

Mars Returned Sample Handling (MRSB) Project Implementation Planning and Technology Needs

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~~During the past year, a significant amount of progress has been made in A team has been established to planning for the , design and oversee the construction of the necessary facilities to safely analyze returned Mars samples safely. Because of the possibility that the samples might contain living microorganisms and the even more unlikely possibility that the samples could present a hazard to the Earth's biosphere, the samples cannot be released from must be kept under strict biological containment quarantine until they have been and thoroughly tested to prove that they are non-hazardous. At the same time, the samples must be kept under extremely clean conditions to avoid contamination with terrestrial life forms that might obscure evidence of Mars life (either extant or extinct). High-level biological containment under extremely clean conditions has never been done, and presents substantial scientific and technological problems challenges. Through a series of NASA-sponsored workshops, a Draft Test Protocol for Detecting Possible Biohazards in Martian Samples Returned to Earth has been prepared, and the MRSB project is currently involved in developing implementation plans to assess what is needed to carry out this draft protocol. We have The MRSB team has defined initial requirements for a Sample Receiving Facility, initiated work in risk assessment, and have begun operational scenario planning. The protocol includes the initial description and preparation of the returned samples, an assessment for the presence of life, and an assessment of the biohazard potential, if any, of the Mars materials. This poster summarizes progress towards these objectives and identifies potential areas of advancement. This poster summarizes the work accomplished to date.~~

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DWB comments:

1. I have changed the focus in the first sentence from the team to the work we have accomplished. Also, note split infinitive.
2. Second sentence: We cannot presume that the outcome of the hazard test will be negative. Also, we have agreed never to use the word "quarantine" because of negative connotations.
3. Second to last sentence (beginning with "The protocol..."): This sentence describes Rummel's work, not ours. I would prefer to replace it with something that describes more of what we have done. This would help avoid potential sensitivities, if there are any, with the PPO. How about something like: "We have defined initial requirements for a Sample Receiving Facility, initiated work in risk assessment, and have begun operational scenario planning."

JG's comments:

1. End of the 4th sentence: suggest using "challenges" rather than "problems" – it has a more positive connotation.

2. Say the MRSH Team, not “we.” Words like “we” are usually avoided in professional papers, and use of the third person is usually used.
3. re: DWB’s comment #3 – while I agree that MRSH work should be highlighted, it is appropriate to tie it to Rummel’s work, so it doesn’t appear that the two efforts are disjointed.
4. Abstract ends abruptly and does not lead the reader into the paper.