tioned here. Keep in mind that programs differ in their monitoring requirements and that specific conditions or requirements may be imposed for individual permits.

Keys:
- when possible, observe the operator's sample-collection procedures.
- question sample-handling techniques and elapsed time between collection and lab analysis.
- compare reports with known high- or low-flow data.
- cross-check analysis if suspicious of sampling procedures or data.
- observe pond conditions in relation to sediment suspension and short circuiting.
- where continual treatment is necessary (AMD plants, etc.), check whether facilities appear to be maintained and operational during all required periods.
- look for telltale signs of sampling activity at monitoring discharge points.
- see whether monitoring reports and lab data for the permit area generally agree with those of nearby permits in the same area or drainage basin.

Acid and Toxic-Forming Materials

Surface and ground water contamination with acid or toxic-forming materials is commonplace in areas disturbed by mining. Surface waters and groundwaters in Appalachia may be degraded by iron and pH changes, while water in the Midwest may be high in manganese and western waters may have salinity problems. Various "best technology" approaches to handling potential problem materials have evolved, but no system has proven totally effective, even when properly planned and implemented. Many of the facilities and techniques currently used in mining were also used during the prelaw era. Their environmental effects are well known. An inspection of the handling and treatment of acid- or toxic-forming materials must consider the entire scope of operations if it is to address water quality problems properly and provide a basis for constructive solutions.

Keys:
- what is the relevance of acid- or toxic-forming materials as discussed in the Permit Application Package? Have the materials pertinent to the question at hand been identified?
- what aspects of the permit or treatment facility are associated with those materials?
- is volume of surface or groundwater influencing the nature or degree of the problem?
- what does the monitoring plan indicate for the mine and adjacent areas?
- are material handling, treatment, and placement operations consistent with those of the permit and with their applicable performance standards?
- what facilities or practices were to be built or implemented in order to minimize water contact with acid or toxic materials, and are they properly designed, constructed, and maintained?
- how long is the current situation likely to last?

Typical Citation:

Failure to [(use appropriate one or combination) identify, treat, handle, bury, or store] acid- and toxic-forming materials in a manner that will prevent or minimize, to the extent possible, adverse effects on the quality of surface water and groundwater.

Documentation:
- samples of problem-causing materials and the results of tests run on those materials.
- water samples and test results that demonstrate a cause-and-effect relationship with materials mismanagement.
- photos showing improper handling, placement, compaction, covering, or treatment of materials.
- photos or documentation showing the absence or ineffectiveness of runoff diversions or other schemes for preventing contact between water and potentially acid or toxic materials.
- evidence of improper or long-term storage of materials.
- previous inspection reports or other documentation of similar problems on prior occasions.

The narrative should clearly delineate the various factors and actions associated with the handling of acid- or toxic-forming materials as they pertain to the violation. It should construct a chronological, historical chain of events and actions from initial cause(s) of current problems (example: "On June 9, 1983 at 3:15 p.m. seepage was noted near the toe of the embankment of sediment control structure designated A-12 on Permit No. _____. The seepage was at a point 25' left of the main spillway, approximately 42.5' right of the emergency spillway, and at an elevation 5.5' above the flow line of the main spillway outlet. The inspection report for this structure dated October 15, 1983 documents that underdrains were not installed at the time of its construction. There is no documentation or field evidence that underdrains have since been installed."). Indicate what differences there are between material handling practices and the results obtained at this operation and those at other comparable operations in the general vicinity.

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