Radiolological HSA Draft Report Comments WRAMC Forest Glen Annex						
Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
1	4-3(34)	4.2.3	D. Burton-WRAMC	Rooms 7544 and 7545 are not waste storage rooms in the hospital but patient treatment rooms. Room 7A14 is a Nuclear Medicine waste room.	Cabrera	Concur. The affected text has been revised accordingly.
2	4-3 (34)	4.2.3	D. Burton-WRAMC	"Hot sinks" or "Wash sinks" are for equipment decon. Not waste disposal. All liquid waste "disposal" was performed by the HPO.	Cabrera	Concur. The affected text has been clarified.
3	5-13 (44)	5.3.2.1	D. Burton-WRAMC	The vial crusher has a HEPA filter only (no charcoal)	Cabrera	Concur. The reference to a charcoal filter has been removed.
4	5-13 (44)		D. Burton-WRAMC	The underground storage tanks were hold-up tanks to allow sampling of any water from floor drains or the pool prior to release.	Cabrera	Concur. The clarification has been made that the tanks were used for hold-up.
5	5-13 (44)	5.3.3	D. Burton-WRAMC	Building 101 contained only sealed sources which were leak tested. No leakage was ever found, why isn't this room and building Non-Impacked?	Cabrera	Concur. Building 101 has been re-classified as "Non-Impacted," and all affected text has been revised accordingly.
6	(98)	Appendix B	D. Burton-WRAMC	See comment 5, Non-Impacked, No further action.	Cabrera	See above response.
7	(107)	Appendix B	D. Burton-WRAMC	Building 188 has been demolished and the current building at the site is entirerly new. Building 188 was one floor.	Cabrera	Building 188 as discussed in the report is the building on the National Park Seminary land, shown in Figure 5-1. When the site walk-down occurred, this building was still standing, albeit in the process of renovation. Cabrera was unaware if there is any new Building 188, but historical documentation describes the former RAM usage in the old Building 188, which should be correctly depicted in the report. Building 188 is Non-Impacted.
8	(110)	Appendix B	D. Burton-WRAMC	Building 501 had only P-32 and S-35 used in it. With half-lives of less than 90 days and an elapsed time of 18 years shouldn't this building be Non-Impacked and No further action?	Cabrera	Concur. Building 501 has been re-classified as "Non-Impacted," and all affected text has been revised accordingly.

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Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
9	(300)	Pictures Building 516	D. Burton-WRAMC	The pictures of the vial crusher ventilation, generator, and Main Floor Source room are all mislabeled and are in the "equipment room"	Cabrera	Concur. The captions underneath the photographs have been revised.
10	(310)	As built drawing 516	D. Burton-WRAMC	In the main floor drawing of 516 the location #11 is in the "source room" and #10, #12 and #13 are in the equipment room. (see comment 9)	Cabrera	Concur. See above response.
1	ix	Executive Summary	W. Macon ARO	U-NAT used instead of U-238?	Cabrera	The nomenclature of U-NAT was used since it was used in inventories and historical documentation, but for clarity's sake, U-NAT has been revised to U-238 where appropriate.
2	1-1	1.2	W. Macon ARO	MARSSIM (NRC, 2000) is referenced, but not Revision 1 dated June 29, 2001 (66 FR 34727)?	Cabrera	According to NRC, Revision 1 of MARSSIM still is the version released in August, 2000. The updates published in 66 FR 34727 from June 29, 2001, were very minor and mostly editorial in nature, and thus did not result in a full re-release of the guide under a new revision. Previous editorial updates to MARSSIM were published in 65 FR 62531 from October 18, 2000, but these also did not result in a full re-release of the document under new revision number. Similarly, the most recent updates to MARSSIM were actually made in August 2002, but again, no formal document re-release occurred. NRC, 2000 remains how MARSSIM is referenced in-text, but a note has been made in the MARSSIM listing in the Reference Section (Section 8.0) that updates occurred in October 2000, June 2001, and August 2002.
3	5-11	5.3.2.1	W. Macon ARO	Typo, ARL Staff requested that the ARO *issue* a permit...	Cabrera	Concur. The affected text has been revised accordingly.

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Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
4	5-12	5.3.2.1	W. Macon ARO	DORF was (not fully) decommissioned in 1978? Discussion addresses the NRC decommission regulation in 1980. Also, some discussion of the earlier 100 mrem/yr criterion and how the DORF DP satisfied that criterion (did it?) could be included in the discussion. Except for continued use for radioactive waste operations under NRC License No. 08-01738-02, did the DP satisfy all other regulatory requirements for decommissioning at the time? More historical perspective here would be helpful.	Cabrera	The decommissioning effort was started in 1978, but the facility was not deemed in compliance until 1980 (being subject to regulations of that time); thus, the reason for discussion of 1980 regulations. The limits used for this effort were from RG 1.86, and were not dose based, as they are currently. The limits discussed in Table 5-3 of the HSA (modified from Table 2 of the Rockwell report) were developed by Rockwell based on the principles of ALARA, but were not based on any particular regulatory criteria. The criterion of 100 mrem/yr was apparently not used during this effort. The Rockwell report says that "limits were also met in all areas except for the exposure room where, due to room geometry and the accumulative properties of activation products, the activity ranged from 0.08 – 0.24 mrad/hr. The overall average was slightly higher than 0.1 mrad/hr. Individual pieces of concrete from the higher activity areas, when removed from the exposure room, indicated levels below 0.1 mrad/hr." These activity levels were deemed acceptable by the contracting officer's representative and by the USAEHA radiation surve satisfy all other regulatory requirements at the time, but even then it was agreed that levels in the exposure room were still high. If the overall average was 0.1 mrad/hr in the exposure room, at the time of decommissioning, that would equate to well above 100 mrem/yr, and also explaining why current dose rates are observed to be upwards of 70 mrem/yr (given the number of decay periods since then).
5	7-7	7.3	W. Macon ARO	Again, more historical perspective of the previous decommissioning effort would be helpful. Current dose is 57-70 mrem/yr, after 30 years? That's roughly 3 decay periods taking average of Co-60 (5.2 yr), Eu-152 (13.5 yr) and Eu-154 (8.6 yr). Was 1978 dose about 171-210 mrem/yr or more? This would have greatly exceeded the 100 mrem/yr criterion at the time. If true, then the decay-in-place option may require another 2-3 decay periods, about 20-30 more years, to get below 25 mrem/yr and could be mentioned. Ditto for Bldg 516 Factsheet with same discussion.	Cabrera	See above response.

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				It occurred to me that my math was probably off regarding decay periods, that factors of 4 and 8 should have been used instead of 2 and 3. Regardless, my point was to highlight what the previous higher dose rates were in 1978 and what the expected timeframe would be for the current dose rates to decay below the 25 mrem/yr threshold for unrestricted use. USACE/Cabrera should provide some more discussion about this to put things into proper perspective. When Mike Borisky told me that DORF was decommissioned in 1978, I took that to mean it was actually decommissioned and satisfied the 100 mrem/yr criterion at the time. I now question this. I mean, if dose rates were below 100 in 1978 then they should be well below 25 now, but they aren't. So I'm confused, and any historical discussion about decommissioning efforts in 1978 should clarify what exactly happened. I understand dose rates and measuring techniques have changed. The 1978 criterion should be compared to the current criterion, and then the previous results compared with current data. If I'm confused,	Cabrera	See above response.
1	General		Barbour-USACE HP	Include reference to and evaluation with respect to AMC Decomm Guidance (05Apr2004).	Cabrera	Concur. Reference to the AMC, 2004 guidance has been added and discussion has been added where appropriate (i.e. Building 101).

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Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
2	General		Barbour-USACE HP	Need to be consistent as to whether cutoff for halflives is 6 months or 1 year. Also, if 1 year, then need to be make description that most recent decay period was 7-10 years and that currently used radionuclides of all halflives are still included.	Cabrera	Concur. Text has been revised to state, "Of all radionuclides discovered to have been used at the WRAMC Forest Glen Annex and leased facilities in Rockville, MD, generally only radionuclides with half-lives greater than 1 year were retained as Radiological Contaminants of Potential Concern (RCOPCs). Using 1 year as a half-life cut-off for which radionuclides would be considered RCOPCs, it was assumed that if at least 7 10 years had passed since RAM usage, the radionuclide would be decayed to negligible levels, and thus not pose a concern. Short-lived radionuclides were only retained if documentation showed usage in an active laboratory or storage area (i.e. currently used/stored radionuclides are noted and included)."
3	General		Barbour-USACE HP	Be sure to include any missing sources for information, including: -ARL -Army Reactor Committee Files -Army Chief of Engineers Office -AMC HQ (was HQ for Harry Diamond Labs) -JMC (for any new info via Joe Heart) -USATHEMA (as per Mke Borisky's note at the meeting)	Cabrera	Concur. All information sources have been included and are listed in Section 3.2.
4	General		Barbour-USACE HP	Be sure to list the following documents in the HSA as having been reviewed. If you haven't recvd any of these let me know. Note that some of these may already be listed in the HSA: -WRAIR HSA -WRAMC HSA -DORF DP -All docs listed as furnished by govt in Sec 10 of the SOW	Cabrera	Concur. Section 3.3 includes a list of key documents reviewed during this effort (all documents listed in the SOW are on this list).

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5	3-4	3.2.5	Barbour-USACE HP	Include specific searches	Cabrera	Concur. Section 3.2.6 includes a list of all websites consulted during this effort.
6	3-6	Figure 3-1	Barbour-USACE HP	What about "Don't Know" answers. In other words, responses are not always yes or no. This may simply be a footnote that states that yes was assumed when no info was available.	Cabrera	Concur. A footnote has been added to the table explaining that "Yes" is assumed in cases where the answer is not known.
7	4-2	4.2.1	Barbour-USACE HP	2nd sentence. Revise "issues" to "issued"	Cabrera	Concur. The affected text has been revised accordingly.
8	5-5	5.1	Barbour-USACE HP	2nd para is confusing. An FSS is needed if the area is considered to be impacted.	Cabrera	Concur. The paragraph has been revised to state, "The radionuclide list also contains sealed sources used for instrument calibrations, brachytherapy, and radiology procedures. Radionuclides present in sealed sources (on their own) will not contribute to a building/area's status as impacted, and thus will not necessitate Final Status Survey (FSS) when the source is removed, provided that leak tests are conducted and results are satisfactory. Since all sealed source leak tests at WRAMC have shown satisfactory results, no buildings/areas were considered impacted due to sealed sources, and no radionuclides present as sealed sources only were retained as RCOPCs."
9	Table 5-2		Barbour-USACE HP	In Table 5-2, include 1)impacted or non-impacted, 2) radionuclides of concern, 3)impacted/non-impacted rooms list (as possible in the available table space), 4)notes for bldgs that will have contined rad use	Cabrera	Concur. This table has been expanded as appropriate.
10	General		Barbour-USACE HP	Include discussion regarding the two buildings that are scheduled for continued rad use. Specifically, that future surveys may stilll need to be performed based on whether the new license holder (Navy?) deems that to be necessary.	Cabrera	Concur. Text has been added to the end of Sections 5.3.2.1 and 5.3.2.2 stating, "After the licenses/permits are transferred post-BRAC, the new holder may deem surveys necessary, although they will not be recommended within this current investigation."

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11	5-8	5.3	Barbour-USACE HP	Revise "moot". Moot may also mean it is up for discussion, so just find a different word.	Cabrera	Concur. Text has been revised to state, "However, being that Buildings 504 and 509 have been demolished and the new WRAIR Building (Building 503) sits atop their footprints, as well as the fact that Building 149A consists of only one room that has already been appropriately closed out, it is unnecessary to narrow down potentially impacted rooms."
12	General		Barbour-USACE HP	Discuss DORF upfront in the ES and Sect 1 so that folks only looking for DORF info know where to find it.	Cabrera	Concur. A summary of the DORF discussion has been added to the ES and Section 1. A reference to Sections 5.3.2.3 And 7.3 for further information has been added in this summary as well.
13	5-13	5.3.2	Barbour-USACE HP	Revise "3 5000-gal" to "three 5000-gal"	Cabrera	Concur. The affected text has been revised accordingly.
14	5-14	5.4+	Barbour-USACE HP	Need to address whether there is a need to survey outside areas, specifically: 1)Potential Onsite burials 2)Potential landfill burials 3) Potential pathway from broken or removed sewer pipes 4) Potential pathway via demolition of a contaminated bldg. I think that the solution to this one is simply stating that the demolished have new bldgs on top of them and that the expectation was low to begin with.	Cabrera	Concur. Section 3.7.1 has been revised to clarify that no on-site disposal ever occurred, and that being that the new Building 503 has been built in the footprints of 504 and 509, the potential pathway via demolition of a contaminated building has been removed. Discussion of the potential pathway from broken or removed sewer pipes has been added (and discredited due to the close-out/removal of the hold-up tanks)
15	App B		Barbour-USACE HP	Title the CSM table in App B for when people use it independently. Also my xls version of that is corrupted. Could you guys email me a QA'd copy of that. It's probably an issue with my crappy laptop. By the way, that App B table is amazing, good work.	Cabrera	Concur. The App B table has been formatted for independent usage.

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Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
16	5-20	Fig 5-5	Barbour-USACE HP	Where does sewer discharge and outdoor areas fit into this CSM figure?	Cabrera	No outdoor areas other than the water retention tank area near Building 516 (DORF) would pose a potential cause for concern. The figure has been revised to incorporate this tank area and sewer discharge into the box for Disposal and Storage Activities.
17	7-5	Table 7-1	Barbour-USACE HP	Please revisit all of the N/Ls on Table 7-1 and find some alternative approaches. This just looks terrible and leaves one thinking, OK, then what do I use?!	Cabrera	Concur. The table has been re-done to only provide values for the isotope in its primary decay mode (thus, eliminating the N/L values for alpha, being that most of these isotopes are beta emitters). Also, values from NUREG/CR-5512 have been used to supplement the table where necessary. For the few isotopes remaining where no values is listed, a note has been made to the effect of these isotopes are all very short-lived, and would likely be decayed away to negligible levels between the time they are removed and the time any scoping survey would occur.
18	General		Barbour-USACE HP	Find any references to Bldg 516 on their own and add "(DORF)". I see one ref in Table 7-2 that needs it, not sure if there are others.	Cabrera	Concur. The affected text has been revised accordingly.
19	General		Barbour-USACE HP	Make a note that the fenceline of the DORF will be used as the demarcation	Cabrera	Concur. Text has been added to Section 7.3 stating that the fence will be used as the demarcation for what constitutes the area of investigation for the DORF complex.
20	General		Barbour-USACE HP	Verify with Dave Burton how we will approach the land down below the DORF, as per our discussions when we visited he DORF after the WRAMC site meeting. Let me know what comes out of that.	Cabrera	The land down below the DORF is not an area to be concerned with, as it was never used for anything (especially anything DORF-related). The fence was used to establish any radiologically controlled area, and this land is beyond the fenceline.
21	2-3	2.2.2	Barbour-USACE HP	Revise "northlsouth" at top of page	Cabrera	Concur. The affected text has been revised accordingly.
22	3-6	Figure 3-1	Barbour-USACE HP	May want to footnote flowchart for how to move through logic when the answer is not known (neither yes or no).	Cabrera	Concur. See response to previous comment (Barbour - Comment 6).
23	4-2	4.2.1	Barbour-USACE HP	Revise "issues to" in first section para	Cabrera	Concur. The affected text has been revised accordingly.

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Comment Number	**Page Number**	**Section/Figure/ Table/Appendix**	**Commentor-ORG**	**Comment**	**Response By**	**Response**
24	5-11	5.3.2.1	Barbour-USACE HP	Revise "Staff requested that the ARO [issue?] a permit"; near bottom of page	Cabrera	Concur. The affected text has been revised accordingly.
25	App B	Table	Barbour-USACE HP	For the pdf version of the table, resort so that 149A falls into chronological order.	Cabrera	Concur. The table has been re-sorted and the pdf version now shows chronological order.
26	App B	Fact Sheet B512	Barbour-USACE HP	Attempt should be made to make the recommendations presented in the Fact sheet for Bldg 512 more definitive. That is, we should know whether more info will be available by the time the HSA goes final.	Cabrera	Based on the available information, the recommendations presented are as definitive as possible. No new information has been discovered regarding Building 512, and thus it will be investigated as part of the next phase. Due to the fact that we know this is all the documentation we are going to see, the phrase, "If appropriate prior closure record cannot be found..." has been deleted in the App. B fact sheet and in-text. As this comment applies to Building 511 and the Gillette Building as well, the same edits have been made in-text and in their respective fact sheets.
27	General		Barbour-USACE HP	Bldg 501 has all short lived radionuclides and so may not need to be considered impacted.	Cabrera	Concur. Building 501 has been re-classified as "Non-Impacted," and all affected text has been revised accordingly. See response to Burton - Comment 8.
28	General		Barbour-USACE HP	For each bldg that had close-out documentation available and is being deemed non-impacted on the basis of that documentation, it would be good to have a description included in the text and/or fact sheets that indicates that the documentation was evaluated with respect to MARSSIM release and/or AMC commodity decom guidance (whichever is appropriate) release. The statement should provide evidence that the survey methods and data were reviewed and are sufficient to meet current day established methods; this would include criteria such as ensuring direct and transferrable activity measurements were performed and were of adequate quantity and quality.	Cabrera	Per Dave Burton, the WRAMC HPO room/building close-out surveys are performed with a rigor more strict than both MARSSIM and AMC guidance. Discussion has been added in Sections 5.3.1 and 3.2.1 to explain how the WRAMC HPO close-outs compare to MARSSIM and AMC guidance, and why the HPO close-outs can be used to prove acceptability for release.

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29	General		USACE	It was requested during the project review meeting on 5 November that Cabrera summarize any significant edits made to the report not directly arising from comments listed in this matrix.	Cabrera	Concur. No major text edits have been made to the body of the report that were not prompted by comments as listed above. A marked up MS Word file has been distributed to the group with the track changes feature enabled. Cabrera received a package of documentation from Mr. Burton during the 5 November meeting. This package contained further building construction data that Mr. Burton had requested from DPW as well as several as-built/renovation drawings for various buildings - this information has been incorporated into the building fact sheets, as well as added to the reference library. None of this new information is significant enough to change any findings or recommendations; however, it has allowed for several unknowns to be filled in on the building fact sheets. The only changes that have been made based on this new information is that building areas have been edited to be consistent with what DPW has on record, which takes into account buildings with more than one floor (building area values as presented in the draft report were based on aerial photographic analysis). A summary of the changes: *Building 101* : Value in Draft HSA = 68032 sq. ft. - New Value based on DPW records = 224983 sq. ft. (this new value incorporates all additions - but since building is non-impacted, it is irrelevant) *Building 149A* : Value in Draft HSA = 2990 sq. ft. - New Value based on DPW records = 800 sq. ft. (even though this is a significant change, it is irrelevant due to building being non-impacted) *Building 188* : Value in Draft HSA = 9874 sq. ft. - New Value based on DPW records = 2685 sq. ft. (even though this is a significant change, it is irrelevant due to building being non-impacted) Building 500: Value in Draft HSA = 21962 sq. ft. - New Value based on DPW records = 20806 sq. ft. (not a significant change, not an impacted building) Building 501: Value in Draft HSA = 17945 sq. ft. - New Value based on DPW records = 15305 sq. ft. (not a significant change, not an impacted building) Building 506: Value in Draft HSA = 3654 sq. ft. - New Value based on DPW records = 3403 sq. ft. (not a significant change, not an impacted building) Building 508: Value in Draft HSA = 10045 sq. ft. - New Value based on DPW records = 8593 sq. ft. (not a significant change, not an impacted building) Building 511: Value in Draft HSA = 36343 sq. ft. - New Value based on DPW records = 58488 sq. ft. (even though this is a significant change and the building is impacted, the area is unlimited for a Class 3 building, so changing the area does not change any findings or recommendations Building 512: Value in Draft HSA = 9555 sq. ft. - New Value based on DPW records = 9885 sq. ft. (although this is an impacted building, this is not a significant change)