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January 15, 2009

Mr. Gerald Thibeault
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501

Re: Comments on the Scope of the Environmental Analysis for a Proposed Amendment to the Water Quality Control Plan for the Santa Ana River Basin to Incorporate a Mercury TMDL for Big Bear Lake

Dear Mr. Thibeault:

Mitsubishi Cement Corporation appreciates this opportunity to comment on the scope of the environmental analysis for a proposed amendment to the Water Quality Control Plan for the Santa Ana River Basin. The proposed amendment would add a Mercury TMDL for Big Bear Lake (the "BBL TMDL") to the Basin Plan. Mitsubishi supports the efforts of the Santa Ana Regional Water Quality Control Board to protect the environment and improve the water quality of the region. To that end, we note that in considering the BBL TMDL, the Board needs the benefit of sound science and thorough environmental analysis.

Documents prepared to date create the impression that emissions from Mitsubishi's Cushenbury cement plant may be contributing to mercury deposition to Big Bear Lake. But this does not reflect even the most rudimentary scientific considerations, such as which direction the wind blows. Mitsubishi Cement's Cushenbury plant is located in Lucerne Valley, downwind of the Big Bear Lake watershed, and therefore is not a contributing source. In preparing the environmental document under CEQA, the Board has an opportunity – and an obligation – to remedy the situation and improve the quality of scientific information upon which the proposed TMDL is based, and the evaluation of the adverse or beneficial environmental impacts that may flow from adoption of the BBL TMDL. We are confident that a source identification effort based on sound science will eliminate the Cushenbury plant from consideration as a contributing source.

In considering the BBL TMDL, the California Environmental Quality Act requires that the Board have before it the "information which enables [it] to make a decision which intelligently takes account of environmental consequences." Pursuant to CEQA Guidelines section 15151, this information must be presented in the EIR. The

environmental documents evaluating the environmental effects of the BBL TMDL must be based on the scientific information that reflects "a good faith effort at full disclosure."

Similarly, the findings and conclusions of the environmental analysis and documents must be based on substantial evidence. The CEQA Guidelines define substantial evidence as "enough relevant information and reasonable inferences from th[e] information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (CEQA Guidelines section 15384(a).) Such evidence includes "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." It does not include "[a]rgument, speculation, unsubstantiated opinion or narrative, [or] evidence which is clearly erroneous or inaccurate . . ."

Moreover, the environmental analysis must utilize sound technical and empirical scientific data and tools. As noted in CEQA Guidelines section 15147, the environmental documents supporting the BBL TMDL must include "summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public."

Mitsubishi's technical consultant has reviewed the Big Bear Lake Total Maximum Daily Load Technical Support Document dated October 2008. Judging from this review and review of other documents available on the Board's website, the requisite level of science and detail has not yet been developed with respect to the contribution from atmospheric deposition. (While additional studies may be underway or planned for the EIR, we do not have any information on such efforts.) Below are specific technical comments that will contribute to improving the quality and completeness of the environmental review of the BBL TMDL. Many of the comments specifically address the Technical Support Document; however, they also reflect concerns about the breadth of the analysis of the BBL TMDL forthcoming in the EIR.

1. **Removal of Downwind Sources From Preliminary Inventory.**

The EIR analysis must include a relevant emissions inventory. This will require reevaluation of the emission inventory presented in the Technical Support Document to account for the predominant wind direction.

Chapter 4 of the Technical Support Document discusses what it calls "significant potential near-field emissions sources of airborne mercury." These potential sources are shown on Figure 6 and listed on Table 8. A review of these indicates that many of are downwind of Big Bear Lake and hence are likely to have little or no impact on the lake. Mitsubishi Cement's Cushenbury plant is one of these downwind sources. An evaluation of the predominant wind patterns shows that the predominant wind direction at Mitsubishi's plant is from west to east. (See attached wind rose from the Mojave Desert

Air Quality Management District.) In addition, in several cases there are topographical features (mountain ranges) that will determine wind flow patterns.

The EIR should not rely on the list of potential sources in Table 8 of the TSD. Rather, the EIR should include a new table showing potential sources upwind of Big Bear Lake, and analysis of the environmental effects of the proposed TMDL should focus on these sources.

2. Emission Inventory Correction and Completion.

The EIR should include a more accurate and complete emission inventory than that contained in Chapter 4 of the Technical Support Document. The inventory should be corrected, completed, and verified.

If a revised version of Table 8 were generated by removing downwind sources (discussed above), it is likely that the quantity of mercury emissions from the remaining sources would be relatively small and would not account for the estimated mercury discharged into the BBL watershed. This makes sense for two reasons. First, it is generally understood that there is a global contribution to atmospheric deposition of mercury, and this is not accounted for in Table 8. Second, Table 8 is incomplete even as to near-field sources because it lists only sources required to report through the Toxic Release Inventory (TRI) program. Only a select group of sources have to report under the TRI program. As a result, Table 8 omits mobile sources of mercury emissions, area sources, and many stationary sources of mercury emissions that are below the TRI applicability thresholds. A review of the literature indicates that crude oil contains up to 10 ppbw mercury (quoting a San Francisco Bay TMDL document, Reference 1) and that diesel combustion, including mobile sources, will be an important source of mercury (Reference 2). Given that the Los Angeles air basin is upwind of Big Bear Lake and contains a large quantity of diesel truck traffic (Reference 3), the contribution from these sources is likely substantial and needs to be quantified. In addition, there is also likely a contribution from marine vessels. This includes ships in the ports of Los Angeles and Long Beach, as well as offshore operations. The bunker fuel used offshore is not subject to ARB diesel regulations, and may have a higher mercury content.

It also should be noted that the emissions from facilities that do submit TRI reports may not be accurately reported. There are ongoing developments in quantification of mercury emissions.

In terms of tracking historical changes in the likely mercury emission sources, recent changes in regulations adopted by the California Air Resources Board require reductions in the sulfur content of diesel fuel (Reference 4), and these changes are likely to have reduced mercury emissions as well. Therefore, progress has likely already been made in reducing the mercury contribution from diesel trucks, even though this reduction

may not yet be reflected in the lake mercury levels due to the long lead time for decrease in mercury levels after removal of the source (Reference 5). The BBL TMDL analysis should include this information.

3. **Ambient Air Mercury Concentration Monitoring To Evaluate Local Contribution.**

The analysis should include ambient air mercury concentration monitoring to evaluate local contribution. Even if atmospheric deposition plays a key role in mercury loading of Big Bear Lake, it is not clear that this deposition is related to local mercury sources, given the potential for global contribution. To better establish the contribution from atmospheric deposition and how much of this contribution is local, it will be necessary for the Board to perform ambient mercury concentration and meteorological data monitoring in the Big Bear Lake area. A program similar to the "Tekran data" program performed for the Arizona mercury TMDL (Reference 6) is needed. If the ambient monitoring program fails to show a relationship to local sources, then it is likely that global atmospheric deposition is the dominant source.

4. **Modeling To Evaluate Global Contribution And Deposition.**

The EIR should include modeling analyses to evaluate global contribution. In addition to the improvements to the modeling analyses that are proposed above, the following are suggestions regarding Community Multiscale Air Quality ("CMAQ") modeling to allow for better understanding the global contribution to atmospheric deposition:

- Documentation should be provided for the CMAQ boundary condition data used for grid sections in California. These assumed boundary conditions could have a major impact on model results (Reference 7).

- A CMAQ run should be performed in which the local mercury sources in California are "zeroed out" to establish the background deposition rates without these sources as prescribed in the model. (This was done for the electric generating unit ("EGU") mercury emissions in the Clean Air Mercury Rule ("CAMR") analysis in March 2005, Reference 8).

- The majority of the deposition to Big Bear Lake is from dry deposition. The CMAQ model validation was based on Midwest and East Coast sites, where wet deposition predominates. It is not clear if the CMAQ model is valid for application to West Coast sites. The limitations of the CMAQ modeling effort should be discussed.

- In addition to the questions associated with the accuracy and completeness of the emissions inventory provided in Table 8 of the Technical Support Document, it is not clear if the Table 8 inventory was used in the CMAQ wet deposition model results that were reported in Section 4.3 of the Technical Support Document (see Figure 9, for example). The use of an updated, spatially correct inventory in the CMAQ modeling is necessary for this modeling to provide representative results for use in calculating mercury loadings.

5. **Quantification of Wet And Dry Deposition.**

Quantification of wet and dry deposition can be improved based on the experience in the Arizona TMDL. Below is a list of areas in which the modeling from the Technical Support Document must be improved in the EIR to meet CEQA's science standards.

- The analysis does not include a detailed comparison of calculated and measured wet deposition rates, as was done for the Arizona TMDL.

- The analysis does not include a calculated dry deposition rate based on new scientific theory, in addition to the modeled dry deposition rate, as done for the Arizona TMDL.

- The analysis does not include a REMSAD analysis to provide a qualitative prediction of contributions from background and global sources relative to local sources, as was done for the Arizona TMDL.

Again, these analyses were performed for the Arizona TMDL. They are clearly available scientific tools and are necessary to satisfy CEQA's requirements for disclosure and scientifically sound analysis.

Conclusion

Mitsubishi's overarching concern is that the Board ensure the environmental analysis of the BBL TMDL is undertaken with the requisite rigorous scientific analysis. Again, Mitsubishi thanks the Board for this opportunity to submit comments about the scope of environmental analysis for the BBL TMDL. We look forward to seeing the responses to these comments in the Draft EIR, and to working with the Board throughout

the course of the consideration of the BBL TMDL. We request that we be added to the mailing list for the Draft EIR, as well as all other notices and materials relating to the BBL TMDL.

Sincerely,

H.O. Biggs
Vice President

Attachment

LEGAL02/31114286v1

References for Comment Letter, January 15, 2009

1. http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/sfbaymercurytmdl.shtml

2. http://www.aqmd.gov/prdas/pdf/combem2001.pdf

3. http://www.aqmd.gov/CEQA/documents/2001/monaqmd/Ladwp/Final_EIR/Chapter_4.doc

4. http://www.arb.ca.gov/fuels/diesel/diesel.htm

5. EPA. 1997. Mercury Study Report to Congress, Vol.3, Fate and Transport of Mercury in the Environment. EPA-452-R/97-005. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards and Office of Research and Development, Washington, DC.

6. Tetra Tech. 2008a. Arizona Mercury Air Deposition Data Analysis Memorandum to Karen Irwin, USEPA Region IX and Jason Sutter, Arizona Department of Environmental Quality, September 2008. Terra Tech, Inc., Research Triangle Park, NC.

7. EPA, 2005a. Updated CMAQ Model Performance Evaluation for the 2001 Annual Simulation, Office of Air Quality Planning and Standard, Research Triangle Park, NC.

8. EPA. 2005b. Technical Support Document for the Final Clean Air Mercury Rule – Air Quality Modeling. US Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC. March 2005. http://www.epa.gov/ttn/atw/utility/agm_oar-2002-0056-6130.pdf

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

WIND ROSE DATA FROM 1/1/02 to 12/31/02 **Lucerne Valley Ca.**

From Midnight to Midnight pst

1 to 4 MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Number of hours :	216	173	189	156	118	105	151	324	663	397	282	248	205	262	321	266
Percent :	2.5%	2.0%	2.2%	1.8%	1.3%	1.2%	1.7%	3.7%	7.6%	4.5%	3.2%	2.8%	2.3%	3.0%	3.7%	3.0%

5 to 7 MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Number of hours :	28	10	38	154	108	101	58	330	262	83	199	299	256	267	119	71
Percent :	0.3%	0.1%	0.4%	1.8%	1.2%	1.2%	0.7%	3.8%	3.0%	0.9%	2.3%	3.4%	2.9%	3.1%	1.4%	0.8%

8 to 43 MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Number of hours :	10	1	17	156	76	23	6	13	13	89	178	239	457	716	240	16
Percent :	0.1%	0.0%	0.2%	1.8%	0.9%	0.3%	0.1%	0.1%	0.1%	0.8%	2.0%	2.7%	5.2%	8.2%	2.7%	0.2%

TOTAL	2.9%	2.1%	2.8%	5.3%	3.5%	2.6%	2.5%	7.6%	10.7%	6.3%	7.5%	9.0%	10.5%	14.2%	7.8%	4.0%

Percent of time (1 to 4 mph)=	46.6%
Percent of time (5 to 7 mph)=	27.2%
Percent of time (8 to 43 mph)=	25.5%
Percent of total time (Less than 1 mph)=	0.7%
Total =	100%