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November 14, 1994

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TO: Moses Jaraysi
PUREX Team Leader

FROM: Alex Stone
Chemist *AS*

RE: PUREX Data Quality Objective Document Review

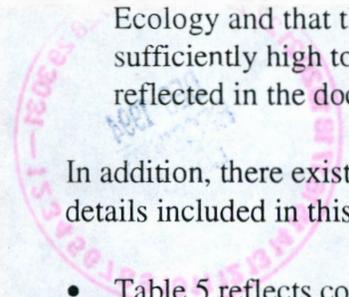


I have reviewed the Data Quality Objectives for PUREX Deactivation Flushing Draft Document (WHC-SD-EN-TI-283 Draft A) and have found it deficient in a number of areas which need to be addressed. A number of agreements which were reached during the Data Quality Objective (DQO) meetings are not addressed within this document. Some specific examples are:

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- It was agreed that the analyses which would be done at the end of each flush would be accomplished using methods as determined in SW-846. Although the compounds listed in Table 5 would comprise those of primary interest, it was agreed that the full target list of analytes possible by these methods would be done and that the values for all compounds would be presented to Ecology. For example, it was agreed that metals would be done by Method 6010 and that in addition to the 5 compounds listed under ICP Metals in Table 5, analytical values for the additional 20 compounds would also be provided. The decision was made after it was pointed out that there would be no additional cost involved in obtaining the full target list as compared to only a few species and the results would provide additional information on a wider range of compounds. A similar decision was reached for other analyses such as volatile organics. These points are not addressed in the current document.
- It was agreed that before the final sample was sent for analysis, a procedure would be established to determine which analytes would be appropriate for this particular series of vessels. Once the Department of Energy (DOE) reached a recommendation, it would be presented to Ecology for concurrence along with an explanation/presentation of the reasons for omitting any component found in Table 5. If Ecology did not agree with the recommendation from DOE, all species in Table 5 would be analyzed. This agreement is not reflected in the document.
- It was agreed during the DQO that radiological data for the final sample would be provided to Ecology. It was DOE's position that the State of Washington does not have legal jurisdiction over radiological species. Ecology disagreed with this position and affirmed that it does have the right to information on radiological species

especially when it concerns mixed waste. It was decided, however, rather than to pursue this point in detail, that DOE would provide the radiological information to Ecology and that the matter would only be pursued if the concentrations were sufficiently high to cause a problem in Ecology's opinion. This agreement is not reflected in the document.



In addition, there exist a number of areas which insufficient information is provided for the details included in this reports. Examples are as follows:

- Table 5 reflects considerable information for which no explanation is given. For example, the abbreviations HYAA/GFAA under analytical methods are not explained nor is any information given on what exact method is involved in this analysis and if Ecology has agreed upon the suggested method. Ecology's position has always been that EPA approved methods must be used and if deviations are made from EPA methods, the justification for variation must be provided for Ecology's review. This matter was not discussed in detail during the DQO and Ecology cannot concur with the information in Table 5 without further explanation and justification.
- Table 5 also includes some information on accuracy and precision requirements which are not explained. I do not remember discussing this issue and no information has been provided to determine how these precision and accuracy values will be determined. Without additional explanation and justification, Ecology cannot agree with the information provided on these issues.
- Table 3 indicates that for the fourth question 'What is the activity level within the loop?' that the 'Basis for Variable' was 'process control.' This issue was not discussed in detail to my recollection. I will review the information in my files on the PUREX DQO and determine if some agreement was reached of which I have forgotten. However, it is my recommendation that Ecology insist that the radiological level for the final sample be sufficiently low that samples can be sent to offsite laboratories for analysis. It has been my recommendation throughout the PUREX DQO that sufficient information be obtained from the final flush samples which will provide a comprehensive indication of the chemical species remaining within PUREX after deactivation has been implemented. This is particularly important as once deactivation is complete, DOE has indicated that pumps will be removed, lines will be blanked, etc. which will make future sampling of this facility virtually impossible. Therefore it is vital that what all appropriate information be obtained now. I have strongly recommended that analyses for additional species such as anions be included in this deactivation sampling. Since DOE has been unwilling to provide this additional information, it is important that Ecology take a duplicate sample of every flush loop and that this sample be sent to an offsite laboratory for analysis. A contract has been established with one of Ecology's contract laboratories to analyze PUREX samples for the appropriate species. Given the potential radioactivity of the flush solution from PUREX and the limited sources Ecology has for radioactive sample analysis, Ecology should insist that sufficient flushing be done to allow Ecology to analyze for the

components it feels are important. This issue was not discussed in detail during the DQO and Ecology should not agree to any decision made on this matter without its concurrence.

- In Table 1, it is indicated that for the sufficiency of process knowledge, an assumption was made that 'Process knowledge and records associated with the PUREX process are considered reliable.' I do not recollect this issued being agreed upon and it should not be reflected in this document that Ecology agrees with this point. I do not recollect any proof being provided concerning the quality of process knowledge and, given the problems which have occurred in the past when process knowledge has been used to make major decisions, I do not recommend that this decision be agreed to without additional supporting justification.
- On the first page, third paragraph, the PUREX/UO3 Deactivation Project Management Plan was referenced and the statement was made that it was submitted 'in February 1994 for review and comment.' I reviewed this document at that time and presented a number of issues which I felt need to be addressed. I have not seen an updated version of this document nor have I seen any indication that the comments which were made have been evaluated and/or addressed. It was also my understanding that this document was to be used to plan the deactivation process. Therefore, I recommend that as deactivation has begun without properly updating and addressing Ecology's concerns, all reference to this document be removed from the DQO document. Evaluation of this document was not a part of the DQO process and Ecology should not provide implicit agreement with a document which has not been updated to address its concerns.

Overall, I find the DQO document seriously flawed and the issues mentioned above need to be addressed prior to any agreement by Ecology. Again let me state that PUREX is the first of the Hanford Canyon Facilities to undergo this deactivation process and that it is imperative that a technically sound, justifiable basis be provided for all decisions made. It is my understanding, the deactivation process does not exist within any of the State and Federal Regulations such as RCRA, CERCLA, MTCA, etc. Therefore since this process is an attempt to status the facility before being left for an extended period of time until Decontamination and Deactivation activities can begin, it is imperative that a detailed evaluation of the chemical species within the facility be obtained.

cc: Nancy Uziemblo
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Administrative Record

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