possible, short circuiting;

(f) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;

(g) Ensure against excessive settlement;

(h) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-mine waste; and

(i) Be compacted properly.

(4) Other treatment facilities.

(a) Other treatment facilities shall be designed to treat the ten-year, twenty-four-hour precipitation event unless a lesser design event is approved by the chief based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations of this rule will be met.

(b) Other treatment facilities shall be designed in accordance with the applicable requirements of paragraph (G)(3) of this rule.

(H) Impoundments.

(1) General requirements. The requirements of paragraph (H)(1) of this rule apply to both temporary and permanent impoundments.

(a) Impoundments meeting the criteria of 30 C.F.R. 77.216(a) or the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in the U.S. department of agriculture, natural resources conservation service technical release TR-210-60, "Earth Dams and Reservoirs," March 2019, (which is hereby incorporated by reference) shall comply with the design and construction requirements of paragraph (H) of this rule and either paragraphs (H)(1) and (H)(2) of rule 1501:13-4-05 or paragraphs (H)(1) and (H)(2) of rule 1501:13-4-14 of the Administrative Code. Copies of technical release TR-210-60 may be obtained from the "USDA Natural Resources Conservation Service eDirectives" webpage, https://directives.sc.egov.usda.gov/. Copies can be inspected at the division of mineral resources management headquarters office at 2045 Morse road, building H, Columbus, Ohio 43229.

(b) Design certification. The design of impoundments shall be certified in accordance with rule 1501:13-4-05 or 1501:13-4-14 of the Administrative Code as designed to meet the requirements of this rule using current, prudent, engineering practices and any design criteria established by the chief.

(c) Stability.

(i) Impoundments meeting the criteria of 30 C.F.R. 77.216(a) or the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in technical release TR-210-60 shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2.

(ii) Impoundments not meeting the criteria of paragraph (H)(1)(c)(i) of this rule, except for coal mine waste impounding structures, shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions or be designed in accordance with paragraph (H)(2)(c) of rule 1501:13-4-05 or paragraph (H)(2)(c) of rule 1501:13-4-14 of the Administrative Code.

(d) Freeboard. Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume. Impoundments meeting the significant hazard potential or high

hazard potential classification (formerly called class B or C) criteria for dams in technical release TR-210-60 shall comply with the freeboard hydrograph criteria in "Figure 2-2: Table of Minimum Auxiliary Spillway Hydrologic Criteria" in technical release TR-210-60.

(e) Foundation.

(i) Foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundment. For impoundments meeting the size or other criteria of 30 C.F.R. 77.216(a) or the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in technical release TR-210-60, sufficient foundation investigations as well as any necessary laboratory testing shall be performed in order to determine the design requirements for foundation stability.

(ii) All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

(f) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

(g) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

(h)

(i) An impoundment meeting the size or other qualifying criteria of 30 C.F.R. 77.216(a) shall include either a combination of principal and emergency spillways or a single spillway designed and constructed to safely pass a one-hundred-year, six-hour precipitation event, or greater event as specified by the chief.

(ii) An impoundment not meeting the size or other qualifying criteria of 30 C.F.R. 77.216(a) shall include either a combination of principal and emergency spillways or a single spillway designed and constructed to safely pass a twenty-five-year, six-hour precipitation event, or greater event as specified by the chief.

(iii) An impoundment meeting the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in technical release TR-210-60 shall include either a combination of principal and emergency spillways or a single spillway designed and constructed to safely pass the design precipitation event using the auxiliary spillway hydrograph criteria in "Figure 2-2: Table of Minimum Auxiliary Spillway Hydrologic Criteria" in technical release TR-210-60, or greater event specified by the chief.

(iv) Impoundments may use a single open-channel spillway designed and constructed according to paragraph (H)(1)(h)(i), (H)(1)(h)(ii), or (H)(1)(h)(iii) of this rule if the spillway:

(a) Is of nonerodible construction and designed to carry sustained flows; or

(b) Is earth- or grass-lined and designed to carry short-term infrequent flows at nonerosive velocities where sustained flows are not expected.

(i) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users. For permanent impoundments, the vertical portion of the remaining highwall shall also meet the requirements of paragraph (H)(2)(d) of this rule.

(j) Inspections. An engineer or other qualified professional specialist, under the direction of the engineer, shall inspect the impoundment. The engineer or specialist shall be experienced in the construction of impoundments.

(i) Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance security.

(ii) The engineer shall promptly, after each inspection, provide to the chief a certified report that the impoundment has been constructed and maintained as designed in accordance with the approved plan and these rules. The report shall include discussion of any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation and any other

aspects of the structure affecting stability.

(iii) A copy of the report shall be retained at or near the minesite.

(k) Impoundments meeting the significant hazard potential or high hazard potential classification (formerly called class B or C) criteria for dams in technical release TR-210-60 or subject to 30 C.F.R. 77.216 must be examined in accordance with 30 C.F.R. 77.216-3. Other impoundments shall be examined for appearance of structural weakness and other hazardous conditions at least quarterly by a qualified person designated by the operator.

(l) Emergency procedures. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the chief of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the chief shall be notified immediately. The chief shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

(2) Permanent impoundments. A permanent impoundment of water may be created if authorized by the chief in the approved permit based upon the following demonstration:

(a) The size and configuration of such impoundment will be adequate for its intended purposes;

(b) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable state and federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable state and federal water quality standards;

(c) The water level will be sufficiently stable and be capable of supporting the intended use;

(d) Final grading will provide for adequate safety and access for proposed water users. For impoundments where the vertical portion of a highwall remains, the vertical portion shall be located at least eight feet below the low-water line;

(e) The impoundment will not result in the diminution of the quality and quantity of water utilized by

adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses;

(f) The impoundment will be suitable for the approved postmining land use;

(g) The reduced portion of any highwall shall have a final slope appropriate for the postmining land use and shall have a minimum static safety factor of 1.3; and

(h) The face of the reduced portion of any highwall shall be vegetated with species appropriate for the postmining land use.

(3) Temporary impoundments. The chief may authorize the construction of temporary impoundments as part of a mining operation.

(4) Sumps.

(a) Definitions. "Sump" means an excavated temporary impoundment:

(i) Used as:

(a) A secondary structure which discharges into a sedimentation pond, provided the sedimentation pond, in combination with the sump and any other sediment control measures used, achieves the applicable state and federal effluent limitations; or

(b) A primary structure to control the runoff from roads or small drainage exemption areas provided by paragraph (B)(3) of this rule; and

(ii) That has a volume which is compatible with its role within the complete sediment control system.

(b) Sumps are exempt from the requirements of paragraphs (H)(1) to (H)(3) of this rule.

(c) Sump designs shall include size and spillway information and shall address the stability of the structure with respect to public health and safety.

(d) Sumps shall be constructed and maintained to prevent, to the extent possible, additional contributions of suspended solids to runoff outside the permit area.

(e) Before a sump becomes full of sediment, the sediment shall be removed, and the original sump capacity restored.

(I) Discharge structures. Discharges from sedimentation ponds, permanent and temporary impoundments, mine waste disposal areas, and diversions shall be controlled by energy dissipators, riprap channels, and other devices where necessary to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbances to the hydrologic balance. Discharge structures shall be designed according to standard engineering design procedures.

(J) Acid-forming and toxic-forming spoil. Drainage from acid-forming and toxic-forming mine waste materials and spoils into ground and surface water shall be avoided by:

(1) Identifying, burying, and treating where necessary spoil or other materials that, in the judgment of the chief, may be detrimental to vegetation or may adversely affect water quality if not treated or buried;

(2) Preventing water from coming into contact with acid-forming and toxic-forming materials in accordance with paragraph (J) of rule 1501:13-9-14 of the Administrative Code, and other measures as required by the chief; and

(3) Burying or otherwise treating all acid-forming or toxic-forming spoil within thirty days after it is first exposed on the mine site, or within a lesser period designated by the chief. Temporary storage of the spoil may be approved by the chief upon finding that burial or treatment within thirty days is not feasible and will not result in any material risk of water pollution or other environmental damage. Storage shall be limited to the period until burial or treatment becomes feasible. Acid-forming or toxic-forming spoil to be stored shall be placed on impermeable material and protected from erosion and contact with surface water.

(K) Ground-water protection.

(1) Backfilled materials shall be placed so as to minimize contamination of ground-water systems with acid, toxic, or otherwise harmful mine drainage, minimize adverse effects of mining on ground-water systems outside the permit area, and to support approved postmining land uses.

(2) To control the effects of mine drainage, pits, cuts, and other mine excavations or disturbances shall be located, designed, constructed, and utilized in such manner as to prevent or control discharge of acid, toxic, or otherwise harmful mine drainage waters into ground-water systems and to prevent adverse impacts on such ground-water systems or on approved postmining land uses.

(L) Protection of ground-water recharge capacity. Other than underground mining operations, all coal mining operations shall be conducted in a manner that facilitates reclamation which will restore approximate premining recharge capacity, through restoration of the capability of the reclaimed areas as a whole, excluding coal processing waste and underground development waste disposal areas and fills, to transmit water to the ground-water system. The recharge capacity shall be restored to a condition which:

(1) Supports the approved postmining land use;

(2) Minimizes disturbances to the prevailing hydrologic balance in the permit and adjacent areas; and

(3) Provides a rate of recharge that approximates the premining recharge rate.

(M) Surface water protection. In order to protect the hydrologic balance, mining operations shall be conducted according to the plan approved under paragraph (E) of rule 1501:13-4-05 or paragraph (E) of rule 1501:13-4-14 of the Administrative Code, and the following:

(1) Surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage, prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area, and otherwise prevents water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet the requirements of this rule, then the

operator shall use and maintain the necessary water-treatment facilities or water quality controls.

(2) Surface-water quality and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the plan approved under paragraph (E) of rule 1501:13-4-05 or paragraph (E) of rule 1501:13-4-14 of the Administrative Code.

(N) Surface and ground-water monitoring.

(1) Ground-water monitoring.

(a) Surface mining operators shall monitor ground-water levels and the quality of ground water at least quarterly or more frequently as prescribed by the chief, in accordance with the ground-water monitoring plan approved under paragraph (F)(1) of rule 1501:13-4-05 of the Administrative Code, to determine the effects of the coal mining operations on the recharge capacity of reclaimed lands and on the quality and quantity of water in ground-water systems in the permit and adjacent areas.

(i) Monitoring shall include measurements from a sufficient number of wells and springs that are adequate to reflect changes in ground-water quality and quantity resulting from those operations.

(ii) Monitoring shall be adequate to plan for modification of coal mining operations, if necessary, to minimize disturbance of the prevailing hydrologic balance.

(iii) As specified and approved by the chief, the person who conducts surface mining operations shall conduct additional hydrologic tests, including drilling, infiltration tests, and aquifer tests and shall submit the results to the chief, to demonstrate compliance with paragraphs (K) to (N) of this rule.

(b) Underground mining operators shall monitor, at least quarterly or more frequently as prescribed by the chief, the quality and quantity of ground water in the permit and adjacent areas in accordance with the ground-water monitoring plan approved under paragraph (F)(1) of rule 1501:13-4-14 of the Administrative Code. Monitoring of an area shall begin one year before the area is mined, shall continue during mining, and shall continue for at least one year after the area is mined, unless the chief determines that monitoring for a shorter period will allow accurate assessment of the impacts on

the ground water of the area.

(c) Ground-water monitoring shall result in quarterly or more frequent reports to the chief, submitted within two weeks following the close of the quarter, to include analytical results from each sample taken during the quarter. Any sample results which indicate a permit violation shall be reported immediately to the chief, and the operator shall immediately take the actions provided in the approved mining plan pursuant to paragraph (H) of rule 1501:13-5-01 and either paragraph (E) of rule 1501:13-4-05 or paragraph (E) of rule 1501:13-4-14 of the Administrative Code.

(2) Surface-water monitoring.

(a) All surface and underground mining operators shall monitor pond discharges for the national pollutant discharge elimination system (NPDES) permit quarterly in accordance with the monitoring plan submitted under either paragraph (F)(2) of rule 1501:13-4-05 or paragraph (F)(2) of rule 1501:13-4-14 of the Administrative Code and approved by the chief. Monitoring shall:

(i) Be adequate to measure and record accurately water quantity and quality of the discharges from the permit area;

(ii) Include notification to the chief of all analytical results of sample collections indicating non-compliance with a permit condition or applicable standard within five days of receipt of such results. If there is a failure to comply with an effluent limitation set forth in a NPDES permit, the person who conducts coal mining operations shall forward the analytical results concurrently with the written notice of non-compliance; and

(iii) Result in quarterly reports to the chief submitted within two weeks following the close of the quarter, to include analytical results from each sample taken during the quarter. Any sample results which indicate a permit violation will be reported immediately to the chief, and the operator shall immediately take the actions provided in the approved mining plan pursuant to paragraph (H) of rule 1501:13-5-01 and either paragraph (E) of rule 1501:13-4-05 or paragraph (E) of rule 1501:13-4-14 of the Administrative Code.

(b) The chief may require additional surface-water monitoring to be conducted quarterly on the

permit or adjacent areas in accordance with the monitoring plans submitted under paragraph (F)(2) of rule 1501:13-4-05 or paragraph (F)(2) of rule 1501:13-4-14 of the Administrative Code and approved by the chief. The chief shall determine the nature of the data and reporting requirements. Monitoring shall:

(i) Be adequate to measure and record accurately water quantity and quality;

(ii) Include notification to the chief of all analytical results of sample collections indicating non-compliance with a permit condition within five days of receipt of such results; and

(iii) Result in quarterly reports to the chief, submitted within two weeks following the close of the quarter, to include analytical results from each sample taken during the quarter. Any sample results which indicate a permit violation will be reported immediately to the chief, and the operator shall immediately take the actions provided in the approved mining plan pursuant to paragraph (H) of rule 1501:13-5-01 and either paragraph (E) of rule 1501:13-4-05 or paragraph (E) of rule 1501:13-4-14 of the Administrative Code.

(3) Duration of and modifications to monitoring.

(a) Monitoring for ground water and surface water shall be conducted throughout mining and reclamation until final performance security release unless the chief determines, pursuant to paragraph (N)(3)(b)(ii) of this rule, that monitoring is no longer necessary.

(b) Any modification of the monitoring requirements of paragraph (N) of this rule, including the parameters covered and the sampling frequency, shall be made by means of a permit revision pursuant to paragraph (E) of rule 1501:13-4-06 of the Administrative Code. A permit revision may be obtained pursuant to this paragraph if the operator demonstrates, using the monitoring data of this rule, that:

(i) The operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area, water quantity and quality are suitable to support approved postmining land uses, and the water rights of other users have been protected or replaced; or

(ii) Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under paragraph (F) of rule 1501:13-4-05 or paragraph (F) of rule 1501:13-4-14 of the Administrative Code.

(O) Transfer of wells. Before final release of performance security, exploratory or monitoring wells shall be sealed in a safe and environmentally sound manner in accordance with rule 1501:13-9-02 of the Administrative Code. With the prior approval of the chief, wells may be transferred to another party for further use. At a minimum, the conditions of such transfer shall comply with state and local law and the permittee shall remain responsible for the proper management of the well in accordance with rule 1501:13-9-02 of the Administrative Code until performance security release.

(P) Water rights and replacement.

(1) Any person who conducts coal mining operations shall:

(a) Replace the water supply of an owner of interest in real property who obtains all or part of his or her supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source, where the water supply has been affected by contamination, diminution, or interruption proximately resulting from the coal mining operations; and

(b) Reimburse the owner for the reasonable cost of obtaining a water supply from the time of the contamination, diminution or interruption by the operation until the water supply is replaced.

(2) The hydrologic information required in paragraphs (B) to (G) of rule 1501:13-4-04 or paragraphs (B) to (G) of rule 1501:13-4-13 of the Administrative Code shall, at a minimum, be used to determine the extent of the impact of mining on ground and surface water.

(Q) Discharge of water into underground mines.

(1) Discharges into an underground mine are prohibited, unless specifically approved by the chief after a demonstration that the discharge will:

(a) Minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from surface mining operations;

(b) Not result in a violation of applicable water quality standards or effluent limitations;

(c) Be at a known rate and quality which shall meet the effluent limitations of this rule for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the chief; and

(d) Meet with the approval of MSHA.

(2) Discharges shall be limited to the following:

(a) Water;

(b) Coal processing waste;

(c) Fly ash from a coal-fired facility;

(d) Sludge from an acid-mine-drainage treatment facility;

(e) Flue-gas desulfurization sludge;

(f) Inert material used for stabilizing underground mines; and

(g) Underground mine development wastes.

(R) Postmining rehabilitation of sedimentation ponds, diversions, impoundments and treatment facilities. Before abandoning a permit area or seeking performance security release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of these rules for permanent structures, have been maintained properly, and meet the requirements of

the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structure if necessary to meet requirements of these rules and to conform to the approved reclamation plan.

(S) For dates of federal rules and federal laws referenced in this rule, see rule 1501:13-1-14 of the Administrative Code.