5 NPDES

National Pollutant Discharge Elimination System

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SUBJECT:	**Procedure for Coal Related National Pollutant Discharge Elimination System ("NPDES")**
DATE:	**January 1997**

See the NPDES Permitting Handbook for further details such as permitting requirements, procedures and policies.

Applicants are encouraged to meet with the regional office staff to discuss the proposed operations, especially those items which are time consuming, i.e., baseline water quality (BWQ) samples, drill holes, acid base accounting locations, etc. Applications that contain complete and accurate information will minimize the review time. Below is a brief description of what is required for a new or reissuance NPDES application for coal and related facilities.

APPLICANT:

- Submit one original and four copies of completed MR-5 application with all appropriate modules *(all types of NPDES application)* to the appropriate DEP Regional Office.
- Submit filing fee in the amount of $1,000.00 for new application (MR-5) and $1,000.00 for reissuance/renewal application. A $500.00 filing fee is required for modifications. No filing fee is required for transfers.
- Submit proof of advertisement *(certification of publication)* for major modifications only.
- Submit proof of affected agencies notification *(affidavit)* for major modifications only.

DEP:

- Application is reviewed by the Regional NPDES Permit Writer
- Draft permit is prepared when application is deemed complete by Permit Writer.
- Applicant is notified in writing to being advertisement;
- Applicant is provided list of affected agencies to be notified;
- The following shall be prepared and forwarded to Headquarters:
    - Original EPA transmittal letter*
    - one copy of the draft permit *(stamped "draft")* *
    - one copy of the fact sheet *(if required)*
    - one copy of the rationale page*
    - one copy of application
    - PCS facility data cards
    - GPP tracking sheet

- *Headquarters will forward EPA these items along with the advertisement form.
- One copy of application is made available for public review in regional office;
- Requests for public hearings received during comment period are to be forwarded to DMR Headquarters for consideration.
- Permit Writer responds to the applicant's comments to the Draft via certified mail. The Permit Writer prepares a response for the signature of the Director of DWWR for any public comments received during the comment period.
- Decision: The following items must be completed and included with original application and forwarded to Headquarters*:*
    - Proof of Advertisement
    - Affidavit of Notification to Affected Agencies
    - Response to Comments
    - Permit
    - Recommendations for issuance or denial

SUBJECT:	**Groundwater Protection Act and Regulations Guidelines**
DATE:	**March 1999**

See the NPDES Permitting Handbook for further details such as permitting requirements, procedures and policies.

- **Statutory authority Chapter 22, Article 12, of the State Code of West Virginia**
- **Regulatory authority Title 38, Series 2F, Groundwater Protection Rules Coal Mining Operations**
- **Regulatory authority Title 47, Series 58, Groundwater Protection Rule (non-coal)**

Groundwater Protection Plans (GPPs) are mandated under Chapter 12, Article 12, Section 5(d), and Title 38, Series 2F, Section 3. The implementation of the GPPs is specified in Section 3.3.2 of the regulations.

There will not be any distinct GPP permit or approval issued. GPPs that have been reviewed and approved by a NPDES Permit Writer will have the Permit Writer's initials and date on the GPP Application Form. After June 1, 1995, a copy of the GPP must be kept on-site or at the operator's nearest readily accessible office and made available to the inspector upon request, regardless of whether the GPP has been submitted for review.

Groundwater Protection Plans will be required with the submittal of all new and reissuance NPDES applications. NPDES modifications involving the addition of a new facility (SMA only), i.e., deep mine, refuse pile, etc. shall be accompanied by a revised GPP that includes the current GPPs plus the protection practices for the new activity incorporated therein.

NOTE: When the GPP is part of an Article 3, it is included in the PHC section and must appear in every SMCRA (Article 3) permit covered by a given NPDES permit. GPP is now Module 14 of Section K.

Although groundwater protection plans are a function of both the NPDES and SMCRA permitting process, the activities at a given site must meet, or have previously met, the definition of "surface mine", "surfacing mining" or "surface mining operations" as set forth in Chapter 22, Article 2, Section 3(w). These guidelines and Groundwater Protection Regulations (Title 38, Series 2F) apply only to those facilities that have a SMCRA permit. If the facility does not satisfy this definition, the facility will be regulated under Title 47, Series 58, Groundwater Protection Regulations.

SUBJECT:	**401 State Certification Program**
DATE:	**March 1999**

See the NPDES Permitting Handbook for further details such as permitting requirements, procedures, policies and compensation/mitigation guidelines.

- Statutory authority Chapter 22, Article 1, Section 6 and Article 11, Section 7a of the State Code of West Virginia
- Regulatory authority Title 47, Series 5A, Regulations for State Certification of Activities Requiring Federal License and Permits

The discharge of fill material into waters of the United States require a permit and authorization from the U. S. Army Corps of Engineers to conduct such activity per Section 404 of the Clean Water Act.

An integral part of the Corp's regulatory program is the concept of Nationwide Permits for minor activities. These Nationwide Permits are activity specific. However, before such federal Nationwide Permits can be issued, the state must certify that such activity will comply with applicable state laws and regulations.

Section 401 of the Clean Water Act requires that any applicant for a federal license or permit to conduct an activity that will or may discharge into waters of the United States must present the federal authority with a certification from the State. The certification authority for West Virginia resides with the Secretary of the Department of Environmental Protection. The Department may consider the proposed activity's impact on water resources, fish and wildlife, recreation, critical habitats, wetlands, and other natural resources when granting the certification. Certification and any conditions required by the certification shall become a condition on any federal license or permit. If the state denies certification, then the federal license or permit shall not be granted.

SUBJECT:	**SMCRA Permitting Changes**
DATE:	**June 4, 1999**

Revisions and amendments are being made to the SMCRA Permit without coordination of the NPDES permit writers in the region. These permit changes are being submitted to the regional offices solely for SMCRA, and being processed and issued. Some of these SMCRA permitting changes may impact the NPDES or State 401 Programs, and thus require modifications to NPDES permits or compensation agreements under the State 401 Program.

When any type of SMCRA revision or amendment is submitted, a NPDES Permit Writer must review it to see if NPDES or State 401 Certification modifications are also needed. Anytime there is stream work involved, uphill or downhill expansions, deletions of bonded area, stream crossings etc. if will most likely require a State 401 modification. Adding additional coal seams, augering or highwall mining, additions or deletions of bonded area will most likely involve NPDES modifications.

SUBJECT:	**Flocculant Approval**
DATE:	**August 10, 1993**
APPROVAL:	**John C. Ailes, Jr.**

Please advise all permitting and I & E Personnel that effective immediately the only type of flocculant that will be approved for use in free flowing drainage systems will be those that have been approved by E.P.A. for use in the open environment.

It is highly recommended that only flocculants that are E.P.A. approved for use in potable water supplies are used in areas where domestic water supplies have the potential to be impacted.

This is due to several incidents of upsets and spills of other types of flocculant that have caused environmental problems including fish kills.

Headquarters will notify the two (2) industry associations so that they may disseminate to their respective members.

Please note that this does not apply to closed circuit preparation plant systems.

SUBJECT:	**Permitting Guidance for Bioreactors**
DATE:	**December 30, 2013**
APPROVAL:	**Harold Ward – Acting Director**

Permitting Guidance for Bioreactors

Authority

The West Virginia Department of Environmental Protection has authority for the Guidance document as per 38 C.S.R.2.

Introduction

With recent advances in research, the construction and use of bioreactors for treatment of selenium and other parameters has increased. The West Virginia Department of Environmental Protection (DEP) finds that these structures can be successful in reducing the concentrations of the pollutants for which they are designed. The DEP also finds that a procedure is required in the permitting of these bioreactors to ensure compliance with the requirements of 38 C.S.R.2.

Background

A bioreactor is a structure that is designed to mimic the conditions found in a naturally occurring wetland area. Research has shown that naturally occurring microbes that digest selenium, and other parameters, currently exists within a majority of the mining operations; however, the naturally occurring conditions are not conducive to stimulate increased activity. Within a bioreactor, organic medium is installed along with a water distribution method that creates an anaerobic environment along with a readily available carbon source used by the microbes as a source of energy.

Permitting

Prior to construction of a bioreactor, the permittee shall submit an application to the DEP for review and approval. The Regional Permit Supervisor will determine if the proposed activity requires submittal as a revision, modification or Incidental Boundary Revision. The application will include design drawings that accurately reflect the design flow, volume and type of organic material, and flow distribution system.

If the structure is proposed as a “Permanent Impoundment”, the permittee must address the requirements of 38 C.S.R.2.5.5. Temporary structures shall include an abandonment plan in accordance with 38 C.S.R.2.5.4.h.

Certification

Upon completion of construction, the structure shall be certified in accordance with 38 C.S.R.2.5.4.d.

This Guidance is also found in
Series 23 of the I&E Handbook and Series 5 of the Permitting Handbook

SUBJECT:	**Policy for NPDES Permitting of Bioreactors for Coal/Quarry NPDES Permits**
DATE:	**December 30, 2013**
APPROVAL:	**Harold Ward – Acting Director**

Policy for NPDES Permitting of Bioreactors for Coal/Quarry NPDES Permits

Authority

The West Virginia Department of Environmental Protection has authority for this guidance pursuant to 47CSR30 Section 8.2.c.2.A.

Background

A bioreactor is a structure that is designed to mimic the conditions found in naturally occurring wetlands. Research has shown that naturally occurring microbes that digest selenium, and other parameters, currently exist within most mining operations; however, conditions in active water treatment systems are not conducive to stimulate increased activity. Within a bioreactor, organic media are installed along with a water distribution method to create an anaerobic environment and to provide readily available carbon for the microbes to use as a source of energy.

NPDES Permitting

Prior to construction of a bioreactor, the permittee shall submit an application for modification of the NPDES permit for each outlet where a bioreactor is to be installed. The application shall include, at a minimum, design drawings that accurately reflect the design flow, volume of organic material, and flow distribution system. The permit application shall include specific information which identifying measures to be used to ensure adequate function of the bioreactor for DEP for review and approval. In addition, the permit application shall include a description of the organic materials to be used in the bioreactor, the construction procedures and schedule, the construction and design features of the "polishing pond" prior to discharge from the bioreactor, and the proposed method to remove any suspended solids or particulate matter that may be discharged from the bioreactor into the "polishing pond." The permit application shall set forth in detail the methods employed to ensure that the bioreactor does not cause or contribute to a violation of water quality standards in the receiving stream.

Monitoring

A bioreactor is a treatment system that will reduce the concentration of certain parameters in mine discharges. However, monitoring is necessary and prudent to ensure that a newly constructed bioreactor is operating properly. Upon issuance of a permit modification for installation of a bioreactor, the following language shall be added to Section D of the WV/NPDES permit:

The following bioreactor monitoring requirements apply to Outlets ___and ____:

a. Samples shall be collected from the receiving stream immediately below the Outlet(s) discharge at the regular sampling interval for the Outlet(s).

b. Each outlet shall be monitored separately.

c.

Pollutant	Benchmark Value:
Dissolved Oxygen	6 mg/l
Chemical Oxygen Demand	120 mg/l
Biochemical Oxygen Demand	30 mg/l
Total Suspended Solids	100 mg/l
Ammonia Nitrogen	4 mg/l
Nitrate plus Nitrite Nitrogen	0.68 rng/l
pH	6.0 to 9.0 S.U.

When the concentration results from a minimum of twelve consecutive samples of a pollutant are all less than the corresponding benchmark value for the pollutant, a revision requesting reduced monitoring may be submitted (all pH values of the samples must be within the range 6.0 to 9.0 S.U.). Each treatment facility shall submit annual certification that there has not been a significant change in the bioreactor operation or design or the corresponding pollution prevention measures.

When a benchmark value is exceeded; upon discovery the permittee shall within 24 hours notify the local inspector and implement appropriate corrective action to achieve the established benchmark values. Within thirty 30)) days of exceeding a benchmark value, the permittee shall submit a letter identifying the revised and implemented procedures for the bioreactor to address the exceedance of the benchmark concentration to the local inspector.

If there is evidence indicating potential or realized impacts on water quality due to any bioreactor covered by this permit, the permit may be promptly modified and/or reissued to include effluent limitations and/or other requirements to control such discharges.

This Guidance is also found in
Series 23 of the I & E Handbook and Series 5 of the Permitting Handbook

SUBJECT:	**Post Mining Limits under 47 CSR 30**
DATE:	**January 3, 2014**
APPROVAL:	**Harold Ward – Acting Director**

INTRODUCTION

This memorandum supersedes the previous guidance concerning post-mining limits issued by the agency on February 28, 1995. In the eighteen years since the last guidance was issued, significant changes have occurred to the procedures for preparing effluent limitation for mining permits. The purpose of this guidance is to ensure that evaluations of effluent limits for Post-Mining Areas are processed in a consistent manner with full consideration of the type of outlet, the applicable effluent limitations, and the protection of the receiving stream. This guidance provides a uniform method for the review and assignment of both technology-based effluent limitations (TBELs) and water quality-based effluent limits (WQBELs) for post-mining areas.

DISCUSSION

Effluent limits are separated into two categories – technology-based effluent limits (TBELs) and water quality-based effluent limits (WQBELs)… TBELs are established to require "a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through WQBELs." *NPDES Permit Writers' Manual*, p. 5-1.

TBELs for coal mining facilities are set forth in the effluent limitation guidelines ("ELGs") in 40 CFR 434. This regulation sets forth categories applicable to different types and stages of mining activities. WQBELs are based on the water quality standards set forth in 47 CSR 2. Whereas TBELs are specified by regulation, WQBELs are calculated, when appropriate to protect receiving water quality, based upon the procedures set forth in EPA's *Technical Support Document for Water-Quality-Based Toxics Control* (the "TSD").

This document sets for the procedure for assigning effluent limitations for facilities that are classified as a "Post Mining Area" under 40 CFR § 434.11(k). This document also explains the requirements for water quality data for applications to revise effluent limitations for Post Mining Areas.

PROCEDURE

TBELs

Under 40 CFR § 434.11(k), the following operations are classified as a Post Mining Areas:

> (1) A reclamation area, which is the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced, or
>
> (2) The underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

Neither of these are based upon a requirement for raw water quality, unlike the requirement for classification as "alkaline mine drainage." This is logical, because TBELs are not related to receiving water quality. Instead, this role is served by WQBELs set to protect West Virginia's water quality standards.

The determination for classification as a Post Mining Area is based on three factors: (1) mining in the area is completed; (2) the surface area has been returned to contour; and (3) revegetation has commenced. This determination is made on an outlet-by-outlet basis. The drainage area associated with each outlet will be assessed individually to determine whether each of the three factors is satisfied. It is possible for one or more outlet to be classified as a Post-Mining Area, while other outlets do not qualify for reclassification.

Once an outlet qualifies as a Post Mining Area, manganese effluent limitations may be re-evaluated immediately. If the permit contains WQBELs for manganese that is necessary to protect a public water supply intake, then the manganese effluent limitations must remain. If the permit does not contain WQBELs for manganese for an outlet, then the manganese effluent limitations may be removed for any outlet that discharges from an area classified as a "reclamation area" under 40 CFR § 434.11(k).

Past versions of DEP guidance precluded deep mine discharges, pump discharge, and instream ponds located in intermittent or perennial streams from classification as Post-Mining Areas. This contradicts Federal regulations set forth in 40 CFR 434. **However, as a practical matter, classification as a Post Mining Area does not change the effluent limitations for a discharge from the underground workings of an underground mine, since the applicable TBELs for underground workings of underground mines are the same for active mining areas and post-mining areas.** *See* 40 CFR § 434.55(b) and 40 CFR § 434.35. As with active mining areas, manganese can be removed if the discharge from an underground working of an underground mine at a Post-Mining Area can meet the criteria for classification as "alkaline mine drainage."

WQBELs

While TBELs apply to all outlets, the majority of outlets have also been assigned WQBELs. Therefore, both types of effluent limitations must be evaluated when reviewing an application for post mining limits. Likewise, the review process for on-bench outlets is different than the process for instream outlets or deep mine discharges. Importantly, the classification of an outlet as a Post Mining Area **does not affect any WQBELs** assigned to the outlet. Because WQBELs are assigned based on reasonable potential to cause or contribute to a violation of water quality criteria in the receiving stream, WQBELs can only be removed from an outlet by following the procedure set forth in the following paragraphs. [1]

On-bench outlets. Prior to applying for post-mining limits, the permittee must provide one of the following data sets for each outlet:

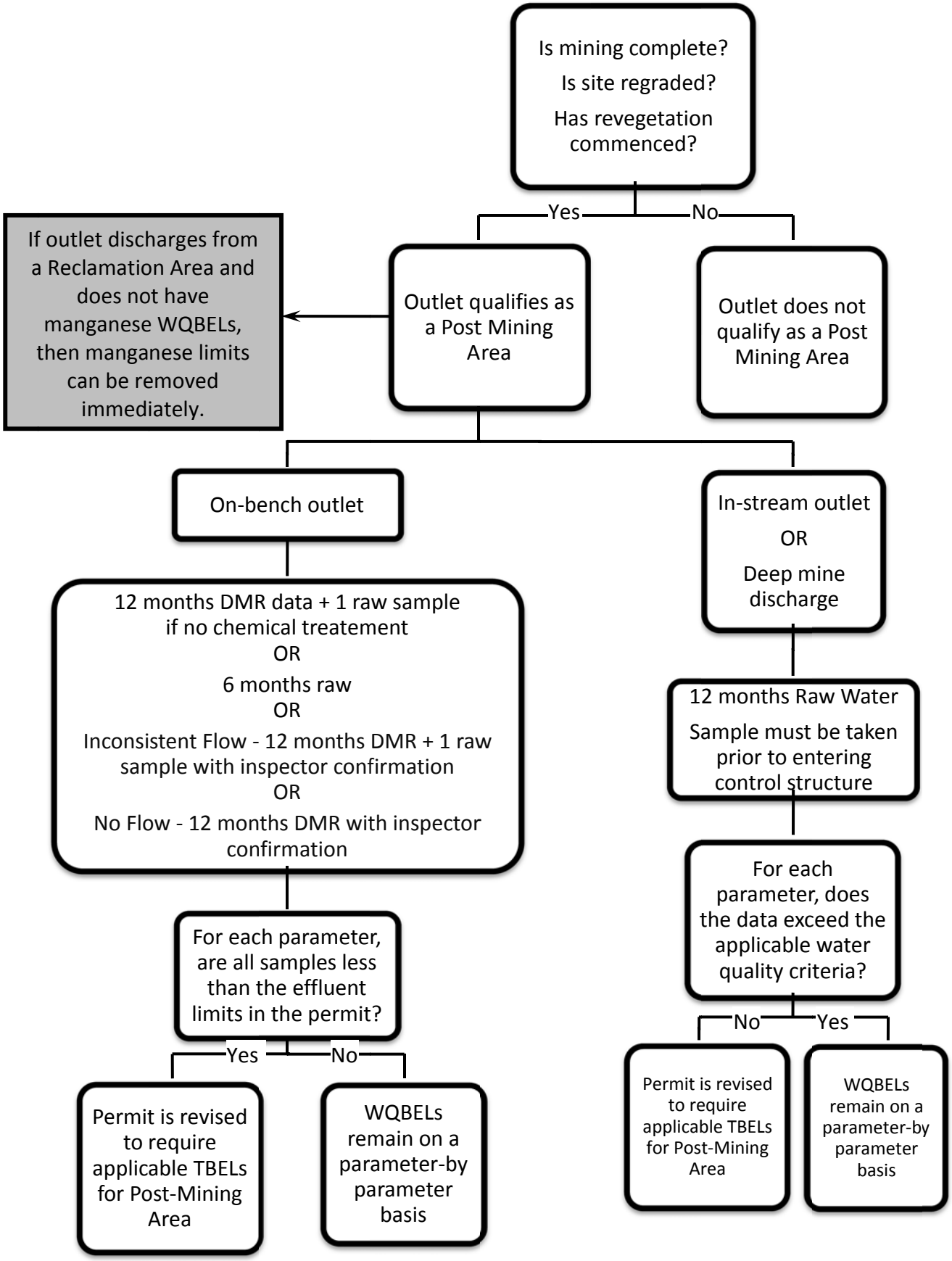
- Twelve (12) months DMR data plus 1 raw sample, if the outlet is not chemically treated;
- Six (6) months of raw sample data collected prior to any chemical treatment;
- If the outlet does not flow consistently, 12 months DMR data plus 1 raw sample with confirmation from the DEP inspector; OR
- If the outlet does not discharge, 12 months of DMR demonstrating no flow with confirmation from the DEP inspector.

The data will be compared to the corresponding outlet's effluent limitations. If the data meets all WQBELs in the permit, then the outlet will be assigned the appropriate TBELs for a Post-Mining Area specified in 40 CFR 434. WQBELs will remain in the permit for any parameter that does not meet the effluent limitations set forth in the NPDES permit.

Instream or deep mine outlets. Prior to applying for post-mining limits, the permittee must provide 12 months raw water data for each outlet, prior to chemical treatment. This sample needs to be taken prior to the water entering the associated control structure. The agency will compare the data to the applicable water quality criteria. If the data does not exceed the corresponding water quality criteria, then the outlet will be assigned the appropriate TBELs for a Post-Mining Area specified in 40 CFR 434. WQBELs will remain in the permit for any parameter that exceeds the applicable water quality criteria in the receiving stream.

The agency has developed the following flow diagram to represent the procedure for revising both WQBELs and TBELs for Post-Mining Areas:

[11] Limited situations may arise that are not addressed by this guidance. In those situations, discretion may be exercised by the permit writer, after consultant with DEP headquarters. In addition, this policy does not affect the requirements for pond removal under SMCRA.


Is mining complete?
Is site regraded?
Has revegetation commenced?
Yes
No
If outlet discharges from a Reclamation Area and does not have manganese WQBELs, then manganese limits can be removed immediately.
Outlet qualifies as a Post Mining Area
Outlet does not qualify as a Post Mining Area
On-bench outlet
In-stream outlet
OR
Deep mine discharge
12 months DMR data + 1 raw sample if no chemical treatement
OR
6 months raw
OR
Inconsistent Flow - 12 months DMR + 1 raw sample with inspector confirmation
OR
No Flow - 12 months DMR with inspector confirmation
12 months Raw Water
Sample must be taken prior to entering control structure
For each parameter, are all samples less than the effluent limits in the permit?
Yes
No
Permit is revised to require applicable TBELs for Post-Mining Area
WQBELs remain on a parameter-by parameter basis
For each parameter, does the data exceed the applicable water quality criteria?
No
Yes
Permit is revised to require applicable TBELs for Post-Mining Area
WQBELs remain on a parameter-by parameter basis

CONCLUSION

Most outlets have both TBELs and WQBELs assigned to them. TBELs are based solely on regulation and are independent of water quality of the outlet and receiving stream. WQBELs, on the other hand, are designed specifically to protect water quality in the receiving stream. The evaluation for post mining limits must evaluate both the relevant TBELs for that category as well as the need for WQBELs to assure protection of instream water quality.

This Guidance is also found in
Series 23 of the I & E Handbook and Series 5 of the Permitting Handbook