

Comments on 903 Pad, Mound and East Trenches Areas
Draft Proposed Interim Measure/Interim Remedial Action Plan
and Decision Document

Section 2.1.2.1. During public comment concerning the 881 IM/IRA, DOE agreed to reevaluate the boundaries of SWMU 155.

Section 2.1.2.3. SWMU number 216.2 and 216.3 final remedial actions are to be addressed within OU 4. Is this IM/IRA going to implement an interim measure to address these units?

Section 2.1.3. Thoro Products is still located within the Rocky Flats Industrial Park.

Section 2.2.3.2. Prior to flowing through the Valley Fill Alluvium, materials disposed of in the Rocky Flats Alluvium would have to flow through the Colluvium. The groundwater flow velocities and distance traveled per year calculations are not presented for this groundwater flow media. How much Rocky Flats Alluvium would have to be traveled prior to reaching the Colluvium?

Section 2.2.6. Whether the IM/IRA will affect the wetlands in the area is not necessarily related to whether the proposed action is located in the delineated wetlands.

Section 2.3.1. The alluvial and bedrock wells, 55-86 and 54-86 respectively, are not the only current wells from which background data can be extracted. The Background Geochemical Characterization Report was submitted December 15, 1989, and should be used to supplement characterization information. The results of the Background Study, as presented in the report above, should also be used to preliminarily determine which constituents in the groundwater are contaminants. The final results of this study should be the primary basis for determining whether a constituent is a contaminant. The Background Study should be conservatively used to supplement the preliminary screening of the data to determine which constituents in the groundwater are contaminants. If inaccurate background information is utilized to preliminarily screen the constituents, actual contaminants may be erroneously screened from further comparison to ARARs, background or other cleanup criteria.

The alluvial wells presented for the 903 pad area do not characterize the sources or any near source plumes migrating from these sources. For the 903 Pad Area, 3 of the 7 wells "representative" of this area are at least routinely dry. Three of the remaining 4 wells are at least 300 feet from any source of organic contamination. The only other

remaining well may be at least somewhat sidegradient to the main source of organic contamination, SWMU 112. It is difficult to determine the nature or extent of any plume migrating from these sites when the wells do not monitor the groundwater close to the sources. This makes it difficult to determine where to place an interceptor system or to determine the basis of design for the treatment system. The averages as compared to ARARs are also difficult to interpret when the wells may not monitor the severely affected groundwater emanating from these sources, may monitor groundwater from other sources, and may actually dilute the severity of the problem.

Table 2-5 presents negative saturated thickness numbers. Depth to water is greater than total depth for two of the wells. This must be explained and/or corrected.

Well 62-86 is listed as both an alluvial well and a bedrock well in Tables 2-7 and 2-8. It is graphically expressed as a bedrock well.

In general, many of the wells "representing" the three areas do not monitor groundwater which can be irrefutably determined to originate from the specified source areas.

Section 2.3.2. Prior to approval of the final RI/FS for OU 2, the sources contributing to the contamination at this OU must be characterized. The statements made concerning the presence of organics in the soils should be prefaced with information concerning the validity of the analytical results for the analysis of the soils and the representativeness of the samples taken. Acetone and methylene chloride were found throughout the soils, many without any associated blank concentrations. No soil samples were taken within sources. No soil samples were taken directly east of the 903 Pad. Composite soil samples dilute the actual concentration of particulate surficial radionuclide contamination and organic soil column contamination.

Section 2.3.4. Section 2.3.1.1. states that background levels are exceeded on average for dissolved gross alpha, strontium, plutonium, americium and total uranium within alluvial groundwater at the 903 Pad sites. Similar statements are made for all other alluvial and bedrock wells evaluated as part of the investigation. These statements are in direct contradiction of the statement made to substantiate that the surface seep radionuclide concentrations are a result of transport of surface soils.

Section 2.5. There is no immediate threat to the public health and environment posed by contaminants at OU 2. There is an

imminent threat to human health and the environment posed by contaminants at OU 2.

Section 3.2. The third schedule item should actually read "Draft Proposed IM/IRA Plan". The fourth schedule item should actually read "Proposed IM/IRA Plan Public Comments". Finalization of the plan should be complete by April 4, 1990. It seems the dates within the Section 3.2 timeframes do not coincide with the dates in the Attachment 2, Table 6 dates within the IAG.

Section 3.3.1. The preliminary screening of constituents using wells 55-86 and 54-86 as the "background wells" should presently be supplemented by the results of the Background Study. The results of the Background Study shall eventually supercede the information provided by wells 55-86 and 54-86 and shall eventually be the primary basis for this preliminary screening.

Within Table 3-1.1, 1,1 dichloroethane background is relevant and appropriate as this is a RCRA Appendix VIII constituent (ethylidene dichloride). Within Table 3-1.2, the RCRA Subpart F relevant and appropriate standard is exceeded for antimony. The CDH Agricultural applicable standard is exceeded for molybdenum and vanadium. The CDH Surface Water; Drinking Water applicable standard is exceeded for silver. Within Table 3-2.1, 1,1 Dichloroethane is a RCRA Appendix VIII constituent and RCRA Subpart F is relevant and appropriate.

Section 4.1. If the objective of the IM/IRA is to mitigate the downgradient contaminant migration of alluvial and bedrock groundwater and treat the collected groundwater, all alternatives considered do not address this objective. In order to be effectively compared against one another, all IM/IRA alternatives should provide a means to meet the same objective.

Given that the bedrock groundwater pathways may not present an immediate offsite threat to the public or the environment, should the bedrock groundwater be considered as the important media to be addressed through this IM/IRA? Although the present information indicates that in general the bedrock wells are impacted by VOCs to a greater degree than the alluvial wells, this may only be an artifact of inadequate characterization of the alluvial system. Alluvial groundwater may pose the most immediate threat to human health and the environment given the potential to migrate. Surficial soils may also present a more immediate offsite concern to human health and the environment as without an IM/IRA to address these soils, the contaminants are being dispersed offsite. OU 2 may require that both the

soils and the groundwater be addressed through interim actions.

Section 4.3. As presented within this proposal, it seems the selection of GAC is based on theory rather than the results of laboratory testing. What consideration was given to the possibility that the iron and manganese will foul the GAC. If the GAC becomes fouled/slimed, the carbon adsorption will not work, breakthrough will occur sooner and the GAC cannot be regenerated. UV/peroxide systems may be less likely to fail given the possibility of iron and/or manganese precipitation because mechanical systems can be designed to clean the precipitate from the system, allowing the UV light to penetrate the liquid.

The inconsistency of flow should not be considered as limiting the implementability of other treatment options, as flow can be regulated and steady through utilization of surge tanks. Treatment operating times can be varied to account for variable flow rates into the surge tanks. Surge tanks also allow for the consistent regulation of operating conditions for the UV/peroxide treatment system. Thus, continuous on-line dosage control would not be required.

Given the possibility that the GAC will become radioactive mixed waste, it is unlikely that the GAC can be regenerated. Presently, the lack of mixed waste disposal facilities should also be considered as adversely affecting the implementability of this alternative. The generation of more radioactive mixed waste during a period when there exists no final disposal site for this waste will exacerbate the storage problem at RFP.

The selection of GAC and ion exchange alone may not be compatible with a final remedy selected for the 903 Pad, Mound and East Trenches Operable Unit because of the likelihood of treating radionuclide contaminated groundwater and the inability to regenerate or dispose of the mixed wastes.

Section 4.3.1.1. Why are the carbon columns operated in a downflow mode? Will the column chambers be baffled to prevent short circuiting? In downflow systems the carbon can serve as both adsorption media and filtration media; however, adsorption is more efficient and the beds are less expensive to operate if filtration is not to be performed by the GAC beds. Upflow expanded beds are capable of handling water high in suspended solids which may be the case here as the iron and manganese may precipitate. Expanded beds allow the precipitates to move through the bed without clogging the pores. Upflow modes ensure that the influent resides within the column for the required period of time.

Section 4.3.2.1. The comparison of influent concentrations to ARARs has no bearing on the decision to operate the IM/IRA. The IM/IRA and/or final remedy must be operated until all groundwater being addressed within OU 2 is below ARAR. Composite mixtures resulting from interceptor systems are not compared to ARARs. Treatment effluent is compared to ARARs, but the decision as to whether treatment is still required for the groundwater being remediated is based on individual monitoring well analyses and the comparison of these analyses with ARARs.

Section 4.4.1.1. Well 35-86 has total VOC contamination greater than 0.5 ppm. This well should be included in the analyses presented in Table 4-1 and Figure 4-5.

Well 42-86 groundwater is above ARAR for both manganese and TDS, and therefore should be treated for inorganics. This well may also be above ARAR for gross alpha. The segregation of groundwater originating from well 42-86 for non-treatment of the TDS and manganese is inconsistent with the requirements of CERCLA to reduce the toxicity, mobility or volume of the contaminants through treatment. As such, to "blend" the groundwater which is above ARAR for manganese and TDS without treating it, is not consistent with the requirements of CERCLA. Also, as the low yield wells may eventually not be capable of providing a consistent flow, or any flow at all, there may be no water with which to blend the untreated high yield groundwater.

Alternative 1 of the Proposed IM/IRA involves collection of groundwater from existing wells. The use of these wells may require the redrilling, reconstruction and development as production wells. No discussion of how this will be accomplished or the feasibility of utilizing monitoring wells for pumping is presented. The use of monitoring wells as production wells may affect implementability and effectiveness of the alternative.

To locate the treatment facility within potentially affected areas of the OU may pose problems with respect to the final remedy. Burial of the pipeline along the course of the Central Avenue ditch may be problematic as this ditch has conveyed hazardous substances and/or wastes to the ponds. To avoid potentially affecting the contaminated alluvial groundwater system affected by the East Trenches Area, the pipeline should be extended to the rock-lined channel.

Section 4.4.1.2. The proposal must address the precautions necessary to prevent the resuspension of radionuclide contaminated dusts during the implementation of this IM/IRA.

Section 4.4.2.1. How could the expected combined yield of all three french drains be less than the expected yield of well 42-86 alone? The french drains will intercept the same alluvial water intercepted by well 42-86.

The effluent should be transported via buried pipeline the entire distance to the rock-lined channel.

Section 4.4.2.2. Conservative placement of the french drains may enhance the effectiveness of this alternative for the interception of alluvial groundwater. The french drain option could be the most effective interim measure to take, in that if properly placed, it would intercept all alluvial groundwater, thus minimizing offsite migration.

The implementability and effectiveness of all IM/IRAs addressing this OU must recognize the dangers associated with surficial radionuclide contamination and the potential to resuspend these particulates. Construction procedures may not be routine given the surficial radionuclide contamination. There are site conditions present which will affect the implementation of all IM/IRAs for this OU.

Section 4.4.3.1. Why would the expected yield of the well array system to be placed in the same locations as the french drain be higher than the expected yield of the french drain?

Section 4.4.3.2. In this section it is stated that it is uncertain how effective the well array will be. In the next section it is stated that the pumping of the well arrays is expected to be highly effective. The two sections contradict one another.

Section 6.0. The IM/IRA must be redesigned and reevaluated with respect to other alternatives as the segregation and non-treatment of well 42-86 for manganese and TDS is not consistent with CERCLA. Groundwater flow from well 42-86 is above ARAR and does require treatment.

The water must be stored long enough to verify that ARARs have been attained or a monitoring scheme must be implemented in conjunction with information derived from process testing to conservatively allow treated water to be discharged without prior analytical verification that ARARs have been achieved. The storage capacity of the equalization tank may have to be large enough to hold the water for as long as it takes to receive the analyses of the treated groundwater. The present capacity of 21,000 gallons will only hold a 30 gpm flowrate for approximately 12 hours. It is unlikely that the facility will be capable of receiving analytical results within 12 hours of taking the sample. The discharging of the treated groundwater must be

performed so as to minimize effects on surface water flow and control structures. Given the present public and regulatory pressure to effect zero discharge from the plant, the IM/IRA should consider alternatives to discharging to South Walnut Creek.

The treated groundwater should not be allowed to percolate and flow through the Central Avenue ditch as this ditch will be evaluated for threat of release through investigation of OU 5.

Section 7.1. The Proposed IM/IRA must specifically delineate options to mitigate the potential generation of radionuclide contaminated fugitive dust. It is unacceptable to defer this discussion to internal Job Safety Analysis procedures.

Section 7.5.1. What is the estimate of exposure to workers involved in the installation of the IM/IRA due to inhalation of fugitive dust?

Section 7.6. Clarify the statements concerning the relative hazards due to a major spill and an industrial fire.

Volume II - Appendix. In the section labeled 903 Pad Alluvial wells, for well 64-86, how can 8ppb tetrachloroethene be "present below detection limit"?

In the section labeled 903 Pad Bedrock wells, how can well 62-86 be both an alluvial well and a bedrock well? For well 14-87, how can 160 ppb carbon tetrachloride be "present below detection limit"? For well 01-71, how can 690 ppb carbon tetrachloride be "present below detection limits"?

Why is Sr 89,90 not reported for the dissolved radiochemistry results? References are made to "total radiochemistry", the total radiochemistry results should also be reported within this appendix.

Some sections within the appendix are titled "Groundwater ... Results for Regulated Units....". These units are not regulated units in the RCRA sense, please clarify.

In the section titled East Trenches Bedrock wells, for well 03-74, how can 11 ppb chloroform be "present below detection limits"?