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MEMORANDUM

TO: NPDES Permit Writers **DATE:** January 9, 2004
FROM: Ken Politan **SUBJECT:** Translator Study

The following is our current guidance on adding Dissolved Aluminum to the Permit and the requirements and approval of Translator Studies.

When to Apply Dissolved Aluminum and Initiate the Translator Study

New Permits. All new facilities will have dissolved aluminum incorporated into the permit. This also includes any Remining Permit. Apply "Report Only" to Dissolved Aluminum and 0.08 mg/l Monthly Avg. & 0.14 mg/l Daily Max. for Final Total Aluminum Limits. Apply Interim "Report Only" Limits through a three year Compliance Schedule for Total Aluminum.

Reissuances. All reissuances will have dissolved aluminum incorporated into the permit except for, but not limited to, outlets that have post mining limits. Apply "Report Only" to Dissolved Aluminum and 0.08 mg/l Monthly Avg. & 0.14 mg/l Daily Max. as Final Limits for Total Aluminum. Apply Interim "Report Only" Limits through a three year Compliance Schedule for Total Aluminum.

Modifications. Dissolved aluminum will be added to the permit if and when the specific modification requires an anti-degradation review in accordance with April 21, 2003 guidance. The activity requested will dictate what is to be done with the permit. Other modifications that require dissolved aluminum through compliance schedules are:

- Relocating in stream ponds further downstream due to toes of excess spoil valley fills or refuse piles/impoundments moving further downstream.
- Relocating outlets from on-bench into streams via existing in-stream ponds or adding in-stream ponds.
- Modifying an existing permit to incorporate discharges from another permit.
- Relocating outlets (instream ponds) further downstream due to expansion of operation (IBRs & Amendments).



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- An anti-deg review (dissolved aluminum) is not warranted, on a case-by-case basis, when additional ponds are added to provide additional detention time or better treated effluent.

General Issues

- Read Water’s guidance on Implementing Water Quality Standards for Dissolved Metals in WVPDES Permits dated April 1, 2000.
- Bathhouse outlets will not require dissolved aluminum it is not a parameter of concern for this type of activity.
- Effective July 2003 all BWQ samplings shall include dissolved aluminum. As a general matter BWQ stations should not be used for the translator study station.
- Dissolved aluminum shall be added to all upstream and downstream stations during a reissuance or new permit. For modifications, add dissolved aluminum only to the stream stations associated with the outlet(s) that are affected or added by the modification.
- TMDL/Anti-degradation implementation. Reissuance - Outlets that already have post mining limits could remain with post mining limits provided the post mining water quality study that was conducted shows the influent for the parameters are of better quality than the effluent limits derived from TMDL wasteload allocation. Therefore will not require the addition of dissolved aluminum. This needs to be documented in the rationale page. This will also apply to pending post mining requests and future request for post mining limits.

NOTE: We will no longer be relying on the SMCRA bond release phase (status) of the permit to determine implementation of TMDL, anti-degradation, including dissolved aluminum.

- No dissolved aluminum Translator Study is needed for outlets that have technology based effluent limitations due to the structure discharging into another permitted outlet (in-stream pond). Require report only for total and dissolved aluminum at the technology based effluent limit structure and require the Translator Study (compliance schedule) on the in-stream pond (final compliance point).
- Reissuances and modification of permits (outlets) that currently have aluminum limits based on total aluminum will be changed to a dissolved aluminum via the compliance schedule.
- Use the newly developed Compliance Schedule to address the addition of dissolved aluminum and the interim limits for total aluminum. You do not need to assign interim limits on any other parameter, unless there are specific reasons for allowing time for compliance. Assign “report only” for a three-year period on total aluminum.

Selecting the Location of Stations for the Study

1. Sampling of adjacent permitted sites will not be acceptable. The Translator Study shall be conducted on the outlets and receiving streams of the permit in question. Also, collecting

discharge samples from outlets and mixing them with a receiving stream sample in emulated volumetric proportions is not acceptable.

2. Translator sampling stations shall be located after complete mixing of the effluent with the receiving stream. In most of our situations this will occur rapidly. For instance: in-stream ponds and first and second order streams that have small stream widths.
 - A. As a general matter the downstream station should be located no more than 50 feet downstream of the confluence of the most downstream discharge with the receiving stream.
 - B. Upstream stations can be located immediately upstream of the uppermost confluence of the discharge with the receiving stream. So 25 to 50 feet upstream is appropriate. In case of valley fills there is no need to establish an upstream station.
 - C. In certain situations the immediate receiving stream may not have sufficient stream flow (ephemeral) to sample. In these cases the Translator Sampling Station needs to be moved to the next receiving stream.
3. All Translator sampling stations need to be located on the drainage/proposal map. The Drainage Map must also include the permitted area and show all permitted outlets and stream stations

How & When to Sample

1. Sampling shall occur under various flow scenarios. If a permittee proposes to sample at the time of their routine semi-monthly sampling that is fine. The odds that they encounter precipitation events or soon after one should be good. As a general matter, between 4 to 10 samples shall be collected during base flows. A minimum of twenty (20) samples must be submitted for the study. "No flow" for the stream sample will not be accepted.
2. The Translator Study is a 12 month study on all outlets constructed during the study period. The study period will begin at the time of the first outlet being constructed. For existing permits and outlets (reissuance), the Translator Study should begin immediately after approval of the plan. New permits and not started permits will be not need to submit a Translator Study Plan until the activation of the permit and construction of the first outlet occurs.
3. As a general matter, the sampling frequency for the Translator Study should be the same sampling frequency as the issued NPDES Permit. The sampling should be able to capture both baseline and rainfall conditions over the 12 month sampling period. Rainfall records (rain gauge) shall be maintained, correlated with the sampling dates and submitted throughout the study period. Frequency of sampling can occur more often than semi-monthly. In no event will a Translator Study be accepted for less than a six (6) month sampling period.

4. Field blank and field duplicate samples must be collected in conjunction with each sampling event. A sampling event shall be defined as each day samples are collected for a designated Translator study site. The study site will consist of the designated Translator stream station and all discharges (outlets) contributing to that station. One field blank & one field duplicate shall be collected from each study site by randomly selecting one of the discharging outlets and the assigned Translator stream study station. One blank and one duplicate shall be collected for every ten outlets at the study site. Additional field blanks and field duplicates are optional and left to the permittee's discretion for their evaluation of the selected lab's performance, as the permittee may choose to select another lab to run the duplicate samples. In addition to the collection of water chemistry samples, field water quality parameters (pH, conductivity, and temperature) will be recorded for all stream stations. Standard sampling protocols will be followed in the field.
5. Field notebooks will be required to be maintained to include documentation of water quality parameters measured in the field, conditions encountered while samples were collected, field observations, photographs taken if needed to document unusual conditions.

Analysis of Samples

Approved methods and procedures must be used to measure flow at the outlets and stream stations.

Analysis must be conducted by a DEP certified lab and submitted on a certified lab sheet. Samples must be analyzed within the approved holding times and using approved EPA methodologies capable of achieving the necessary levels of detection.

Analysis must be performed for Total Suspended Solids (Residue nonfilterable), Hardness, Dissolved Aluminum, Total Aluminum, & Particulate Organic Carbon (optional but recommended).

The permittee must use an approved analytical method having an appropriate detection limit. For Dissolved & Total Aluminum the detection limit must be below the chronic criteria of 0.087 mg/l.

If both total recoverable and dissolved aluminum concentrations are non-detect for the stream station, the data pair should be discarded. If only the dissolved aluminum concentration is non-detect, it shall be assumed to equal one-half the detection level. If the discharge shows non-detect for both total and dissolved aluminum and the stream station has detectable total and dissolved, the data will be OK to use.

The Plan must divulge the name of the certified lab to be used, the approved analytical method to be employed and the detection limit the lab is capable of achieving for each individual parameter being analyzed.

Approval of the Plan

1. The permittee must submit three (3) copies (Region, Headquarters and Company) of the plan to the regional NPDES permit writer for review and acceptance.
2. If the permittee can demonstrate their plan meets the above criteria, the Translator Plan should be accepted and approved. The permit must be modified with “Report Only” Interim Limits for Total Aluminum using the three-year compliance schedule.
3. The permittee can submit the Translator Plan as part of his permit application (Reissuance or Modification) rather than wait until the permit is issued. This would work especially well on Reissuances where the permit is activated and outlets are already established. Most Modifications would fall in line the same way.

Implementing the Translator

Sampling for the Study needs to start as soon as the permit area is activated. This would coincide with the establishment of sediment control and any approved outlet.

Once the Translator Study is completed, the permittee needs to submit the study in its entirety to the DEP with their request to modify the applicable aluminum effluent limitations (Total Aluminum) in their permit with the site-specific translator. This modification request will not require an application filing fee. The results of the initial translator (if only one is done) will be applied throughout to all of the outlets in the permit, unless the permittee has conducted individual site specific translator studies for each watershed.

The permittee may continue with the translator study, to include other outlets within the same watershed that weren't constructed yet at the time of the initial study period. If the permittee wishes to employ a new Translator and modify their outlets again, they will have to submit a modification to the permit to incorporate another translator for the outlets in question. This modification and any subsequent modification applications submitted will require modification application filing fee.