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AMD Reclamation, Inc.

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ENVIRONMENTAL QUALITY BOARD

February 9, 2010

Pennsylvania Environmental Quality Board
Rachel Carson State Office Building – 16th Floor
400 Market Street
Harrisburg, PA 17105-2301

Re: **Proposed Amendments to 25 PA Code Part I, Subpart C, Article II, Chapter 95 – Wastewater Treatment Requirements**
39 Pa.B. 6467 – November 7, 2009
Doc. N0. 09-2065

Dear Environmental Quality Board,

In response to the referenced proposed rulemaking, please accept the comments provided below. A one page summary of our comments is also included, to be distributed to each Board member in the agenda packet for the meeting at which the final-form regulation will be considered.

1. **Summary of Proposed Revisions to Chapter 95**

In the November 7, 2009 *Pennsylvania Bulletin* (39 Pa. Bull. 6467), the Pennsylvania Department of Environmental Protection (the "Department") published proposed revisions to its water effluent standards for Total Dissolved Solids ("TDS"), sulfates, and chlorides in 25 PA. CODE § 95 that would require treatment of "new discharges" of "High-TDS wastewater" prior to release into Pennsylvania waters. These proposed revisions to 25 PA. CODE § 95 stem from the Department's *Permitting Strategy for High Total Dissolved Solids (TDS) Wastewater Discharges* (the "TDS Strategy"), notice of which was published in the Pennsylvania Bulletin on April 11, 2009 (39 Pa. Bull. 1926) and was followed by an announcement at a public meeting of the Marcellus Shale Wastewater Technology Partnership on April 16, 2009. According to the Department, the TDS Strategy was initiated by complaints in October 2008 of "unusually high levels" of TDS in the Monongahela River, levels that continued until the end of December 2008. These concentrations of TDS in the Monongahela River coincided with a period of very low flow in the river.

Pursuant to the proposed regulation, "High-TDS wastewater" is defined as any discharge with a TDS concentration that exceeds 2,000 mg/L or a TDS loading that exceeds 100,000 pounds per day that did not exist prior to April 1, 2009, while a "new discharge" is defined to include an additional discharge, an expanded discharge, or an increased discharge from a facility in existence prior to April 1, 2009. If enacted, these new discharges of High-TDS wastewater would be required to comply with new

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average monthly effluent limits of 500 mg/L for TDS, 250 mg/L for total chlorides, and 250 mg/L for total sulfates. These proposed limits for new discharges of High-TDS wastewater are not based on an express "technology-based" evaluation of the type customarily done to develop effluent limit guidelines. Rather, they appear to originate from Pennsylvania's secondary drinking water standards, adopted from the National Secondary Drinking Water Regulations, which are designed to protect public water supplies from aesthetic color, taste, and odor problems rather than guard against adverse human health risks.

2. AMD Reclamation, Incorporated's Background

AMD Reclamation, Incorporated ("AMDRI") is a Pennsylvania Section 501(a)(3) non-profit corporation, with a business address of 306 Dents Run Road, Morgantown, West Virginia 26501-2006. As a non-profit corporation, AMDRI was created for the purpose of collecting and treating water from abandoned coal mines in Pennsylvania to prevent pollution to the waters of the Commonwealth. AMDRI constructed a water treatment facility ("Steele Shaft") that pumps and treats acid mine discharge from the Shannopin Mine, an abandoned Pittsburgh Seam underground bituminous coal mine located in Greene County, in an effort to prevent an unpermitted discharge of degraded mine water near Bobtown, Pennsylvania. The untreated mine water at Shannopin Mine contains high levels of iron, manganese, and aluminum, and would flow at a rate ranging from 2,000 to 3,500 gallons per minute if it were to breakout and discharge into Dunkard Creek.

3. The Proposed Chapter 95 Effluent Limits Will Affect AMDRI's Operations and the Entire AML Program

The term "new discharge" is defined by proposed 25 PA. CODE § 95.10(a) to include a "new discharge of High-TDS wastewater that did not exist on April 1, 2009," as well as "an additional discharge, an expanded discharge or an increased discharge from a facility in existence prior to April 1, 2009." As written, the proposed regulation would apply not only to all new High-TDS discharges after April 1, 2009, but also to all additional, increased or expanded discharges from a facility in existence as of April 1, 2009. As described above, AMDRI collects and treats water from pre- existing abandoned coal mines in Pennsylvania to prevent pollution to the waters of the Commonwealth. This acid mine drainage ("AMD") water discharged from these abandoned coal mines would fall within the Department's proposed definition of "High-TDS wastewater", which includes wastewater with a TDS concentration that exceeds 2,000 mg/L or a TDS loading that exceeds 100,000 pounds per day. AMDRI's existing operations at these abandoned coal mines in Pennsylvania are expected to encounter greater volumes of impacted acid mine drainage with increasing concentrations of metals that that will necessitate increased or expanded discharges. In addition, AMDRI is discussing with DEP the reclamation of other orphan discharges of mine drainage that may require new facilities and new discharges. Therefore, by

the plain language of the proposed 25 PA. CODE § 95.10(a), AMDRI would be required to comply with these effluent standards for TDS, chlorides, and sulfates at its current and future AMD treatment facilities.

According to the Department's Bureau of Abandoned Mine Reclamation's ("BAMR's) website, abandoned coal mines are located in 45 of Pennsylvania's 67 counties, accounting for approximately 2,500 miles of streams degraded by AMD.[1] The Department estimates that "Pennsylvania's acid mine drainage problem would require in excess of $5 billion in capital costs to fix." Publications issued by BAMR focus on the treatment of acid mine drainage using conventional or passive mine drainage treatment facilities, rather than systems designed to meet the stringent TDS limits in the proposed rules. Note that for 2010, the United States Office of Surface Mining Reclamation and Enforcement had $369 million available in nationwide grants for abandoned mine land restoration, of which Pennsylvania received $43.8 million. If the proposed 25 PA. CODE § 95 revisions were implemented, it would be cost prohibitive for AMDRI or any other private entity to comply with these standards for TDS, chlorides, and sulfates. These private entities would be unable to continue to treat acid mine drainage. Moreover, it would also prevent private entities from considering future AMD treatment facilities. As such, the Commonwealth would then be left to absorb the costs associated with the control and maintenance of the Commonwealth's historic acid mine drainage discharges.

4. Treatment Options

AMDRI has evaluated potential treatment technologies to reduce TDS concentration to the proposed limits in its wastewater and has concluded all are prohibitively expensive and will not consistently meet the proposed TDS concentrations.[2]

In particular, AMDRI evaluated the potential use of a new treatment system consisting of a clarifier/softener, a reverse osmosis unit, and an evaporator/crystallizer to treat clarified effluent at Steele Shaft to a TDS concentration of less than 500 mg/L. The capital costs for AMDRI to implement would be **$170 million dollars** and the additional operating costs would be **$52.6 million dollars per year**. Furthermore, the power requirements would be 40 megawatts, which could require the construction of a new power plant, the costs of which have not been included. The operations would require increased chemical requirements (such as soda ash and sulfuric acid) and frequent deliveries of chemicals, thereby stressing the local infrastructure and creating the potential for spills and releases. The amount of solids related to this treatment

[1] *See* "Fact Sheet - Ten Percent Set Aside Program," *available at* http://www.depweb.state.pa.us/portal/server.pt/community/publications/13962/fact_sheet_-_ten_percent_set_aside_program/588923.

[2] AMDRI has considered a number of treatment options, including evaporation/crystallization (without reverse osmosis), electro-dialysis, precipitation, and liquid-liquid extraction. No treatment options evaluated were found by AMDRI to be technologically, economically, or environmentally feasible.

method would generate approximately 550 tons per day of residual waste which would need to be transported and landfilled at a yet-to-be-determined solid waste disposal facility. The proposed regulations do not take into consideration the potential environmental risks or costs posed by significant increased in the residual waste and emissions from the additional 40 MW power generation, this would effectively replace an aesthetic water quality issue with significant air emissions and waste management issues. Even if AMDRI were to undertake all of these operations, and absorb the millions of dollars of costs, AMDRI would not be able to accommodate the space requirements for this treatment method at its existing site. AMDRI has previously discussed these projected costs with the Department. Nevertheless, the Department has not considered these types of additional costs and potential environmental impacts in the proposed rulemaking.

5. The Department Has Failed to Demonstrate Legally Sufficient Grounds to Support The Proposed Chapter 95 Revisions

a. The Proposed Regulations Fail To Acknowledge That TDS, Chloride, and Sulfate, as Secondary Drinking Water Limits, are to be Met "At the Point of All Existing or Planned Surface Potable Water Supply Withdrawals"

Pursuant to 25 PA. CODE § 109.202(b)(2), Pennsylvania adopted the federal secondary maximum contaminant level's ("SMCL's") established by the EPA in the National Secondary Drinking Water Regulations at 40 C.F.R. § 143.3, which include SMCL's for TDS, chlorides, and sulfates. "Secondary maximum contaminant level," defined at 40 C.F.R. § 143.2, applies to:

> [P]ublic water systems and which, in the judgment of the Administrator, are requisite to protect the public welfare. *The SMCL means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of public water system.* Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition. (emphasis added).

Moreover, 25 PA. CODE § 96.3(d) requires that water quality criteria in Pennsylvania "for total dissolved solids, nitrite-nitrate nitrogen, phenolics, chloride, sulfate and fluoride established for the protection of potable water supply shall be met at least 99% of the time *at the point of all existing or planned surface potable water supply withdrawals* unless otherwise specified in this title." (emphasis added).

Our review of the Department's publicly available TDS, chloride, and sulfate sampling data from assorted Pennsylvania water bodies shows that samples have not been collected at the point of all existing or planned surface potable water supply withdrawals, as required by 25 PA. CODE § 96.3(d), and that the Department did not analyze their samples following EPA-approved methods.[3] The Department has erroneously relied on this same TDS, chloride, and sulfate sampling data, collected at the incorrect locations, in the proposal of these revisions to 25 PA. CODE § 95.10.

The Department has yet to demonstrate, with data calculated with EPA-approved methods and collected at the point of an existing or planned surface potable water supply withdrawals, that the water quality criteria for TDS, sulfates, and chlorides has not been met 99% of the time. As such, the proposed revisions to 25 PA. CODE § 95.10 are not properly supported.

b. TDS, Chloride, and Sulfate Limits Have Not Been Developed to Protect Against Human Health Risks

As noted above, 25 Pa. Code § 109.202(b)(2) adopts the EPA's National Secondary Drinking Water Regulations at 40 C.F.R. § 143.3. The purpose of these standards is provided in 40 C.F.R. § 143.1, which states the following:

> This part establishes National Secondary Drinking Water Regulations pursuant to section 1412 of the Safe Drinking Water Act, as amended (42 U.S.C. 300g–1). These regulations control contaminants in drinking water that primarily affect the *aesthetic qualities* relating to the public acceptance of drinking water. At considerably higher concentrations of these contaminants, health implications may also exist as well as aesthetic degradation. The regulations are not Federally enforceable but are intended as guidelines for the States.

(emphasis added). Moreover, 40 C.F.R. § 143.3 states the following about the SMCL's set by the EPA and adopted by the Department:

> These levels represent *reasonable goals* for drinking water quality. The States may establish higher or lower levels which may be appropriate dependent upon local conditions such as unavailability of alternate source waters or other compelling factors,

[3] *See* Section 5(d).

> provided that public health and welfare are not adversely affected.

(emphasis added). As designed by EPA, SMCL's are non-enforceable guidelines representing reasonable goals for Pennsylvania to follow for specific contaminants, which include TDS, chlorides, and sulfate, to protect aesthetic qualities of the public water supply, *i.e.*, the taste, odor, or color of drinking water.[4] Note that concentrations of TDS in excess of the proposed effluent limit of 500 mg/L do not necessarily present taste, odor, or color concerns. Bottled water sold lawfully throughout the Commonwealth commonly contains TDS concentrations in excess of the proposed limits. For instance, the label of a bottle of San Pellegrino mineral water plainly advertises that the product has a TDS concentration of approximately 948 mg/L and a sulfate concentration of 459 mg/L.

There is no question that national Secondary Drinking Water Regulations classify TDS as a contaminant that primarily affects the aesthetic qualities relating to the public acceptance of drinking water, rather than classifying TDS as a potential human health risk. In the proposed rulemaking, the Department has provided no information to demonstrate that infrequent concentrations of TDS, sulfates or chlorides above the proposed limits present any human health risk. The Department should withdraw the proposed regulations unless and until it can demonstrate that they are necessary in order to protect public health and safety.

c. *DBP Risks Should Not Be Imposed Upon All High-TDS Waters*

In Section "D. Background and Purpose" of the proposed 25 Pa. Code § 95 rulemaking (39 Pa. Bull. 6467), the Department cited that Disinfection By-Products ("DBPs"), including both brominated and chlorinated DBPs, have been identified by the EPA, the Allegheny County Health Department ("ACHD"), and the Department as posing a health risk. In particular, the Department has asserted that DBPs create "increased risks of bladder cancer to their customers." It is unclear why the Department included information regarding DBPs in Section "D. Background and Purpose" of the proposed 25 PA. CODE 95 rulemaking related to TDS, sulfates and chlorides. The inclusion of information regarding potential risks of DBPs is likely to mislead the public into believing that TDS, chloride, and sulfate concentrations are associated with DBP concentrations and, therefore, the DBP-related health risks may be considered in rulemaking regarding TDS. According to the U.S. EPA's website, DBPs are:

> [F]ormed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water." Different disinfectants produce

[4] The specific water quality criteria identified in 25 PA. CODE § 93.7 identify potable water supply ("PWS") as the only critical use that the TDS, sulfate, and chloride criteria are intended to protect.

> different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established have been identified in drinking water, including trihalomethanes, haloacetic acids, bromate, and chlorite.

(*available at* www.epa.gov/enviro/html/icr/gloss_dbp.html#dbp). Effluent from AMDRI's activities does not contribute to the formation of DBP concentrations in Pennsylvania's rivers or public water supply, since it does not disinfect its effluent with chlorine or bromine. DBPs originate from the disinfection of sanitary wastewater, and are not associated with coal mining, oil and gas drilling, or electric power generation. As such, sources of DBPs are a distinct subset of permitted dischargers that the Department did not accurately identify in the "Background and Purpose" Section of the proposed 25 PA. CODE 95 rulemaking. If the Department should choose to pursue a reduction of DBP concentrations in Pennsylvania's rivers, it should focus on this distinct subset of dischargers and provide them with clear instructions as how to reduce their respective DBP concentrations.

d. The Department's Use of USGS Test Method I-1749-85 is an Incorrect and Unapproved Test Method to Measure Concentration of TDS

Pursuant to 40 C.F.R. § 136(a), the "Guidelines Establishing Test Procedures for the Analysis of Pollutants", and 40 C.F.R. § 143.4(b), the "Monitoring for the National Secondary Drinking Water Regulations", the following analytical methodologies are listed as EPA-approved methods for determining TDS concentrations:

1. Standard Method 2540 C
2. USGS Method I-1750-85

The similarity between these two methods is that both require collected samples to be dried at 180°C before determining the TDS concentration. The Code of Federal Regulations does not list any alternative EPA-approved sampling methods that may be used in lieu of Standard Method 2540 C and USGS Method 1-1750-85 for determining TDS concentrations.

In the data published by the Department, including the sampling data from the Monongahela River that has been published and updated on the Southwest Regional Office's "Community Information" website[5], TDS samples are designated as "TDS @ 105°C." On August 4, 2009, an informal Right-to-Know Law request asked the Department to disclose the methods its laboratories used to determine TDS

[5] *Available at* www.depweb.state.pa.us/portal/server.pt/community/southwest_regional_office/13775/community_information/593161.

concentration and to defend the selection of its methods. The Department provided the following response to the request:

> The analytical method used to determine TDS for the Monongahela sampling was USGS-I-1749 used by Water Quality programs for stream analysis.

No explanation was provided as to why the Department chose the USGS-I-1749-85 methodology to determine TDS concentration. As discussed above, USGS-I-1749-85 is not an approved method pursuant to 40 C.F.R. § 136(a) and 40 C.F.R. § 143.4(b). The drying temperature required by USGS-1-1749 is 105°C, not 180°C. As such, AMDRI has serious concerns that moisture which would have evaporated at 180°C would remain if dried only to 105°C. Incomplete drying of a sample would result in the partially hydrated residual having an exaggerated mass, thereby producing inaccurately high TDS concentrations.

According to the American Public Health Association, the American Water Works Association, and the Water Environment Federation, "Residues dried at 103 to 105°C may retain not only water of crystallization but also some mechanically occluded water."[6] They also report that "Residues dried at 180 ± 2°C will lose almost all mechanically occluded water," and "[i]n general, evaporating and drying water samples at 180°C yields values for dissolved solids closer to those obtained through summation of individually determined mineral species than the dissolved solids values secured through drying at the lower temperature."[7]

AMDRI performed an independent study to compare TDS concentration results from Monongahela River samples obtained via the USGS I-1749-85 method used by the Department (where the sample is dried at 105°C), and concentration results obtained via the Standard Method (18th) 2540 C (where the sample is dried at 180°C), an EPA-approved method pursuant to 40 C.F.R. § 136(a) and 40 C.F.R. § 143.4(b). Study results revealed that samples analyzed using the Department's USGS I-1749-85 methodology produced TDS concentrations that averaged **18% higher** than the TDS concentrations measured in the same samples by the EPA-approved Standard Method (18th) 2540 C methodology. This study substantiates AMDRI's concern that drying of a sample at 105°C instead of 180°C would result in a partially hydrated residual, and cause an exaggerated TDS concentration for that sample. As such, all of the Department's TDS concentration results analyzed using the Department's USGS I-1749-85 methodology appear to be exaggerated and invalid.

For purposes of brevity, a table has been prepared to summarize AMDRI's study data, and is provided below.

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[6] STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER § 2540 Solids#(1)* (American Public Health Association, American Water Works Association, and Water Environment Federation 1999).
[7] *See* id.

Date	Location[8]	USGS Method I-1749-85 @ 105°C	Standard Method (18th) 2540 C @ 180°C	Difference (%)
9/4/09	Mon River Location No. 1	334	292	14%
9/8/09	Mon River Location No. 1	504	496	2%
9/14/09	Mon River Location No. 1	530	352	51%
9/21/09	Mon River Location No. 1	350	346	1%
9/28/09	Mon River Location No. 1	464	442	5%
10/5/09	Mon River Location No. 1	444	348	28%
10/14/09	Mon River Location No. 1	240	202	19%
10/19/09	Mon River Location No. 1	338	258	31%
10/26/09	Mon River Location No. 1	330	236	40%
9/4/09	Mon River Location No. 2	231	300	-23%
9/8/09	Mon River Location No. 2	560	420	33%
9/14/09	Mon River Location No. 2	478	328	46%
9/21/09	Mon River Location No. 2	352	328	7%
9/28/09	Mon River Location No. 2	338	402	-16%
10/5/09	Mon River Location No. 2	328	348	-6%
10/14/09	Mon River Location No. 2	324	384	-16%
10/19/09	Mon River Location No. 2	134	210	-36%
10/26/09	Mon River Location No. 2	290	268	8%
9/25/09	Mon River Location No. 3	636	388	64%
10/1/09	Mon River Location No. 3	636	388	64%
10/8/09	Mon River Location No. 3	224	184	22%
10/13/09	Mon River Location No. 3	488	244	100%
10/22/09	Mon River Location No. 3	244	284	-14%
10/27/09	Mon River Location No. 3	328	252	30%
11/3/09	Mon River Location No. 3	128	124	3%
11/12/09	Mon River Location No. 3	64	64	0%
11/18/09	Mon River Location No. 3	136	132	3%
	AVERAGE	**350**	**297**	**+18%**

Note that for the 5 results highlighted in the above table, the Department's I-1749-85 test methodology produced TDS concentrations above 500 mg/L[9], while the correct EPA-approved Standard Method (18th) 2540 C test methodology did not produce TDS concentrations above 500 mg/L.

e. *The Sampling Data Published by the Department is Insufficient, Not Transparent, and Poorly Managed.*

At present, the Department's only publicly available sample data for TDS, sulfate, and chloride concentrations is (1) the Department's surface water

[8] Locations Nos. 1, 2, and 3 are approximately located at RMI 86.5, RMI 88.7, and RMI 87.0, respectively.
[9] The Department's proposed TDS concentration limit of 500 mg/L in 25 PA. CODE § 95 is used here for comparison purposes only. According to 25 PA. CODE § 93.7, the present daily maximum TDS concentration is 750 mg/L.

quality sampling data for the Monongahela River available on its Southwest Regional Office's ("SWRO's) website for "Community Involvement" and (2) the River Alert Information Network ("RAIN") continuous on-line Monongahela River monitoring system data available at its website (*available at* 3rain.org). AMDRI believes that this sampling data published by the Department is insufficient, invalid, not transparent to the public, and poorly managed by the Department.

Section "D. Background and Purposes" of the proposed rulemaking, as published in the *Pennsylvania Bulletin* (39 Pa. Bull. 6467), states the following:

> The Department has studied the results of stream monitoring and has conducted an analysis of the water quality of the *Beaver River* in western Pennsylvania. These results show upward trends in TDS concentrations. The Department has also *conducted similar studies* on the *Shenango* and *Neshannock Rivers*, with similar upward trends in TDS concentrations.
>
> In addition, watershed analyses conducted by the Department of the *West Branch of the Susquehanna River* and the *Moshannon River Watersheds* have *documented* that they are also severely limited in the capacity to assimilate new loads of TDS and sulfates.[10]

(emphasis added). The Department has not published any of the cited results, analyses, studies and documentation from the Beaver, Shenango, Neshannock, Susquehanna, and Moshannon Rivers that it considered when drafting the proposed revisions to 25 PA. CODE § 95. It has only published the limited aforementioned sample data for the Monongahela River. The Department's assertion that surface water is suffering adverse effects of elevated TDS, sulfate, and chloride concentrations statewide has not been adequately evidenced to the public by the Department.

In addition, the Department's latest revision (the January 14, 2010 revision) to the surface water quality sampling data for the Monongahela River posted on the "Community Involvement" section SWRO's website is sparse, spanning from October 14, 2008 to December 30, 2008 and September 8, 2009 to January 5, 2010 (while omitting a nine month period from December 31, 2008 to

[10] Note that there is no reference to chloride exceedances in regards to any of the surface waters cited by the Department.

September 7, 2009).[11] Collectively, this totals **less than seven months of sampling for the Monongahela River** that the Department analyzed and ultimately published. Moreover, while clearly specifying the use of an incorrect 105° C test method, the Department's seven months of sampling data is noticeably unsupported by any documentation or records of sampling events, laboratory reports, or field notes available for public review and comment.

As such, AMDRI questions the quality of this data allegedly supporting the Department's proposed revisions to 25 PA. CODE § 95, specifically if and how the Department conducts any quality assurance/quality control of the data prior to its use and posting on the SWRO's website. Additional irregularities with the Department's data have been observed. For example, please refer to the Department's most recent January 14, 2010 revision and the previous December 7, 2009 revision to the surface water quality sampling data for the Monongahela River posed on the SWRO's website.[12] AMDRI's review and comparison of the data in both revisions revealed that the Department made **major changes to 15 samples previously reported by the Department**, some of which date as far back as October 22, 2008. There is no explanation for the changes, nor are the changes consistent in the nature of the modification. The following table summarizes the Department's modifications:

RMI	SAMPLE LOCATION	SAMPLE ID #	DATE COLLECTED	PA DEP'S VERSION	SPECIFIC CONDUCTANCE (µs/cm)	TDS @ 105°c (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
85.5	Mon River RMI 85.5 upstream of Georgia's Creek	0593-030	10/22/2008	1/14/10	NA	147	32	230
				12/7/09	942	666	18.4	374
84.0	Mon River RMI 84.0 upstream of Jacob's Creek	0593-031	10/22/2008	1/14/10	NA	82	16	80
				12/7/09	812	580	16.3	316
69.0	Mon River RMI 69.0 upstream of Pumpkin Run	0552-873	10/22/2008	1/14/10	NA	850	49.9	428
				12/7/09	906	786	38	429
66.0	Mon River RMI 66.0 upstream of Tenmile Creek	0552-872	10/22/2008	1/14/10	991	756	37.4	395
				12/7/09	895	794	39.5	416
50.5	Mon River RMI 50.5 near Newell, PA	1523-157	12/30/2008	1/14/10	115	194	11	77.5
				12/7/09	298	194	11	77.5
34.2	Mon River RMI 32.2	0594-126	10/22/2008	1/14/10	580	NA	NA	NA

[11] Note that the Department does not provide any public notice regarding update or revisions to the limited surface water quality sampling data for the Monongahela River posted on the "Community Involvement" section SWRO's website.

[12] While the Department may be in possession of additional revisions, the January 14, 2010 and December 7, 2009 revisions are the last made publicly available by the Department. Please note that the Department's December 7, 2009 revision is no longer publicly available on its website.

	upstream of Sunfish Run			12/7/09	1066	732	58.7	362
32.5	Mon River RMI 32.5 upstream of Pigeon Creek	0594-127	10/22/2008	1/14/10	240	NA	NA	NA
				12/7/09	1090	738	62.6	367
30.0	Mon River RMI 30.0 upstream of Mingo Creek	0594-128	10/22/2008	1/14/10	195	142	9.97	47.8
				12/7/09	1160	804	64.5	399
26.0	Mon River RMI 26.0 upstream of Kelly Run	0594-129	10/22/2008	1/14/10	870	580	28.4	282
				12/7/09	1120	800	46	391
24.0	Mon River RMI 24.0 USGS Gage Sta Elizabeth	NA	12/30/2008	1/14/10	241	546	37.5	254
				12/7/09	241	NA	NA	NA
24.0	Mon River RMI 24.0 USGS Gage Sta Elizabeth	NA	10/7/2009	1/14/10	826	576	36.3	285
				12/7/09	826	NA	NA	NA
24.0	Mon River RMI 24.0 USGS Gage Sta Elizabeth	NA	10/13/2009	1/14/10	901	568	44.2	279
				12/7/09	NA	NA	NA	NA
12.0	Mon River RMI 12.0 upstream of Turtle Creek	0594-135	10/22/2008	1/14/10	855	808	30.9	207
				12/7/09	746	480	48.1	225
11.0	Mon River RMI 11.0 downstream of Turtle Creek	0552-868	10/17/2008	1/14/10	801	400	31.2	100
				12/7/09	666	524	52.3	279.2
4.5	Mon River RMI 4.5 near Glenwood, PA	CMU	11/24/2009	1/14/10	Deleted	Deleted	Deleted	Deleted
				12/7/09	NA	BLANK	45.1	154.3

These modifications are a clear illustration of the Department's poor data quality management, in addition to a clear demonstration that there are conspicuous risks to the Department if it relies upon a relatively small set of sample data from one watershed to implement these proposed revisions to 25 PA. CODE § 95 statewide. Additionally, it is important to note that this is the same sample data the public is relying upon to draft its comments.

Lastly, the RAIN monitoring network at 3rain.org began providing water quality data on or about December 11, 2009, over a month after this proposed rulemaking was published in the *Pennsylvania Bulletin* (39 Pa. Bull. 6467). This information, while useful for current water quality data (updated hourly, on average), does not publicly provide any historic table or log of the data collected by these monitors on the website. Also, there is no indication that RAIN data is produced following approved test methods with proper quality assurance and quality control, so the validity of the data posted remains in question. Therefore, the information collected by RAIN cannot be downloaded and analyzed by the public at this time.

The lack of properly managed publicly-available data are clear examples why Pennsylvania should not proceed with the Department's proposed revisions to 25 PA. CODE § 95.

f. The Department Does Not Address Why the Current Water Quality Criteria for Pennsylvania Are Inadequate

The current surface water quality criteria from 25 PA. CODE § 93.7 provide for a chloride limit of 250 mg/L maximum, sulfate limit of 250 mg/L maximum, and a TDS limit of 500 mg/L as a monthly average and 750 mg/L maximum at the point of an existing or planned surface potable water supply withdrawal. As such, the Department already has the authority to support water quality criteria on any discharge into a surface water in Pennsylvania. Therefore, the Department has no need for the proposed TDS, chloride, and sulfate effluent limits of effluent limits 25 PA. CODE § 95, when the Department has the ability to apply the surface water quality criteria for the same contaminants under 25 PA. CODE § 93.7.

AMDRI has observed that the Department has not mentioned in the proposed rulemaking the existing standards set forth in 25 PA. CODE § 93 during recent discussions of elevated TDS in the Monongahela River. PADEP has not produced a single properly collected[13] or documented exceedance of these standards using EPA-approved analytical methodology specified in 40 C.F.R. § 136(a) and 40 C.F.R. § 143.4(b).

g. The Department's Proposed Chapter 95.10(b)(5), Applying to Groundwater Discharges, Should be Deleted

The Department has proposed the following language in 25 PA. CODE § 95.10(b)(5), which would require discharges to groundwater to comply with 25 PA. CODE §§ 91.51 and 91.52:

> In addition to paragraphs (1)-(4), discharges to groundwater, including land application and discharges to existing mine pools, must comply with §§ 91.51 and 91.52 (relating to underground disposal).

This proposed regulation serves merely as a cross reference to 25 PA. CODE §§ 91.51 and 91.52, and therefore does not serve any substantive regulatory purpose or add any meaningful value to the existing regulations. In fact, since the rest of the Department's proposed revisions to 25 PA. CODE § 95 apply to

[13] That is, at the point of an existing or planned surface potable water supply withdrawal.

surface water discharges, inclusion of a superfluous provision applying to groundwater discharges could potentially confuse the public. As such, AMDRI requests that the Department delete the proposed 25 PA. CODE § 95.10(b)(5).

h. *The Department's Economic Analysis is Insufficient and Does Not Satisfy the Standards Required by the Clean Streams Law*

Section 5 (a) (5) of The Clean Streams Law (P.L 1987, Act 394 of 1937, as amended) requires the Department, when adopting rules and regulations in *the exercise of sound judgment and discretion,* consider the "immediate and long-range economic impact upon the Commonwealth and its citizens." As such, Section "F. Benefits, Costs and Compliance Costs" of the proposed rulemaking, as published in the *Pennsylvania Bulletin* (39 Pa. Bull. 6467) states the following:

> New or increased discharges will be required to install advanced treatment to meet the requirements of this proposed rulemaking. It is anticipated that treatment costs could be on the order of $0.25/gallon.

Conversely, the Department states the following in Section "D. Background and Purpose" of the same proposed rulemaking:

> [C]urrently no treatment exists for TDS, sulfates and chlorides other than dilution." And that "...dilution can no longer be considered adequate treatment for high TDS wastewaters."

The Department's Regulatory Analysis #7-446, which was provided to AMDRI pursuant to Section H of the proposed regulation, does not provide any basis or supporting information regarding the proposed treatment costs of $0.25 per gallon.[14] Moreover, AMDRI understands that the proposed treatment costs of $0.25 per gallon were calculated in regards to only the treatment of produced water from certain oil and gas operations. Assuming arguendo that this cost estimate is correct in the context of produced water treatment, the Department should not make the supposition that this flat treatment cost would apply to other industries. With regard to AMDRI's operations, many factors are different than those applied to treatment of produced water from gas wells, and would demonstrate treatment costs well above the Department's proposed cost of $0.25 per gallon.

[14] The Department's Regulatory Analysis #7-446 projects no costs to local or state governments for implementation of the proposed changes to 25 Pa. Code § 95. However, the proposed Chapter 95 amendments suggest health threats from DBPs, but do not require any publicly owned treatment works ("POTWs") to address DBPs. As stated in the comments above, DBPs do not originate from mines, gas wells or power plants. They arise primarily from disinfection of sanitary wastewaters at POTWs. The Department is incorrect in its assertion that DBPs can be addressed without any cost to local government.

Accurate cost and treatment information is vital for the public to have and understand the impact of the Department's proposed regulations. Absent this information, the Department has not satisfied the requirements of Section 5 (a) (5) of The Clean Streams Law, namely by not:

1. Providing the basis for an anticipated cost of $0.25 per gallon.
2. Providing any immediate or long-range economic impact analysis.
3. Providing any industry-specific immediate or long-range economic impact analysis.
4. Providing any watershed-specific immediate or long-range economic impact analysis, since the Department is purporting to implement the proposed changes to 25 PA. CODE § 95 statewide.
5. Providing any information regarding costs to comply within the Department's proposed timeline, with an immutable implementation date of January 1, 2011.
6. Providing any immediate or long-range economic impact analysis regarding the costs associated with the implementation of treatment technology (which is yet to be identified), including, but not limited to, additional energy requirements for the treatment technology, solid or residual waste disposal, and greenhouse gas emissions related to the treatment technology.
7. Providing any immediate or long-range economic impact analysis on Pennsylvania's economy, resulting from implementation of the proposed changes to 25 PA. CODE § 95.

Lastly, the proposed changes to 25 PA. CODE § 95 subject existing mine drainage treatment facilities to the new effluent limits when the discharges are increased or expanded. The costs associated to comply with these effluent limits for orphan discharges would be prohibitive for industry as well as water conservation groups seeking to treat historic mine drainage. Assuming arguendo that the Department's estimated treatment costs of $0.25 per gallon were accurate and could actually be applied to mine drainage treatment facilities, the cost of treating TDS, sulfate, and chloride concentrations to the proposed effluent limits for the average volume of acid mine drainage from one Pennsylvania abandoned coal mine in Greene County with an approximate flow of 3,000 gpm would be over $1.2 million/day, and over $400 million/year. Note that this cost would be in addition to the costs related to removing the metals representing the primary contaminants of AMD, which include manganese, iron, and aluminum. As such, the proposed rules thereby create a powerful disincentive for either industry or watershed groups to expand or improve AMD treatment in Pennsylvania. The likely outcome of the proposed rules would force the Commonwealth to absorb the costs of treating abandoned mine drainage that is currently being treated by third parties such as AMDRI. The Department's Regulatory Analysis #7-446 does not acknowledge the economic

impact to the Commonwealth caused by the lost of private efforts to address AMD treatment in Pennsylvania, and the increased costs that the Commonwealth would be forced to assume by reduced private efforts.

The bottom line is that the Department has not conducted a sufficient economic analysis pursuant to of Section 5(a)(5) of The Clean Streams Law. The Department must comply with this requirement before proceeding with the proposed changes to 25 PA. CODE § 95.

i. The Department Must Exempt All Acid Mine Discharges from the Effluent Limits in the Proposed 25 PA. CODE § 95 Revisions

As noted above, AMDRI holds that the proposed 25 PA. CODE § 95 revisions are unnecessary, unreasonable, and should be withdrawn. However, should the Department elect to proceed with the proposed regulations and the TDS, chloride, and sulfate limits therein, the Department should exempt from regulating all existing and future AMD treatment facilities (including expansions to treatment facilities) for mine discharge from historic mining operations. Without this exemption, the proposed rules create a powerful disincentive for private entities, like AMDRI, or watershed groups to build and maintain AMD treatment in Pennsylvania, thereby increasing the AMD treatment costs that must be assumed by the Commonwealth.

6. Prospective Harm to AMDRI

If the proposed 25 PA. CODE § 95 effluent limits for TDS, chloride, and sulfate are adopted and implemented, AMDRI will be forced to cease its AMD treatment operations. If this were to occur, the metals representing the primary contaminants in historic post-mining discharges presently treated by AMDRI will not be treated. Cessation of AMD treatment would increase the possibility of a mine pool breakout, which would result in an ecological disaster to Dunkard Creek and the Monongahela River Watershed.

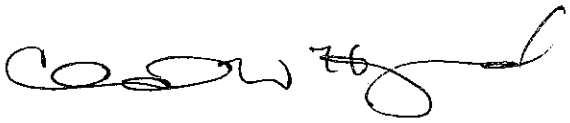
7. Conclusion

In summary, the Department has failed to provide the required scientific support demonstrating the need for the Commonwealth to implement the proposed 25 PA. CODE § 95 revisions. As discussed in AMDRI comments, the Department's rushed collection of insufficient and incorrect sample data, in addition to an incomplete economic analysis and a lack of cost-effective, available treatment technology, has resulted in proposed regulations that fail to support the need for the stringent new effluent limits suggested by the Department. If adopted by the Commonwealth, the proposed 25 PA. CODE § 95 revisions will have a chilling effect on AMD projects, thereby

potentially causing environmental harm. As such, AMDRI respectfully requests that the Department withdraw the proposed 25 PA. CODE § 95 revisions.

Thank you for your consideration of these comments. Please contact me if I can provide further information in this matter.

Sincerely,



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Proposed Amendments to 25 PA Code Part I, Subpart C, Article II, Chapter 95 - WastewaterTreatment Requirements
39 Pa.B. 6467 – November 7, 2009
Doc. N0. 09-2065

- The Department has not demonstrated the need for the proposed amendments:
  - PADEP characterized the Fall, 2008 rise in TDS "historic", USGS data confirms that this is a recurring circumstance associated with drought conditions.
  - PADEP's laboratory data for TDS have been produced using an incorrect, unapproved test method which exaggerates results. EPA-approved methods specified at 40 CFR §136(a) and 40 CFR §143.4(b) must be followed in order to compare results to regulatory standards.
  - PADEP has incorrectly applied secondary drinking water MCL's to river water samples. 25 Pa. Code § 96.3(d) clearly instructs that standards for TDS, chloride and sulfate shall be met at least 99% of the time "at the point of existing or planned surface potable water supply withdrawals". Applicable surface water quality standards for river water samples exist at 25 Pa. Code §93.7.
  - Public health has not been threatened by TDS levels observed in the Mon River. PA's secondary drinking water standards incorporate non-enforceable federal guidelines, designed to protect aesthetic qualities of color, taste, and odor. According to EPA, health implications may exist at "considerably higher concentrations".
  - PaDEP has yet to publicly present documentation of a single sample, obtained at the correct location, tested using the correct method, demonstrating an exceedence of the secondary MCL or surface water quality standard for TDS in PA.
- PADEP has incorrectly associated the toxicity of disinfection byproducts with the broader category of TDS, which implies a human health threat and overstates the environmental threat from TDS. Yet the proposed amendments do not target (they don't even mention) DBP's.
- Cost effective treatment to remove TDS from wastewater does not exist. Energy intensive alternatives for evaporation or reverse osmosis would trade an aesthetic water quality condition for significant air emissions and residual waste disposal issues, at exorbitant cost.
- PADEP has not produced a meaningful economic analysis of implications of the proposed Chapter 95 amendments. Implications will not be limited to industrial dischargers, but would also affect publicly owned potable and sanitary treatment facilities. The term "new discharge" is sufficiently broad that existing discharges would soon be affected due to typical changes in water quality and treatment volume.
- The Chapter 95 amendments would impose over-restrictive rules, at great expense, and may cause further environmental harm. The amendments would have a chilling effect on projects to mitigate acid mine drainage from abandoned mines. AMDRI would have to cease operations.