

**ADDENDA/ERRATA TO  
TOTAL MAXIMUM DAILY LOAD ASSESSMENT  
SAN MIGUEL RIVER  
SEGMENTS COGUSM03a, COGUSM06a, COGUSM06b  
Cadmium**

**SAN MIGUEL COUNTY, COLORADO  
Original Submittal August 2008  
Approved September 2008**

**Addenda June 2010**

TMDL SUMMARY

Waterbody Name/Segment Number	<p>COGUSM03a Mainstem of San Miguel River from the confluence of Bridal Veil and Ingram Creeks to a point immediately above the confluence of Marshall Creek</p> <p>COGUSM06a Mainstem of Ingram Creek including all tributaries, lakes, reservoirs, and wetlands from source to confluence with San Miguel River</p> <p>COGUSM06b Mainstem of Marshall Creek including all tributaries, lakes, reservoirs, and wetlands from source to confluence with San Miguel River</p>																		
Pollutant/Condition Addressed	Cd (dissolved): COGUSM03a, COGUSM06a, COGUSM06b																		
Affected Portion of Segments	All																		
Use Classifications/Designations	<p><u>COGUSM03a/</u> Agriculture Aquatic Life Cold 1 Recreation E</p>	<p><u>COGUSM06a/ COGUSM06b</u> Agriculture Aquatic Life Cold 2 Recreation E</p>																	
Waterbody Designation	Reviewable																		
Water Quality Targets (dissolved metal fraction)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Segment</th> <th style="text-align: left;">Metal</th> <th style="text-align: left;">Chronic</th> <th style="text-align: left;">Acute</th> </tr> </thead> <tbody> <tr> <td>COGUSM03a</td> <td>Cd</td> <td> <math>1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> <td> <math>1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> </tr> <tr> <td>COGUSM06a</td> <td>Cd</td> <td> <math>1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> <td> <math>1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> </tr> <tr> <td>COGUSM06b</td> <td>Cd</td> <td> <math>1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> <td> <math>1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}</math> </td> </tr> </tbody> </table>	Segment	Metal	Chronic	Acute	COGUSM03a	Cd	$1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}$	$1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}$	COGUSM06a	Cd	$1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}$	$1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}$	COGUSM06b	Cd	$1.101672 \cdot \frac{e^{(0.7998[\ln(\text{hardness})]-4.4451)}}{[\ln(\text{hardness})]^* (0.041838)]^*}$	$1.136672 \cdot \frac{e^{0.9151[\ln(\text{hardness})]-3.1485}}{[\ln(\text{hardness})]^* (0.041838)]^*}$		
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TMDL Goal	Attainment of water quality standards																		

## X. Public Involvement

A San Miguel TMDL report was made available for public review and comment during a 30 day public notice period in April 2008. For the April 2008 public notice period, TMDLs for dissolved zinc (COGUSM03a, COGUSM03b, COGUSM06a and COGUSM06b) and dissolved cadmium (COGUSM03b) were noticed in the Colorado Water Quality Information Bulletin. However, TMDL's for dissolved cadmium for COGUSM03a, COGUSM06a, and COGUSM06b were not included at that time because the segments had not been included on the Colorado 303(d) List for cadmium. Cadmium TMDLs were developed and added to the report after the public notice period in response to comments received from EPA. The TMDL's for dissolved cadmium were included in the final TMDL report to EPA, but were not submitted for approval because they had not been to public notice.

The Division made the report and addenda available for review and comment during a 30 day public notice period in April 2010. The public notice period was specifically for comment of the dissolved cadmium TMDLs for COGUSM03a, COGUSM06a and COGUSM06b. The report includes approved TMDLs for dissolved zinc for COGUSM03a, COGUSM03b, COGUSM06a and COGUSM06b, and dissolved cadmium for COGUSM03b. No comments were received during the public notice period.

Tables for the dissolved cadmium TMDLs found in the report are provided below. The tables in this addendum have been modified, at the request of EPA, to include columns showing the total TMDL Load and the TMDL Load with 10% MOS. In late 2009, two additional data points for cadmium became available from Idarado. Table 11 below shows the original TMDL from the 2008 report on the first line, while the second line shows the TMDL with the additional data.

Table 13 in the original report repeated the TMDL from Table 11. Table 13 in this addendum correctly shows the TMDL for COGUSM06b.

For detailed information regarding the development of the cadmium TMDLs please refer to text in the TMDL Report.

Table 7. Annual Cd TMDL and Load Reduction (includes 10% MOS) Segment: COGUSM03a San Miguel River above Marshall Creek (SM-3) (n= 12)									
	Cd-D	Cd-D	Median Flow	Cd-D	TMDL WLA	MOS	TMDL WLA w/10% MOS	Reduction	%
Hardness	TVS ug/L	Observed ug/L	cfs	Observed, lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	Reduction
104	0.44	1.14	4.4	0.03	0.010	0.001	0.009	0.018	65

Table 11. Annual Cd TMDL and Load Reduction (includes 10% MOS) Segment: COGUSM06a Ingram Creek above the confluence with Bridal Veil Creek (n=1)									
Hardness	Cd-D	Cd-D	Median Flow	Cd-D	TMDL WLA	MOS	TMDL WLA w/10% MOS	Reduction	%
	TVS ug/L	Observed ug/L	cfs	Observed, lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	Reduction
120	0.49	5.4 (n=1)	1.2	0.034	0.003	0.0003	0.0028	0.031	92
120	0.49	3.99 (n=3)	1.2	0.025	0.003	0.0003	0.0028	0.022	89

Table 13. Annual Cd TMDL and Load Reduction (includes 10% MOS)									
Segment: COGUSM06b									
Mainstem of Marshall Creek above San Miguel River, including all tributaries (n=6)									
Hardness	Cd-D	Cd-D	Median Flow	Cd-D	TMDL WLA	MOS	TMDL WLA w/10% MOS	Reduction	%
	TVS ug/L	Observed ug/L	cfs	Observed, lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	Reduction
88	0.38	9.35	3.2	0.16	0.007	0.001	0.006	0.154	96