



Kentucky
Department for Surface Mining
Reclamation and Enforcement

Reclamation Advisory Memorandum

From: R. F. Knarr, Commissioner

A handwritten signature in cursive script, appearing to read 'R. F. Knarr'.

Date: August, 1986

Subject: Surface and Ground Water Monitoring - Permanent Program

RAM#85

The protection of water resources is one of the primary goals of the permanent regulatory program. Permittees are required to conduct extensive monitoring of surface and ground water systems from the premining stages of a proposed mining operation through final reclamation.

The purpose of this RAM is to provide a brief summary of the various types of monitoring which are currently required and how the results of such data collection are to be presented to the Department.

Attached is a document entitled Summary of Surface and Ground Water Monitoring Requirements and two cabinet approved monitoring report forms which are to be used to report monitoring results.

When submitting water quality data to the department, permittees must ensure that the correct forms are used as outlined in the summary and that they are presented in a well organized manner.

The Department prefers that during mining data for each permit be submitted as an individual package with a cover letter identifying the permit number, company name, and type of data being submitted. It is very important that data submitted in response to a special permit condition such as baseline ground water data be clearly identified so it can be forwarded to the proper individuals for review.

This document is for informational purposes only and is not intended to modify or supercede any regulation or permit condition.

If you have any questions on any of this information, please contact Jim Adamson at (502) 564-2377.

SUMMARY OF SURFACE AND GROUND WATER MONITORING REQUIREMENTS

August, 1986

I. SURFACE WATER MONITORING

1. Baseline Surface Water Data:

Sample Frequency: One (1) per month for a minimum of six (6) months.

Location: As approved by Department

Parameters:

Discharge	Total Iron
pH	Total Manganese
Acidity	Total Suspended Solids
Alkalinity	Total Dissolved Solids or
Sulfate	Specific Conductance corrected to 25°C

Report Requirements:

A minimum of six (6) months of data submitted within each permit application. (Water Quality Data Entry forms with lab reports).

2. In Stream Monitoring (during-mining and reclamation):

Note: Permits issued by DSMRE prior to May 7, 1985 should continue monitoring in accordance with the monitoring plan approved in the permit application. In stream monitoring requirements will be implemented for these operations through the Departments mid-term review procedures or in the first major revision/amendment to the permit after that date.

Sample Frequency:

One (1) per three (3) months until final bond release.

Location:

Baseline surface water monitoring stations or other approved locations.

Parameters:

Discharge	Total Iron
pH	Total Manganese
Acidity	Total Suspended Solids
Alkalinity	Total Dissolved Solids or
Sulfate	Specific Conductance corrected to 25°C

Report Requirements:

One (1) copy of data submitted to DSMRE Regional offices within one (1) month of data collection. Water Quality Data Entry forms must be used.

3. Pond Monitoring (KPDES General Permit)

(a) Active Mining to Phase I Bond Release

Sample Frequency: Two (2) per month.

Location:

All sediment ponds, except those in series where only the furthest down stream pond needs to be sampled. All other point source discharges from the permit area.

Parameters:

Discharge	Total Iron
pH	Total Manganese
Acidity	Total Suspended Solids
Alkalinity	

Report Requirements:

One (1) copy of data must be submitted to the DSMRE Regional Office quarterly and reported on a KPDES "Coal Only" Discharge Monitoring Report Form (DMR). One DMR form is required per pond for each month.

(b) Pond Monitoring after Phase I Bond Release

Note: Any pond which receives drainage or pumpage from underground mine workings must continue the active monitoring requirements outlined in Part(a) until final bond release or pond removal.

Sample Frequency:

One (1) per month for first six (6) months, one (1) per three (3) months thereafter, if no water quality problems observed.

Location: All point source discharges monitored during active mining.

Parameters:

Discharge
pH
Acidity
Alkalinity
Settleable Solids

Report Requirements:

One (1) copy of data must be submitted to DSMRE Regional Office quarterly and reported on a KPDES "Coal Only" Discharge Monitoring Report (DMR).

(c) Effluent Limitations for Point Source Discharges

The following effluent limitations represent a summary of typical values which apply to most, but not all, operations. Permittees must reference the KPDES permit issued for their specific operation to determine the actual parameters and limitations which apply.

	<u>Monthly Average</u>	<u>Daily Maximum</u>
Manganese, Total	2.0 mg/l	4.0 mg/l
Iron, Total (New Source)*	3.0 mg/l	6.0 mg/l
Iron, Total (Existing Source)	3.5 mg/l	7.0 mg/l
Total Suspended Solids	35.0 mg/l	70.0 mg/l
Settleable Solids	0.5 ml/l	0.5 ml/l
pH	6.0 - 9.0 at all times.	
Acidity	Less than alkalinity.	
Alkalinity	Greater than acidity.	

*A New Source is a mine for which construction was started after May 29, 1981 or one prior to that date which has had a major alteration as defined in the KPDES General Permit Part I, E.20.

II. GROUND WATER MONITORING

1. Baseline Ground Water Data:

Sample Frequency: One (1) per month for a minimum of six (6) months.

Location: As approved by Department.

Parameters:

Water level	Dissolved Iron
pH	Dissolved Manganese
Acidity	Total Dissolved Solids or
Alkalinity	Specific Conductance corrected to 25°C
Sulfate	

Report Requirements:

A minimum of six (6) months of baseline data must be submitted with each permit application. (Water Quality Data Entry forms with lab reports attached).

Note: Total iron and total manganese may be used in place of dissolved if data was collected prior to August 13, 1985.

2. During Mining and Reclamation

Sample Frequency:

One (1) per three (3) months until final bond release.

Location:

Baseline ground water monitoring stations or other approved locations.

Parameters:

Water Level	Dissolved Iron
pH	Dissolved Manganese
Acidity	Total Dissolved Solids or
Alkalinity	Specific Conductance corrected to 25°C
Sulfate	

Report Requirements:

One (1) copy of data submitted to DSMRE Regional office within one (1) month of sample collection. Water Quality Data Entry forms must be used.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location)

NAME _____
 ADDRESS _____

FACILITY _____
 LOCATION _____

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM (KPDES)

CHARGE MONITORING REPORT (DMR)

NPDES PERMIT NUMBER	DISCHARGE NUMBER	DSMRE PERMIT NUMBER
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Repc)Type
 (Check one)

- New Source
- Reclamation Area
- Water Quality Limited
- Alternate Rainfall Limits
- Existing Source, New Discharger

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

NOTE: Read instructions before completing this form.

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

COAL ONLY

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 401 KAR 5.065 AND KRS 224.994. (Penalties under these statutes may include fines up to \$15,000 per day of violation or by imprisonment for not more than one year, or by both).	TELEPHONE	DATE			
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

WATER QUALITY DATA ENTRY FORMS: Part 1

Type of Report:
[] Premining
[] During Mining/Reclamation
[] Other

STATION INFORMATION

PERMIT #: _____ STATION #: _____ SOAP PERMITTEE #: _____

*COUNTY #: _____ *BASIN #: _____ QUAD NAME: _____

STATION TYPE (check): [01] Spring [04] Well
[02] Stream [05] Sediment Pond/Influent
[03] Lake [06] Sediment Pond/Discharge

FOR WELLS ONLY

DEPTH (ft): _____ CASING DIAMETER (in): _____ AQUIFER DESCRIPTION: _____
TOP OF AQUIFER (MSL): _____ AQUIFER THICKNESS (ft): _____ TOP OF WELL ELEVATION (MSL): _____

WATERSHED DESCRIPTION: _____ DRAINAGE AREA (acres): _____

LATITUDE (DMS): _____ LONGITUDE (DMS): _____

UTM ZONE: _____ 16 West of 84° Longitude UTM EASTING: _____ UTM NORTHING: _____
17 East of 84° Longitude

LOCAL STREAM NAME: _____

COAL COMPANY NAME: _____

COLLECTING FIRM NAME: _____

ANALYZING FIRM NAME: _____

COMMENTS: _____

* Refer to Coding Instructions for list of codes.

SAMPLE DATA

PERMIT # _____ STATION # _____

Sample No.

[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE										

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE										

COMMENT:

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Sample No.

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PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE										

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE										

COMMENT:

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Sample No.

[]

PARAMETER	DATE MM/DD/YY	TEMP(F)	DISCHARGE (cfs)	CONDUCTIVITY (umhos)	pH, (Std. Units)	ACIDITY mg/l	ALKALINITY mg/l	TSS mg/l	TDS mg/l	SETT. SOLIDS ml/l
VALUE										

PARAMETER	SO ₄ DISS. mg/l	O ₂ DISS. mg/l	Fe, Diss. mg/l	Fe, Total mg/l	Mn, Diss. mg/l	Mn, Total mg/l	Depth to Water/ft.			
VALUE										

COMMENT: