



Main Office: 550 Beagle Rd., Rockwood, PA, 15557

House Coal Yard: 9224 Mason Dixon Highway Salisbury, PA 15558

Shaw Mine Office: 1117 Shaw Mine Rd., Meyersdale, PA 15552

Phone: 814-926-1652

September 7, 2022

IRRC

14th Floor Conference Room

333 Market Street

Harrisburg, PA 17101

Re: No. 3260, #7-553 Water Quality Standard for Manganese

In the early 70's, the Clean Water Act writers/technicians collected water samples from approximately 300 mine sites. Based on initial findings, coal mine effluent limits were divided into two groups. pH < 6, assigned limits on pH-iron(Fe)-manganese(Mn). pH > 6, pH-iron limits applied. Why were Mn limits applied at all ? Many of the AMD samples often showed Mn appearing with the Fe. It was determined that Mn was a possible surrogate for many other heavy metals and that if you removed the Mn, then you would also remove the other heavy metals. There was no peer reviewed scientific reason for including Mn. It had nothing to do with toxicity and the subsequent treatment for Mn would be the real problem and not the Mn itself.

It has been proven numerous times that conventional treatment for Mn removal increases dissolved solids, osmotic pressure, chemical treatment costs 2-3 times versus Fe removal only, increases sludge volume by a factor of 3-5 times, and resolubilizes aluminum that can be removed from normal treatment of dissolved Fe. The side effects from the treatment of Mn removal is the real problem, not the Mn. Mandating the treatment for Mn removal creates a reality where the physical, chemical, and biological integrity of the waters of the Commonwealth are harmed by industry being forced to treat for a problem that doesn't exist.

To decrease Mn levels even further to levels below 0.3 ppm average, the treatment and pond size for retention time will need to be doubled. As stated earlier, a significant increase in total dissolved solids, osmotic pressure, and sodium will be inevitable. The pH levels will also have to be raised to at least 10(S.U.) while current limits are 9.0 instantaneous maximum. The problem is magnified in the winter colder months with density changes. The effectivity of treatment chemicals is greatly reduced because of slowed chemical reaction kinetics creating major issues to even meet the current standard limit of 2 ppm.

Manganese is present in natural waters at concentrations that sometimes exceed 0.3 ppm. Regulating the discharge to below these limits should at least be evaluated on a case by case basis depending on the TMDL and the background concentrations of the receiving waters. The human health criterion for manganese should only apply if the discharge is located a certain distance up stream of a public water supply intake.



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Finally, the Commonwealth of PA is also responsible for the treatment of AMD at numerous sites. They will be responsible and face every problematic issue discussed above.

Sincerely,

A handwritten signature in black ink that reads "Daniel P. Parisi".

Daniel P. Parisi

Engineering and Permit Manager

"Preserving the past, maintaining the present, and providing for the future."

