

November 19, 1991

SUBJECT: ASARCO E. Helena Lead State Implementation Plan (SIP)

FROM: Joseph A. Tikvart, Chief
Source Receptor Analysis Branch (MD-14)

TO: Douglas M. Skie, Chief
Air Programs Branch, Region VIII (8AT-AP)

This memorandum is a follow-up to the November 5, 1991 conference call with your Region, the State of Montana and ASARCO and their consultants. Attached are some specific comments on the September 14, 1991 "Reconciliation and Verification of Industrial Source Complex Short Term (ISCST) Dispersion Model Lead apportionments for East Helena, Montana," as well as some comments on related documents, correspondence and future modeling plans. As indicated in the conference call, we do not believe that any of the comments significantly affect the "bottom line" of the reconciliation. Most are provided to ensure that there are no misconceptions on fine points and to document our understanding with respect to future modeling. We are quite satisfied with the outcome of the modeling/reconciliation and with the plans for further verification and SIP modeling.

It has been a long and arduous path to get to this point in the SIP development. While there may be issues ahead relating to emission limitations, at least the modeling part of the effort appears to be on a favorable track. Your staff and the State of Montana were very diligent in pursuing the many issues that were identified in our meeting in October 1990.

Our understanding is that you will combine the attached comments with your own and others and forward to the State in early December. We also understand that ASARCO is preparing protocols for their upcoming verification of the reconciled dispersion model and for determining the design value and that you will be sending copies of those documents for review.

If your staff has any questions on our specific comments, they may contact either Dean Wilson or Tom Coulter, as appropriate.

Attachment

cc: G. Blais
T. Coulter
M. Mohr
L. Ostrand
L. Svoboda
D. Wilson

Specific Comments on Documents, Correspondence, and
Future Plans for ASARCO E. Helena Lead SIP Modeling

EPA Model Clearinghouse
November 12, 1991

October 25, 1991 Letter from ASARCO to State of Montana, with Attachments

1. While we agree that the various correspondence attached to the letter does address most of the concerns on the March 11, 1991 protocol, it still would be useful for future reference to actually correct the protocol. This certainly seems like a reasonable request of ASARCO since they need to write an additional protocol on the verification on the 1991 air quality data and the SIP modeling; this protocol could and should also be included in the overall modeling protocol for the plant.
2. While we are willing to agree to the use of only a single level of wind for the complex terrain modeling, this is only because it appears to be conservative and that it is not generally believed that the complex terrain concentrations are of significant concern.
3. In the same vein as the last comment, ordinarily we would ask for more checkout of the code on the intermediate terrain algorithm, but this seems unnecessary in this case because ASARCO has shown that even with the ISCLT and Valley estimates added together there is not an expectation of an ambient problem in complex terrain.

Reconciliation and Verification of ISCST Dispersion Model Lead Apportionments for East Helena, Montana

1. It is our understanding that use of the "flagpole" receptors, as mentioned on page 4-13, are limited to the model reconciliation process. For purposes of determining the design concentration and for SIP demonstration modeling, standard receptors with full ground reflection will be used.
2. While we have no problem with the use of the +20% performance criterion mentioned on pages 3-13 and 3-14, such a criterion should not be referenced as EPA guidance. It was only the result of some limited performance evaluations that EPA conducted.
3. In Table 5.1 on page 5-2, ASARCO should indicate what values are paired together in the last column (R2, "unpaired in time").

Verification and Future Modeling

1. It is our understanding that the verification will look at 20 days from the first two quarters on 1991, 10 days from each quarter. These days will essentially be the high observed days. The reconciled dispersion model will be run for each of the 20 days and the results compared to receptor model results for the same 20 days, using the same statistics and performance criteria that were used in the reconciliation (except for quarterly averages).
2. It is our understanding that the design concentration will be determined by running the model with maximum allowable emissions, Good Engineering Practice (GEP) stack height, one

year of meteorological data, estimated emissions from the zinc fuming process (which is not now operating), average quarterly gas temperature for the dross building emissions, and a field of ground level receptors as outlined in the protocol.

3. It is our understanding that ASARCO will develop a written protocol for performing the verification. As mentioned above we would encourage ASARCO to include that protocol in the overall modeling protocol. We would also suggest that the above procedure for determining the design concentration be included in the protocol as well as the procedure to be used for the SIP demonstration.
4. The Model Clearinghouse, in its review of receptor modeling related material, was left with a few questions:
 - a) Explanation was needed on how the "TSP SCE (%)" values in Tables 3.3.6 and 3.3.8 of the April 1991 Final Report were derived. This matter was put to the State of Montana in a letter transmitted by Region VIII in August 1991. The October 10, 1991 transmittal by ASARCO (incorporating Keystone/NEA's 10/3/91 responses) to the State, especially item 7, did not satisfactorily address this concern.
 - b) Clarification was needed on the derivation of certain values presented in the COMP1 and COMP2 tables in Appendix F of the September 1991 Reconciliation document (Vol. II).
 - c) Some discussion was needed on the scheme used to group sources for apportionment comparison displayed in, e.g., Table 4.1 of Vol. I of the September 1991 Reconciliation document.

The Clearinghouse, together with Region VIII, spoke to Keystone/NEA (Brian Patterson) on November 7, 1991 to discuss these concerns. While Keystone/NEA was able to explain these matters to our ultimate satisfaction over the phone, it is (was) EPA's viewpoint that better explanations could and should be provided in such reports if they are to be amenable to independent review. For example, we take issue with the response to Comment 8 (10/10/91 transmittal to the State by ASARCO) that "[m]ost technical reports do not provide complete details on the numerical methods used to calculate values in tables." It is our expectation that data presentations in future reports of this type will be more thoroughly explained/documented.