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TO: Preconstruction Engineers
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FROM: A. J. Siccardi

SUBJECT: Technical Memorandum #18
Bridge Replacement Projects

Recently a series of bridge structure paint assessments were made in one Region. The assessment involved eight (8) structures. The objectives of the assessment were to determine the proper method of disposal (solid or hazardous waste) for construction debris and evaluate potential environmental and worker health concerns associated with the construction project. Certainly, these are commendable objectives.

The results of the effort were predictable. Specifically, of the eleven (11) samples apparently tested, all were determined to be hazardous waste. Nationwide, steel bridges generally, perhaps as many as 90% or more, are coated with lead-based paint materials. Colorado is no exception, though as with most other states, the newer structures will no longer be coated with such materials.

This brings me to my point. The current specification for bridge replacement projects presumes that lead-based paint materials exist. This was done in effort to eliminate the need for pretesting, which in my view, has little value. First, because the paint is likely to be hazardous and secondly, because a TCLP taken at this time will not necessarily be representative of the debris dependent upon how diluted the debris becomes during the removal process.

Next, we should consider that purely for a bridge replacement, where painted steel girders, cross-bracing diaphragms, and/or bearings may be involved, it is important to realize that any

removal methods by the contractor are not likely to dislodge large amounts of debris. Whatever debris is accumulated, which in my view, will be in buckets rather than drums may have to be disposed of as a hazardous waste or otherwise rendered non-hazardous. Depending upon the volume, it is my judgement that encapsulating the debris in concrete material would do the latter. Nonetheless, if the debris could not be so rendered, and if as I have been told, a waste receptor requires a TCLP before accepting the waste, the latest specification modification will require such a TCLP, however, after the removal of the steel and after the debris has been collected.

Worker safety during the removal process, in my view, is the most important issue. The specification requires conformance with 29CFR1926. It is important to realize that the threshold limits are expressed as 8 hour averages. The likelihood of exposure to the threshold limits over that period of time for bridge replacement projects has a low probability just as the volume of debris will likely be small. Nonetheless, worker protection is paramount, but respirator will likely suffice for many projects. This should be a responsibility of the contractor and the requirements are fairly well described in the CFR.

Finally, contractors, based on my discussion is with them, are finding ways to retain the steel for their own purposes. One contractor brings the steel to a Denver shop where the paint is removed in a controlled environment. This is done because, at best, the steel has value for future shoring material; in the worse case, as pure salvage materials. In either event there still remains the relatively small amount of site debris that must be handled. It is clearly in the contractor’s interest to minimize the volume of debris.

This memo is intended for background as to the reasons for the current specification. These comments apply <u>only</u> to bridge replacement projects where girder are being removed. They do not apply where paint is being removed and girders are being prepared for a repainting process; i.e., they do not apply exclusively.