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## The Department of Environmental Quality's Perspective: TMDLs in Montana

Art Compton\*

At the Department of Environmental Quality (DEQ), we look at the Total Maximum Daily Load (TMDL) program as the integration of all impacts pertaining to statewide water quality.<sup>1</sup> Currently, our water quality program is all encompassing, and includes the TMDL effort itself, as well as the discharge permit program and all of our water planning efforts.<sup>2</sup> We may not be as good in actually accomplishing TMDLs as we are in discussing them. But this is the basic concept behind the State's water quality effort.

Two points regarding TMDLs merit discussion. First, TMDLs are not designed to maintain the status quo. TMDLs are designed to return a stream reach or a water body into fully supporting all beneficial uses.<sup>3</sup> By definition, TMDLs are developed to improve water quality for those waters that do not currently support or do not fully support such beneficial uses.

Secondly, House Bill 546, Montana's TMDL enabling legislation, requires that a collaborative approach be used in establishing TMDLs.<sup>4</sup> This legislation is the cornerstone of the TMDL approach in Montana, and impacts DEQ's role in the TMDL process since the legislation does not specifically or structurally regulate nonpoint source pollution. In other words, neither the federal nor state governments are responsible for TMDL enforcement on the ground. And although special interest groups often debate who has enforcement authority, no one ever mentions the "V" word, and that is "voluntary."<sup>5</sup> In Montana, taking steps to implement plans to reduce and eliminate nonpoint source pollution is voluntary on the part of the very people that have to do it, and those are landowners and land users in the

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1. Federal Water Pollution Control Act, 33 U.S.C. § 1313(d)(1)(C) (1994); MONT. CODE ANN. §§ 75-5-701 to -703 (2001). The State defines a TMDL as the sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable surface water quality standards. MONT. CODE ANN. § 75-5-101(32). DEQ defines a TMDL as the total amount of a pollutant, per day, (including a margin of safety) that a water body may receive from any source (point, nonpoint, or natural background) without exceeding the state water quality standards. What is Total Maximum Daily Load (TMDL)? (2001), at [http://www.deq.state.mt.us/ppa/mdm/TMDL/tmdl\\_definition.asp](http://www.deq.state.mt.us/ppa/mdm/TMDL/tmdl_definition.asp).

2. 33 U.S.C. § 1342; MONT. CODE ANN. § 75-5-401.

3. MONT. CODE ANN. § 75-5-101 (the purpose of the State's water quality statute is to provide a comprehensive program for the prevention, abatement, and control of water pollution).

4. *Id.* §§ 75-5-702(4), 75-5-703(1)-(2).

5. *Id.* § 75-5-703(8) (DEQ shall "support a voluntary program of reasonable land, soil, and water conservation practices to achieve compliance with water quality standards for nonpoint source activities for water bodies that are subject to a TMDL").

watersheds. Herein lies the problem with respect to timely and efficient completion of TMDLs.

Since the TMDL program is voluntary, the DEQ staff find themselves in the position of proactively marketing the program. DEQ watershed coordinators actually have to go out and sell the program to local watershed groups. However, the watershed coordinators, most of whom spend much of their time with watershed groups, understand the concerns on the ground. The coordinators recognize that it is a lot to ask a landowner or a land user to dramatically restructure family farming, ranching or silvicultural practices that have been used on private property for two or three generations. In addition, the costs associated with such restructuring can be substantial. However, most watershed groups are 100 percent behind the effort to protect water quality as their agricultural and silvicultural businesses typically depend upon a clean water source. Water quality significantly impacts their businesses and watershed groups are therefore willing to contribute to water quality improvements.

TMDLs can be developed by using a basic water quality model. DEQ could come up with percent reductions, based upon real numbers with respect to targets for nutrients, sedimentation and chemical constituents. In fact, some states have taken this approach. However, DEQ is required by House Bill 546 to take a collaborative approach and work with the people who will implement the TMDLs in order to return their neighborhood water bodies to fully supporting beneficial uses.<sup>6</sup> Due to the voluntary nature of the TMDL program, DEQ staff often have difficulty "licking the stamp" and sending the TMDL in for approval in a timely fashion.<sup>7</sup> From now until eternity, DEQ will be developing and seeking approvals for all of the TMDLs on the 1996 303(d) list.<sup>8</sup> However, whether DEQ will complete all of these TMDLs by 2007 remains an open question because it is very difficult to reach consensus on TMDLs. But until DEQ's marching orders change, consensus is the approach that the Agency is committed to based upon the 1997 legislation passed by the State.<sup>9</sup>

A quick word on the 303(d) list itself.<sup>10</sup> The 2000 list was finalized after a round of 17 public meetings. Gerald Mueller gave me some advice

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6. *Id.* §§ 75-5-702(4), 75-5-703(1)-(2).

7. 33 U.S.C. §§ 1313(a)(3)(C), 1313(b) (the Environmental Protection Agency has responsibility for approving all TMDLs developed by state agencies).

8. MONT. CODE ANN. § 75-5-702; 33 U.S.C. §§ 1313(d)(1)(A), 1313(d)(1)(B) (DEQ must identify all water bodies for which technology-based, point source NPDES permits are insufficient to implement applicable water quality standards, and place all such water bodies on the Water Quality Limited Segments list); Montana 1996 303(d) List Information (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/1996303d.asp](http://www.deq.state.mt.us/ppa/mdm/303_d/1996303d.asp).

9. MONT. CODE ANN. §§ 75-5-702(4), 75-5-703(1)-(2).

10. *Id.* § 75-5-702; 33 U.S.C. §§ 1313(d)(1)(A), 1313(d)(1)(B).

last year, as I was fairly new to this program. He recommended having two public meetings statewide rather than 17 smaller meetings in order to avoid spending all of our time arguing over what water should and should not be included on the list. Of course, I did not take Gerald's advice. DEQ held 17 public meetings and the Agency spent a lot of time arguing about why particular water bodies were on the list.

Based in part upon these public meetings, the 2000 list turned out to be half the size of the 1996 list.<sup>11</sup> However, from a program manager's perspective, there is not much difference between the 1996 and 2000 lists. The 1992, 1994 and 1996 lists grew as DEQ's assessment efforts increased. During this period, the lists included waters that DEQ believed to be impaired, but the Agency often lacked the data to back up the listing which upset some local watershed groups. In an effort to address this issue, the State's 1997 TMDL legislation required DEQ to establish "sufficient and credible data" which basically proves beyond a reasonable doubt that, in fact, a water body that is not supporting beneficial uses deserves to be on the 303(d) list.<sup>12</sup>

For the vast majority of these streams, DEQ simply does not have enough water quality data to demonstrate conclusively to the people that live and work along them, that the water bodies belong on the 303(d) list. Obtaining additional data is one of our priorities. However, it is important to point out that the vast majority of streams removed from the 1996 list were placed on the reassessment list. These streams have not been forever cordoned off into the ozone. The gut feeling at the Agency is that DEQ will ultimately collect sufficient and credible data to show that TMDLs need to be written for these water bodies because they are not fully supporting their beneficial uses. Therefore, DEQ will eventually develop TMDLs on the streams that were removed from the 1996 list once these water bodies are reassessed. DEQ has schedules for every stream, every subwatershed and every stream reach on the 1996 list.<sup>13</sup> So again, from my perspective the distinction between the 1996 list and the 2000 list is minimal.

Regardless of these distinctions, the purpose of the 303(d) list is to

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11. Montana 1996 303(d) List Information (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/1996303d.asp](http://www.deq.state.mt.us/ppa/mdm/303_d/1996303d.asp). Montana 2000 303(d) List Information (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/303\\_d\\_list-draft.asp](http://www.deq.state.mt.us/ppa/mdm/303_d/303_d_list-draft.asp). The DEQ website, Environet, is also a good source of TMDL information. The site has impaired waters lists, TMDLs that are both in development and approved, and information on a host of technical issues. Users can click on a stream reach to view available water quality data, as well as the list of beneficial uses that are supported. The site is fully functional although it is still under development as only a portion of the state is currently represented.

12. MONT. CODE ANN. § 75-5-702(2).

13. Montana 303 D List: A Compilation of Impaired and Threatened Water Bodies in Need of Restoration, Part B Water Body Ranking, Priority Lists, and Schedules (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/303d\\_partB.pdf](http://www.deq.state.mt.us/ppa/mdm/303_d/303d_partB.pdf).

identify water bodies which do not support their beneficial uses.<sup>14</sup> Once these water bodies are identified, DEQ then tries to analyze the causes and sources of the pollution, and assign a TMDL priority to each water body.<sup>15</sup> The staff works hard on establishing TMDL priorities, and of course some groups want their water bodies done first, while others do not want theirs done at all. So prioritizing involves a kind of balancing act.

When DEQ assesses water bodies, the first thing the staff does is figure out what data is available. We use United States Geological Survey (USGS) Federal Land Management data, state historical water quality data, and whatever else is available. The data is then evaluated, and provided the sufficient and credible data test is met, and the water bodies are not supporting their beneficial uses, the water bodies are placed on the 303(d) list and the information goes into the federal water quality database.<sup>16</sup> Again, it is important to remember that DEQ cannot just place water bodies on the 303(d) list based upon Agency whims or a drive-by windshield inspection that showed a head cut. Although head cuts often indicate that a sedimentation problem exists in a stream, this fact alone is not considered to be sufficient and credible data.

The official definition of sufficient and credible data requires DEQ to collect, "chemical, physical or biological monitoring data alone or in combination with a myriad of information that supports whether the water is achieving compliance with applicable water quality standards."<sup>17</sup> Although the definition seems fairly straightforward and simple, it is not easy for DEQ to comply with this mandate. The sufficient and credible test requires a fair amount of information prior to making a determination regarding whether a water body should be placed on the 303(d) list. In fact, based upon this definition, DEQ did not have enough water quality data for about half the streams on the 1996 list.

For instance, water chemistry encompasses the chemical, metal, and other constituents of a physical habitat. A number of the streams on both the 1996 and 2000 lists were impaired because of habitat alteration.<sup>18</sup> These streams did not support aquatic life or a productive fishery because of habitat alteration which usually results from a lack of stability and excessive channel movement or stream-bank erosion.

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14. MONT. CODE ANN. § 75-5-702; 33 U.S.C. §§ 1313(d)(1)(A), 1313(d)(1)(B).

15. MONT. CODE ANN. at §§ 75-5-702 to -703.

16. *Id.* § 75-5-301.

17. *Id.* § 75-5-101(30).

18. For example, in the Musselshell River Basin many reaches of the Musselshell River, as well as Careless Creek, suffer from streambank modification and destabilization. Montana 1996 303(d) List Information, Table of Impaired and Threatened Streams (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/pdf/1996\\_303d\\_Streams.pdf](http://www.deq.state.mt.us/ppa/mdm/303_d/pdf/1996_303d_Streams.pdf).

The biological criteria are equally challenging. For example, if insects are absent from a stream that should have insects, then the stream is not supporting its beneficial use because the bottom layer of the aquatic life pyramid is not in place. DEQ must then figure out what the problem is and develop an implementation plan to address this problem.

In addition to the chemical and biological criteria, Montana water quality standards must also be considered. Every surface water in the State has a water classification which designates what beneficial uses the stream reach will support and establishes criteria for protecting those beneficial uses.<sup>19</sup> Generally, beneficial uses in eastern Montana focus on warm-water fisheries and agriculture.<sup>20</sup> Conversely, in western Montana, cold-water fisheries and human and municipal uses dominate.<sup>21</sup> Big geographic differences exist between eastern and western Montana regarding the type of fisheries the water bodies support, and whether surface waters support human consumption.

Therefore, the assessment process is far from simple and involves a variety of disciplines.<sup>22</sup> To compound these technical difficulties, DEQ must go through this drill, which requires a great deal of public involvement, every other year.<sup>23</sup> And again, the local concern DEQ generally encounters involves questions about why local water bodies are considered impaired when resident landowners and land users believe the water quality is fine, and therefore do not see the need to have a TMDL written. There is an element of fear and loathing out in the watersheds with respect to TMDL

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19. MONT. CODE ANN. § 75-5-301 (the Board of Environmental Review must establish the classification of all state waters in accordance with their present and future most beneficial uses). The beneficial uses allocated depend on the stream classification, and include: human consumption; fish and other aquatic life; wildlife; industrial; and agricultural. *Id.* § 75-5-101. Water for agricultural uses must be suitable for irrigation or stock-water use. Water for industrial water uses are generally for municipal water supplies in cities and towns. *See id.* § 75-5-310 (requires site-specific standards of water quality for aquatic life).

20. Wolf Creek on the Middle Missouri River Basin lists the following beneficial uses: agriculture, drinking water supply, recreation and warm water fishery. Montana 1996 303(d) List Information, Table of Impaired and Threatened Streams (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/pdf/1996\\_303d\\_Streams.pdf](http://www.deq.state.mt.us/ppa/mdm/303_d/pdf/1996_303d_Streams.pdf).

21. Silver Bow Creek on the Upper Clark Fork of the Columbia River Basin lists the following beneficial uses: aquatic life support, cold water fishery (trout), drinking water supply, recreation and swimmable. Montana 1996 303(d) List Information, Table of Impaired and Threatened Streams (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/pdf/1996\\_303d\\_Streams.pdf](http://www.deq.state.mt.us/ppa/mdm/303_d/pdf/1996_303d_Streams.pdf).

22. The coal bed methane development in Wyoming and the Powder River country in eastern Montana is generating a great deal of controversy in this area. The Legislature recently delegated some coal bed methane water exploratory research and decision-making tasks that will involve complex water quality assessment expertise to Jack Stanford at Yellow Bay.

23. Water Quality Planning and Management, 40 C.F.R. § 130.8 (2001); MONT. CODE ANN. § 75-5-301(3); *see generally id.* § 75-5-703(5); Federal Water Pollution Control Act, 33 U.S.C. §§ 1311, 1313(e).

development. Again, taking what has been generations of land and water use, reducing them to a number and sending it to Washington D.C. to get approved scares people. Perhaps rightly so; I do not know.

On the 2000 list, 464 streams appear.<sup>24</sup> The water bodies listed that fully support their beneficial uses are definitely in the minority, comprising only 3 percent of the list. TMDL implementation plans are in place for only two of these streams. Currently, 45 TMDLs are ongoing and 8 more TMDLs have been sent to the Environmental Protection Agency (EPA) for approval.<sup>25</sup> The other 486 water bodies are on the reassessment list. These streams became DEQ's monitoring priority so that their status can be established to the satisfaction of local landowners and land users who are probably our biggest critics. In other words, DEQ must make sure that the Agency has a full suite of sufficient and credible data in order to satisfy these groups and to demonstrate that the stream reach where land owners have lived and worked for the last 30 years is in need of attention.

As previously discussed, the vast majority of the 486 streams on the reassessment list will go right back on the 303(d) list. That is why I am not overly concerned about making a distinction between the two lists. The bottom line is that it does not really matter which list DEQ uses. The Agency is going to do TMDLs on every stream reach that needs one.

DEQ has made some progress in our approach to developing TMDLs. It became clear to both the managers and the staff that in order to reach our legal deadline of 2007, the Agency would need to alter its approach.<sup>26</sup> So DEQ divided the state into 91 subwatersheds based on local geology, land uses and a host of other factors. This division makes the TMDL development efforts a little more efficient. Assuming that each one of these 91 watersheds has an average of 6 to 8 impaired stream reaches, DEQ can spend a year and a half with the local watershed group developing implementation plans for 2 or 3 of the water bodies that the group is most invested or concerned with, and hopefully the other 4 or 5 plans in that subwatershed can be prepared a bit more expeditiously.<sup>27</sup> Unfortunately, there are not enough days in the year, nor enough years between now and the

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24. Montana 2000 303(d) List Information (2001), at [http://www.deq.state.mt.us/ppa/mdm/303\\_d/303\\_d\\_list-draft.asp](http://www.deq.state.mt.us/ppa/mdm/303_d/303_d_list-draft.asp).

25. Summary of TMDL Approvals in Montana (2001), at [http://www.deq.state.mt.us/ppa/mdm/tmdl/summary\\_of\\_tmdls.asp](http://www.deq.state.mt.us/ppa/mdm/tmdl/summary_of_tmdls.asp).

26. *Friends of the Wild Swan, Inc. v. EPA*, 130 F. Supp. 2d 1207, 1210 (D. Mont. 2000) (held that DEQ has until May 5, 2007 to develop TMDLs for all water bodies on the 1996 list). *See also* MONT. CODE ANN. § 75-5-703.

27. Local landowners, land users and federal land managers, among other, are members of local watershed groups. *See* MONT. CODE ANN. § 75-5-704. Federal land managers play a key role in TMDL development, especially in western Montana where a great deal of the higher elevation watersheds are under federal management.

2007 deadline to allow DEQ to spend a year and a half on each and every impaired stream reach. Hopefully, this approach of focusing on 2 or 3 reaches of local concern, one watershed at a time, will permit DEQ to adhere to a schedule that will give the Agency a chance of actually making the statutory deadlines.

DEQ views the TMDL program as probably the most important thing the Agency, as well as State government, does with respect to the environmental quality. It is something that the Agency takes very seriously, and we are constantly politicking for increased staffing and monetary support for the TMDL program. We lose sleep over the program at night and tear our hair out over TMDLs in the morning. But we believe the TMDL program represents a unique opportunity to return water bodies to fully supporting their beneficial uses.

However, concerns regarding the failure, lack of success or non-performance of state agencies trying to get TMDLs done, and the risk of EPA having to do TMDLs on behalf of states which do not comply with the federal program, is real.<sup>28</sup> The bottoms-up, grass-roots approach tends to be agonizingly slow and frustrating as some brief anecdotal evidence suggests. For example, DEQ's lower Missouri watershed coordinator spent months with the watershed group on the south fork of the Musselshell. The feelings of the watershed participants regarding the TMDL process evolved from curiosity to mild excitement (about having grant money available to help fund local implementation efforts to improve water quality)<sup>29</sup> to nervousness, and finally to down right explosive emotion during the public meeting which represented the culmination of attempting to complete the TMDL. It was like the world blew up after that public meeting. We had the local legislator calling the Governor's office. We had the lower reach landowners accusing the Forest Service of not being willing to embrace enough responsibility for sedimentation. We had the Forest Service concerned that we were not being tough enough with private land owners lower in the drainage.

As a manager, this incident gave me pause. Our watershed coordinator had worked so long and so hard with these stakeholders and it blew up in our face at the end. If every watershed group does this, DEQ just simply will not make the 2007 deadline.<sup>30</sup> Remember, DEQ still had 845 more TMDLs to complete after working with the Musselshell watershed group.

But this gives you an appreciation for what the DEQ staff confronts in trying to get a TMDL mailed in to EPA for approval. Sometimes there is

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28. 33 U.S.C. §§ 1313(a)(3)(C), 1313(b).

29. *Id.* §§ 1329, 1381.

30. *Friends of the Wild Swan*, 130 F. Supp. 2d at 1210; *See also* MONT. CODE ANN. § 75-5-703.

not a lot of immediate, positive reinforcement for all of the hard work that goes into these plans. And although we are taking too long doing each individual plan, our hope is that the new subwatershed approach is going to make this effort more expeditious and successful. The TMDL program is the only tool at DEQ's disposal which addresses water quality in a holistic fashion. Therefore, even though the process can be arduous, DEQ will continue to do its best to work within the confines of TMDL program to restore water quality throughout the State.