




Responses to EPA comments on PICA 111 (UNCLASSIFIED)

Monday, February 14, 2011 5:46 PM

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RTCs - USE

Classification: UNCLASSIFIED

Caveats: NONE

Bill:

Let us know. I realize that your decision if Picatinny will need to submit a table for "PICA 111 sites" to move forward with this Proposed Plan will be made after the EPA's review of "ARCADIS 25 Site Table".

We have agreed to sample gw annually and obtain some soils samples.

This will be hard copy to Bill only unless requested.

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Classification: UNCLASSIFIED

Caveats: NONE

**Response to Comments on the Draft Proposed Plan for the PICA-111 Sites
Picatinny Arsenal, New Jersey
May 2010**

USEPA Region 2 – General Comments

Comment 1.

Comment: The PICA-111 Sites include Sites 109, 125, 142, 144, 146, and 203. Yet, the proposed remedy identified up front in the proposed plan only includes preferred alternatives for Sites 109 & 142 (soil) and Sites 109 & 203 (GW). It's not until you read most of the document that you learn that the preferred alternative for the other sites is land use controls (LUCs) based on exceedances of USEPA Residential/Industrial Regional Screening Levels (RSLs). Therefore, the up-front summary should also include this information.

Response: **Agreed. The text has been revised as requested.**

Comment 2.

Comment: Per correspondence from Angela Carpenter to James Daniel dated October 7, 2010, it is requested that a brief description of the components of the LUC (both EC and IC) for each site should be included in the proposed plan so that reviewers can determine how, or whether, ARARs will be met.

Response: **Agreed. The proposed plan has been modified to include a brief description of the components of engineering controls and institutional controls that will be utilized in the preferred alternative.**

Additionally, we realize that your decision if Picatinny will need to submit a table for "PICA 111 sites" to move forward with this Proposed Plan will be made after the EPA's review of "ARCADIS 25 Site Table". This was also a requirement of the correspondence from Angela Carpenter to James Daniel noted in your comment.

Comment 3.

Comment: It is unnecessarily wordy to refer to PICA-203 as "Site PICA-203". Therefore, EPA requests that the operable unit either be referred to as Site 203 or PICA-203.

Response: **Agreed. The text has been revised as requested.**

Comment 4.

Comment: It is requested that all site figures show site boundaries.

Response: **Agreed. All site figures have been revised to show site boundaries.**

USEPA Region 2 - Specific Comments

Comment 1. Introduction and Purpose, fifth paragraph, page 1-

Comment: In the first sentence, the correct NCP reference is Section 300.430(f)(1).

Response: **Agreed. The text has been revised as requested.**

Comment 2. Introduction and Purpose, ninth paragraph, page 2-

Comment: The first bullet under "The Army's Preferred Alternatives are:" states: "Alternative S-2

Maintenance and enforcement of LUCs including access restrictions and maintenance of existing engineering controls for soil at Sites 109 and 142.” However, further in the Proposed Plan (Summary of the Preferred Alternatives for PICA-111 Sites), it states that Sites 125, 144, 146 and PICA-203 will require LUCs since there are exceedances of USEPA Residential/Industrial RSLs. Therefore, it is requested that all of the PICA-111 sites be listed under this alternative.

Response: Agreed. The text has been revised as requested.

Comment 3. Introduction and Purpose, tenth paragraph, page 2 –

Comment: a. Since there is no trend analysis or prediction when Alternative GW-2 will meet ARARs, it is requested that the phrase “and are compliant with” be revised to “and are expected to comply with”

Response: Agreed. The text has been revised as requested.

Comment: b. In the bolded phrase delete the comma located between “Applicable” and “Relevant” and insert “or”..

Response: Agreed. The text has been revised as requested.

Comment 4. Picatinny Site Background, second paragraph, page 2 –

Comment: A space should be inserted between the second and third paragraphs.

Response: Agreed. The text has been revised as requested.

Comment 5. Picatinny Site Background, seventh paragraph, page 2 –

Comment: Revise the fourth sentence as follows: “The two Area I sites, Site 109 and PICA-203, are approximately 2.6 acres in area and are located near the southern shore of Picatinny Lake.”

Response: Agreed. The text has been revised as requested.

Comment 6. Picatinny Site Background, seventh paragraph, page 2-4 –

Comment: a. First bullet – Insert a space between “Site” and “109”.

Response: Agreed. The text has been revised as requested.

Comment: b. Sixth bullet - Revise as follows: “PICA-203, Former Buildings 333 and 347, Poison Gas Laboratory and Sample Handling House.”

Response: Agreed. The text has been revised as requested.

Comment 7. Picatinny Site Background, Site 109 – Former Buildings 445 and 445-D, Pyrotechnic Plant, first paragraph, page 4 –

Comment: a. In the first sentence change “southwest” to “southeast” and revise as follows: “Site 109 is located directly southeast of Green Pond Brook and approximately 250 feet south of Picatinny Lake.”

Response: Agreed. The text has been revised as requested.

Comment: b. Change the latter part of the second sentence as follows: "...consists of former Buildings 445 and 445-D (Figure 2)."

Response: Agreed. The text has been revised as requested.

Comment 8. Picatinny Site Background, Site 109 – Former Buildings 445 and 445-D, Pyrotechnic Plant, first paragraph, page 4 –

Comment: Near the end of the paragraph, change "Dinitrotoluene" to "dinitrotoluene".

Response: Agreed. The text has been revised as requested.

Comment 9. Picatinny Site Background, Site 125 – Buildings 172 and 183, Office Buildings and Lubricant Testing Area, first paragraph, page 4 –

Comment: At the end of the first sentence add "(Figure 4)". Note: It is requested that each site description add a reference to its corresponding figure.

Response: Agreed. The text has been revised as requested. All site descriptions now include a reference to the corresponding figure.

Comment 10. Picatinny Site Background, Site 125 – Buildings 172 and 183, Office Buildings and Lubricant Testing Area, fifth paragraph, page 4 –

Comment: In the first sentence change "northwest" to "southwest".

Response: Agreed. The text has been revised as requested.

Comment 11. Current and Future Use of PICA-111 Sites, first paragraph, page 7 –

Comment: The second sentence incorrectly makes reference to "Building 125". Site 125 consists of Buildings 172 and 183

Response: Agreed. The text has been revised to read "Building 172".

Comment 12. Current and Future Use of PICA-111 Sites, second paragraph, page 7 –

Comment: The second sentence states: "However, Picatinny has a centralized water distribution system and it has no current or future plans for the use of PICA-111 Sites groundwater for any purpose." The previous section, however, indicates that water supply well 302D causes a cone of depression inducing flow towards the well. The discussion in the paragraph (eleventh paragraph of PICA-111 Site Characteristics) implies that Area F groundwater is within the contributing area of water supply well 302D. It is requested that the proposed plan clearly state whether Area F is within the contributing area of supply well 302D and revise both sections as necessary.

Response: The text has been revised to make it clear that although Area F falls within the contributing area of supply well 302D, there are no plans to install future supply wells within PICA-111 Sites groundwater.

Comment 13. Current and Future Use of PICA-111 Sites, third paragraph, page 8 –

Comment: The first sentence refers to a CEA approved for Picatinny by NJDEP for the “consolidated and unconsolidated aquifers”. It is requested that an explanation be provided for “consolidated and unconsolidated aquifers” as it relates to previously described aquifers located within the PICA-111 Sites as unconfined, confined and bedrock aquifers.

Response: **Agreed. As requested, the additional explanation has been added.**

Comment 14. Identification of Environmental Contamination, third paragraph, page 8 —

Comment: In the third sentence, delete the comma located after “level of concern (LOC)”.

Response: **Agreed. The text has been revised as requested.**

Comment 15. Table 2, Constituents Detected that Exceeded Levels of Concern –

Comment: There appears to be an inconsistency in the table where the number of exceedances of NJ SRS and/or EPA RSL is less than the number of samples where it is indicated that the minimum detected concentration is greater than either the NJ SRS and/or EPA RSL for contaminants that a background level was not established. This includes PAHs, explosives, and pesticides.

Response: **The min and max presented are the range of detected concentrations. The range does not include non-detects. Therefore when the number of exceedances of NJ SRS or EPA RSL is less than the number of samples the difference is the number of non-detects.**

Comment 16. Table 3, Site 142, Constituents Detected that Exceeded Levels of Concern –

Comment: a. The minimum range of perchlorate detected in groundwater is not correct. According to Figure 6, the most recent sample from 142MW-1 was 1.6 ug/L.

Response: **Agreed. The minimum detected concentration of perchlorate has been revised to 1.6 µg/L.**

Comment: b. The number of exceedances of the LOC for perchlorate is listed as seven. However, Figure 6 only shows 5 groundwater exceedances for perchlorate. It is requested that the table or the figure be revised as necessary.

Response: **Two duplicate samples were taken into account in recording the number of exceedances of the LOC for perchlorate. The duplicate samples have been removed and Table 3 has been revised to show 5 exceedances and to show the maximum as 616 µg/L.**

Comment 17. Figure No. 2, Site 109 LOC Exceedances –

Comment: Please refer to General Comment 4.

Response: **In accordance with the response to General comment No. 4, a site boundary has been added to Figure 2.**

Comment 18. Figure No. 3, Site 109 and PICA-203 Groundwater LOC Exceedences –

Comment: Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 3.

Comment 19. Identification of Environmental Contamination, Site 109: AOC Explosives Contamination of Surface Soil near Buildings 445 and 445-D, Extent of Contamination in Soil, second paragraph, page 14 –

Comment: In the second sentence, change “2,4-DNT” to “2,4-dinitrotoluene (2,4-DNT)”.

Response: The root word - Dinitrotoluene (DNT) has already been spelled out on page 4.

Comment 20. Identification of Environmental Contamination, Site 109: AOC Explosives Contamination of Surface Soil near Buildings 445 and 445-D, Extent of Contamination in Soil, third paragraph, page 14 –

Comment: In the seventh sentence reference is made to the acronym “RL” without explanation for what it stands for. Therefore, it is requested that the words signified by “RL” be spelled out followed by “(RL)”.

In the second sentence, change “2,4-Dinitrotoluene” to “2,4-DNT”.

Response: Agreed. The text has been revised as requested.

Comment 21. Identification of Environmental Contamination, Site 109: AOC Explosives Contamination of Surface Soil near Buildings 445 and 445-D, Extent of Contamination in Groundwater, page 14 –

Comment: a. In the first sentence, reference is made to “Site PICA-203”. Please refer to General Comment 3.

Response: Agreed. The text has been revised to read PICA-203.

Comment: b. The fifth sentence states it states that arsenic and lead were detected above their respective LOCs in groundwater samples. Iron and manganese were also detected above their respective LOCs and should be mentioned in this section.

Response: Agreed. The text has been revised as requested.

Comment 22. Figure No. 4, Site 125 – Buildings 172 & 183 Sample Location Map –

Comment: Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 4.

Comment 23. Site 142, first paragraph, page 16 –

Comment: The third sentence indicates that monitoring for perchlorate in groundwater has been ongoing since 2004. However, Figure No. 6 indicates that sampling for perchlorate has been ongoing since 2000.

Response: The text has been revised to indicate that sampling for perchlorate has been ongoing since 2000.

Comment 24. Site 142: AOC 2 Potential Contamination Associated with the Seep Vat Trough, 16

Comment: Revise the first sentence as follows: "The former seep vat trough extended from Building 435 and was used to discharge wash water from building operations."

Response: Agreed. The text has been revised as requested.

Comment 25. Site 142: AOC 2 Potential Contamination Associated with the Seep Vat Trough, Extent of Contamination in Groundwater, page 16 –

Comment: This section summarizes the level of contamination detected in monitoring well sampled in December 2000. This is misleading as perchlorate levels in the well have diminished below the LOC of 5 ug/L in subsequent sampling events. In addition, aluminum and manganese levels detected in 2000 were so slightly above their respective LOCs, that they were not analyzed for in subsequent sampling events. It is requested that this paragraph be revised to reflect this.

Response: Agreed. The text has been revised as requested.

Comment 26. Site 142: AOC 3 Perchlorate Contamination in soil and Groundwater, page 16 –

Comment: Capitalize "soil" in the heading of this section.

Response: Agreed. The text has been revised as requested.

Comment 27. Site 142: AOC 2 and AOC 3, page 16 –

Comment: a. There is an inconsistency in the reported perchlorate concentration. In table 3 the maximum concentration of perchlorate detected in groundwater was 627 ug/l, however the highest concentration of perchlorate reported in Figure 6 and the text is 616 ug/l.

Response: **The maximum concentration (627 µg/L) shown in Table 3 is the higher value between the sample and the duplicate sample (as was explained in Note 3 on Table 3), whereas the Figure and the text reported the sample concentration of 616 µg/L. Table 3 has been revised to match the figure and the text.**

Comment: b. Table 7 only identifies arsenic as a COC for groundwater, but in the text (page 30 under "Groundwater") it is stated that lead and arsenic were identified as COCs. The language and chart should be consistent. Additionally, was perchlorate identified as a COC but not mentioned? It was present in groundwater at a concentration two orders of magnitude above the LOC and therefore should be identified as a COC or clearly explained that it has diminished below its LOC and is no longer considered a COC.

Response: **Table 7 has been revised; a groundwater site cleanup level for lead has been added to the table.**

Perchlorate was not selected as a COC because levels of perchlorate in groundwater have attenuated. Additional text to clarify this point has been added to the proposed plan.

Comment 28. Figure No. 5, Site 142 – Former Building 435 LOC Exceedances in Surface Soil –

Comment: a. For clarity, it should somehow be indicated that sample 142SD-1A that had a lead exceedance of 103,000 ppm was removed as part of the 2004 removal action. This can be accomplished by an asterisk with an explanation note.

Response: A note has been added to Figure 5 as requested.
Please note that sample location 142SD-1A is shown to be located within the area denoted as the excavation area on Figure 5.

Comment: b. Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 5.

Comment 29. Figure No. 6, Site 142 – Former Building 435 LOC Exceedences in Groundwater –

Comment: Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 6.

Comment 30. Site 144: AOC 2 Potential Subsurface Soil Contamination near the Catch Basin Southwest of Building 462, first paragraph, page 19 –

Comment: The first sentence refers to an “alleged 8-inch drain line”. However, it is referred to as an “Existing 8” Drain” in Figure No. 7. It is requested that this discrepancy be resolved.

Response: Agree. The text has been revised to indicate that the 8-inch drain line is “existing”.

Comment 31. Figure No. 7, Site 144 – Building 462 LOC Exceedences in Soil –

Comment: a. It is requested that soil boring 144SB-1 be deleted from the figure as the text indicated that it was not installed.

Response: Agree. The figure has been revised as requested.

Comment: b. Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 7.

Comment 32. PICA 203:, second paragraph, page 21–

Comment: Revise the latter part of the first sentence as follows: “...five groundwater samples were collected at PICA-203.”

Response: Agreed. The text has been revised as requested.

Comment 33. Figure No. 8, Site 146 - Former Building 497 LOC Exceedences in Surface Soil –

Comment: Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 8.

Comment 34. Figure No. 9, Site PICA 203 – Former Bldgs. 333 and 347 LOC Exceedences in Soil –

Comment: a. Revise the figure title block from “Site PICA 203” to “PICA 203”.

Response: Agreed. The figure title has been revised as requested.

Comment: b. Please refer to General Comment 4.

Response: In accordance with the response to General comment No. 4, a site boundary has been added to Figure 5.

Comment 35. PICA 203: AOC 1 Potential Contamination from the Former Solvent Vault and Former Buildings 333 and 347, Extent of Contamination in Groundwater, page 24 –

Comment: In the second sentence, insert “adjacent” before “Site 109”.

Response: Agreed. The text has been revised as requested.

Comment 36. Scope and Role of the Remedial Action, page 24–

Comment: It is requested that the fourth sentence be revised as follows: “The preferred alternative is maintenance and enforcement of LUCs including maintenance of existing engineering controls for PAH- and metal-contaminated soil.”

Response: Agreed. The text has been revised to read “The preferred alternative *for soil* is maintenance and enforcement of LUCs including maintenance of existing engineering controls for PAH- and metal-contaminated soil.”

Comment 37. Summary of Site Risks, Human Health Risk, Site 109, second paragraph, page 25 –

Comment: It is requested that the fourth sentence be revised as follows: “The estimated total hazard for subsurface soil exposure is 0.41 which is below the threshold of 1 when hazards are separated by target organ.”

Response: Agreed. The text has been revised as requested.

Comment 38. Summary of Site Risks, Human Health Risk, Site 142, second paragraph, page 26 –

Comment: a. Revise the second sentence as follows: “The estimated total hazard for the industrial research worker and construction/excavation worker scenarios were 0.048 and 0.041 respectively which are below the USEPA target non-cancer threshold of 1.”

Response: Agreed. The text has been revised as requested.

Comment: b. Insert a space after the second sentence.

Response: Agreed. The text has been revised as requested.

Comment 39. Summary of Site Risks, Human Health Risk, Site 142, AOC 2: Potential Contamination Associated with the Seep Vat and Trough, first paragraph, page 26 –

Comment: Add the following to the last sentence of the paragraph: “.....before the 2004 removal action described below.”

Response: Agreed. The text has been revised as requested.

Comment 40. Summary of Site Risks, Human Health Risk, Site 142, AOC 3: Perchlorate Contamination in Soil and Groundwater, page 26 –

Comment: It should be indicated in this section what levels of perchlorate were considered in the risk assessment. That is, were the perchlorate levels used in the risk assessment the maximum detected? If so, it should be stated that the risk levels for perchlorate are based on historical levels which are no longer present at this site. In addition, this section should indicate that perchlorate is no longer considered a COC at Site 142 in groundwater or soil due the 2004 removal action and the diminished level of perchlorate

in groundwater.

Response: Agreed. The text has been revised as requested.

Comment 41. Summary of Site Risks, Human Health Risk, Site 146, fourth paragraph, page 27 –

Comment: The estimated total hazard for the construction worker is above the USEPA's target non-cancer threshold of 1. Additionally, the adult lead model results indicated that lead concentrations in total soil may be a concern for constructions workers. The only constituent that was discussed or shown above the LOC was RDX in figures and previous text about Site 146. A discussion of lead should be included. It appears that the preferred remedy would be protective of the populations that would normally be at this site, although it would be better to include additional language in the institutional control for this site that indicates additional precautions should be taken for future construction work at the site.

Response: Agreed. The text has been revised as requested.

Comment 42. Summary of Site Risks, Human Health Risk, PICA 203, first paragraph, page 27 –

Comment: In the first sentence change "Site PICA 203" to "PICA 203".

Response: Agreed. The text has been revised as requested.

Comment 43. Summary of Site Risks, Ecological Risk Assessment, Site 109, page 28 –

Comment: The sampling results for Site 109 indicate that soil and groundwater concentrations are elevated and exceed levels of concern. However, the Preferred Alternative selected for this site is only land use controls (LUCs). Since this site is adjacent to the Green Pond Brook and as illustrated in Figure 12 the Area of Attainment (AA) extends into the brook, further evaluation should be considered.

Response: The area of Green Pond Brook adjacent to Site 109 is part of the Green Pond Brook Installation Restoration Program Site (PICA-193). Potential impacts to Green Pond Brook were considered in the Green Pond Brook Feasibility Study (IT, 2001) and formally documented in a record of decision. The final remedy for region (Region 2) of Green Pond Brook is long term chemical and biological monitoring. The implementation of this remedy is underway. This information has been added to the revised proposed plan in order to explain that potential impacts to Green Pond Brook have been evaluated.

Comment 44. Summary of Site Risks, Ecological Risk Assessment, Site 146, page 28 –

Comment: Significant concentrations of lead (758 ppm) and RDX (69.6 ppm) were found in soil at Site 146. However, the onsite buildings were removed and the soil was regraded prior to further delineation. No further samples were collected since the sample locations could not be recreated. Without adequate information regarding the current surface soil contaminant concentrations it is difficult to evaluate the protectiveness of the Preferred Alternative (LUCs).

Response: The RI for Site 146 included the collection of four samples from locations surrounding Building 497 prior to its demolition that were biased to identify a maximum release from the building. The concentrations noted in this comment were the maximum concentrations found in those four samples. This data was factored into the baseline ecological risk assessment and the conclusion was that it is unlikely that ecological communities within Site 146 area are at any significant risk from site contaminants present in environmental media.

However, to address the USEPA concern regarding the site, additional soil samples will be collected from two locations. Soil will be collected from the surface and subsurface for a total of four samples. This data will be incorporated in the final Proposed Plan for the site and available for the public to review during the public comment period.

Comment 45. Summary of Site Risks, Ecological Risk Assessment, PICA 203, first paragraph, page 28 –

Comment: In the first sentence change “Site PICA 203” to “PICA 203”.

Response: Agreed. The text has been revised as requested.

Comment 46. Remedial Action Objectives, first paragraph, page 28 –

Comment: In the last sentence of the paragraph change “Section 300.68(e)(2) of the NCP” to “Section 300.430(e)(2) of the NCP” and “Section 121 of SARA” to “Section 121 of CERCLA”.

Response: Agreed. The text has been revised as requested.

Comment 47. Remedial Action Objectives, third paragraph, page 28 –

Comment: Revise the first bullet to state: “Maintain a use consistent with the assumptions and results of the risk assessments which identified risk within the generally accepted risk range for the current and reasonably anticipated future use (military/industrial) following the NCP regulations;”

Response: Agreed. The text has been revised as requested.

Comment 48. Identification of Contaminants of Concern and Site Cleanup Levels, Surface Soil, page 29 –

Comment: The format between what are apparently the first and second paragraphs located above the bulleted items needs to be corrected.

Response: Agree. The text has been revised as requested.

Comment 49. Identification of Contaminants of Concern and Site Cleanup Levels, Subsurface Soil, third paragraph, page 29 –

Comment: In the second sentence insert “level” after “cleanup”.

Response: Agreed. The text has been revised as requested.

Comment 50. Identification of Contaminants of Concern and Site Cleanup Levels, Groundwater, third paragraph, page 30 –

Comment: Add a statement to the following effect: “As previously indicated, perchlorate is no longer considered a COC because groundwater levels have decreased to levels below the LOC and soil contaminated with perchlorate has been removed from the site.”

Response: Agreed. The text has been revised as requested.

Comment 51. Table 7, Site Cleanup Levels for PICA-111 Sites COCs, page 29 –

Comment: Change the groundwater level for arsenic to 3 ug/L and insert 5 ug/L for the cleanup level for lead in groundwater.

Response: Agreed. The text has been revised as requested.

Comment 52. Summary of Remedial Alternatives, Groundwater – Metals Plume, page 30 –

Comment: Insert "(LTM)" after "Long-Term Groundwater Monitoring".

Response: **Agreed. The text has been revised as requested**

Comment 53. Summary of Remedial Alternatives, Alternative S-1: No Action, page 34 –

Comment: Insert dollar signs before the zeroes.

Response: **Agreed. The text has been revised as requested.**

Comment 54. Summary of Remedial Alternatives, Alternative S-2: LUCs and Maintenance of Existing Engineering Controls, page 34 -35 –

Comment: Please refer to General Comment Number 2 regarding documenting how land use controls will protect human health and comply with ARARs.

Response: **Please see response to General Comment Number 2.**

Comment 55. Summary of Remedial Alternatives, Alternative S-2: LUCs and Maintenance of Existing Engineering Controls, page 34 –

Comment: It is confusing to list the baseline cost for LUCs for all 6 of the PICA-111 sites and then list site specific costs for 3 of them; Sites 109 and PICA 203 and Site 142. The site specific costs would appear to be superfluous since the baseline costs for all 6 of the PICA-111 sites have already been listed. Unless there is a valid reason for listing the site specific costs for LUCs for 3 out of 6 of the PICA-111 sites then they should be deleted.

Response: **The site-specific costs have been deleted and the text revised to reflect the following: the costs for LUCs include the costs for generating a Land Use Control Remedial Design (\$32,200) and 5-Year review costs; draft, draft-final and final reports (\$37, 222). Required enforcement of LUCs and maintenance of existing engineering controls at each of the sites are an additional cost.**

Comment 56. Summary of Remedial Alternatives, Alternative S-2: LUCs and Maintenance of Existing Engineering Controls, first full paragraph in the right column, page 34 –

Comment: Revise the third sentence as follows: "LUCs are administrative and engineering measures put in place.....".

Response: **Agreed. The text has been revised as requested.**

Comment 57. Summary of Remedial Alternatives, Alternative S-2: LUCs and Maintenance of Existing Engineering Controls, last paragraph, page 35 –

Comment: In the last sentence of the paragraph reference is made to the Department of Navy Principles. This term should be highlighted and included in the Glossary of Terms.

Response: **The term Department of Navy Principles has been highlighted and included in the Glossary of Terms.**

Comment 58. Summary of Remedial Alternatives, Alternative S-3: Excavation of Soil with COC Concentrations above SCLs and Off-Site Disposal, page 35 –

Comment: Since this remedial alternative includes LUCs, it is requested that the section title include LUCs.

Response: **Agree. The section title has been revised as requested.**

Comment 59. Summary of Remedial Alternatives, Alternative S-3: Excavation of Soil with COC Concentrations above SCLs and Off-Site Disposal, Site 142, second paragraph, page 35 –

Comment: a. In the last sentence of the paragraph change “institutional controls (ICs)” to “land use controls (LUCs)”.

Response: **Agree. The text has been revised as requested.**

Comment: b. Insert a space between the second paragraph and the following section; Implementation of ICs.

Response: **Agree. The text has been revised as requested.**

Comment 60. Summary of Remedial Alternatives, Alternative S-3: Excavation of Soil with COC Concentrations above SCLs and Off-Site Disposal, Site 142, Implementation of ICs, page 35 –

Comment: Change “Implementation of ICs” to “Implementation of LUCs”.

Response: **Agree. The text has been revised as requested.**

Comment 61. Summary of Remedial Alternatives, Alternative GW-2: LUCs and LTM of Groundwater, Long-Term Groundwater Monitoring, second paragraph, page 36 –

Comment: In the second to last sentence in the paragraph change “near the SCL” to “below the SCL”.

Response: **Agree. The text has been revised as requested.**

Comment 62. Summary of Remedial Alternatives, Alternative GW-2: LUCs and LTM of Groundwater, Long-Term Groundwater Monitoring, third paragraph, page 36 –

Comment: The last sentence of the paragraph implies that a QAPP would be developed as part of the remedial design to detail the requirements of the groundwater monitoring. It should be stated instead that the groundwater monitoring will follow a previously approved QAPP.

Response: **While it is possible that the remedial action could be performed under a previously approved QAPP; it may be necessary to produce a new QAPP for the project. The remedial alternative has been estimated assuming that a new QAPP would be produced as part of the remedial action. Therefore the cost estimate as presented is believed to be correct.**

Comment 63. Summary of Remedial Alternatives, Alternative GW-2: LUCs and LTM of Groundwater, Long-Term Groundwater Monitoring, fourth paragraph, page 36–

Comment: The first two sentences of this paragraph state: “Two groundwater monitoring wells will be included in the LTM program. Monitoring will take place once every 5 years to coincide with the 5-year review for the site.” EPA does not accept an initial groundwater monitoring frequency of once every 5 years. At a minimum, monitoring must initially take place on an annual basis for the first five years and may be conducted less frequently thereafter with approval from USEPA and NJDEP.

Response: **The Army agrees to change the monitoring frequency to annual for the first five years. The frequency and the need for monitoring will be re-evaluated at the five year review.**

Comment 64. Summary of Remedial Alternatives, Alternative GW-2: LUCs and LTM of Groundwater, Long-Term Groundwater Monitoring, page 36 –

Comment: The fifth paragraph summarizes the scenario if COC concentrations fall below the chemical-specific ARARs. A paragraph should be added summarizing the scenario if an increasing trend of COC concentrations is observed with the commitment to consider another remedy should COC concentrations increase or take an inordinate amount of time to reach their clean up levels.

Response: The contingency plan for what to do if the remedy is unsuccessful as implemented is inherent in the process of remediation. The remedy must be determined to be operating properly and successfully. Opportunities for implementing contingency plans will occur with each 5-year review.

Comment 65. Summary of Remedial Alternatives, Alternative GW-3: Mass Removal Pump and Treat, Long-Term Groundwater Monitoring, and Institutional Controls, ICs, Planning, and Permitting, page 36–

Comment: It is requested that the underline symbol following “ICs, Planning and Permitting.” be deleted.

Response: Agree. The underline symbol has been deleted as requested.

Comment 66. Summary of Remedial Alternatives, Alternative GW-3: Mass Removal Pump and Treat, Long-Term Groundwater Monitoring, and Institutional Controls, O&M of Pump and Treat System, page 37 –

Comment: It is requested that the underline symbol following “O&M of Pump and Treat System.” be deleted.

Response: Agree. The underline symbol has been deleted as requested.

Comment 67. Summary of Remedial Alternatives, Alternative GW-3: Mass Removal Pump and Treat, Long-Term Groundwater Monitoring, and Institutional Controls, Long-Term Monitoring, page 37–

Comment: It is requested that the underline symbol following “ICs, Planning, and Permitting.” be deleted. In addition, the underline symbol following “O&M of the Pump and Treat System” and “Long-Term Monitoring” should be deleted.

Response: Agree. The underline symbols have been deleted as requested:

Comment 68. Table 8, page 38 –

Comment: Table 8 is not consistent with previous text in the proposed plan, specifically the Summary of Remedial Alternatives. Table 8 is confusing in that it lists a Baseline Cost for LUCs presumably for all 6 sites that comprise PICA-111 Sites and the LUC alternative costs are listed for Site 109 and Site 142. EPA requests that the table be simplified for soil as follows:

| Alternative | Estimated Capital Cost | Present Worth |
|--------------------|------------------------|---------------|
| Soil | | |
| Alternative S-1 | \$0 | \$0 |
| Alternative S-2 | \$32,200 | \$69,422 |
| Alternative 109S-3 | \$1,506,128 | \$1,531,849 |
| Alternative 142S-3 | \$58,989 | \$84,710 |

Note: Add footnotes as necessary regarding Alternatives 109S-3 and 142S-3 which do not include the

cost of LUCs.

Response: Table 8 has been revised as requested, however, the revised costs differ from the suggested simplification due to the following reasons:

The baseline costs for LUCs presented in Table 8 includes the costs for generating a Land Use Control Remedial Design (\$32,200) and 5-Year review costs (\$37,222). Required enforcement of LUCs and maintenance of existing engineering controls at each of Sites 109 and 142 are an additional cost of \$25,721 per site. Therefore, the total present worth cost is \$120,864.

Comment 69. Comparative Analysis of Remedial Alternatives, Protection of Human Health and the Environment, Soil and Compliance with ARARS, page 38 –

Comment: Please refer to General Comment number 2.

Response: Please see response to General comment No.2.

Comment 70. Comparative Analysis of Remedial Alternatives, Protection of Human Health and the Environment, Soil, page 38 –

Comment: Revise the latter part of the extended sentence as follows: “....followed by Alternative S-2, which provides effective protection of human health by ensuring LUCs are maintained, and S-1, which does not provide protection of human health.”

Response: Agree. The text has been revised as requested.

Comment 71. Comparative Analysis of Remedial Alternatives, Protection of Human Health and the Environment, Groundwater, page 38–

Comment: a. Delete “and ICs” from the end of the third sentence.

Response: Agree. The text has been revised as requested.

Comment: b. In the fourth sentence change “ICs” to “LUCs”.

Response: Agree. The text has been revised as requested.

Comment: c. Revise the fifth sentence as follows: “Alternative GW-1 does not provide protection of human health.”

Response: Agree. The text has been revised as requested.

Comment 72. Comparative Analysis of Remedial Alternatives, Compliance with ARARS, Groundwater, page 38–

Comment: a. Revise the second sentence as follows: “Alternative GW-2 would comply with action-specific ARARs and would be expected to comply with chemical-specific ARARs.

Response: Agree. The text has been revised as requested.

Comment: b. Add the following sentence: Alternative GW-1 would not meet ARARs.

Response: Agree. The text has been revised as requested.

Comment 73. Comparative Analysis of Remedial Alternatives, Long-Term Effectiveness and Permanence, Groundwater, page 39 –

Comment: In the second sentence replace “ICs” with “LUCs”.

Response: **Agree. The text has been revised as requested.**

Comment 74. Comparative Analysis of Remedial Alternatives, Reduction in Toxicity, Mobility, or Volume through Treatment, Soil, page 39–

Comment: a. Add “by removal of contaminated soil from the site.” to the end of the first sentence.

Response: **Agree. The text has been revised as requested.**

Comment: b. Insert “However,” before the second sentence.

Response: **Agree. The text has been revised as requested.**

Comment: c. Revise the last sentence as follows: “However, toxicity, mobility, and volume of contaminated soil at PICA-111 Sites are minimal for Alternative S-2.”

Response: **Agree. The text has been revised as requested.**

Comment 75. Comparative Analysis of Remedial Alternatives, Reduction in Toxicity, Mobility, or Volume through Treatment, Soil (sic groundwater), page 39 –

Comment: Revise the last sentence of the paragraph as follows: “However, toxicity, mobility, and volume of contaminated groundwater at Site 109 and PICA 203 are minimal GW-2.”

Response: **Agree. The text has been revised as requested.**

Comment 76. Comparative Analysis of Remedial Alternatives, Cost, Groundwater, page 39 –

Comment: It is requested that cost of GW-3 be changed to (\$2.2M).

Response: **Agree. The text has been revised as requested.**

Comment 77. Summary of the Preferred Alternatives for PICA-111 Sites, page 39 – 40 –

Comment: a. The sampling results for Site 109 indicate that soil and groundwater concentrations are elevated and exceed levels of concern. However, the Preferred Alternative selected for this site is only land use controls (LUCs). Since this site is adjacent to the Green Pond Brook and as illustrated in Figure 12 the Area of Attainment (AA) extends into the brook, further evaluation should be considered.

Response: **See the response to Specific Comment #43.**

b. Significant concentrations of lead (758 ppm) and RDX (69.6 ppm) were found in soil at Site 146. However, the onsite buildings were removed and the soil was regraded prior to further delineation. No further samples were collected since the sample locations could not be recreated. Without adequate information regarding the current surface soil contaminant concentrations it is difficult to evaluate the protectiveness of the Preferred

Alternative (LUCs).

Response: See the response to Specific Comment #44.

Comment 78. Summary of the Preferred Alternatives for PICA-111 Sites, first paragraph, page 39

Comment: Revise the first bullet as follows: "Alternative S-2 (LUCs and Maintenance of Existing ECs) for contaminated soil at PICA-111 Sites."

Response: Agree. The text has been revised as requested.

Comment 79. Summary of the Preferred Alternatives for PICA-111 Sites, Site 109, page 40 –

Comment: a. Revise the last part of the second sentence as follows: ".....while short-term effectiveness, implementability, and cost favor LUCs and maintenance of existing ECs."

Response: Agree. The text has been revised as requested.

Comment: b. Revise the third sentence as follows: "Based on the comparative analysis of the RAs, the preferred RA for Site 109 is Alternative S-2 (LUCs and Maintenance of Existing ECs)."

Response: Agree. The text has been revised as requested.

Comment 80. Summary of the Preferred Alternatives for PICA-111 Sites, Site 125, page 40 –

Comment: Revise the last sentence as follows: "Based on these exceedances, Alternative S-2, LUCs and Maintenance of Existing ECs is the preferred alternative for Site 125."

Response: Agree. The text has been revised as requested.

Comment 81. Summary of the Preferred Alternatives for PICA-111 Sites, Site 142, page 40 –

Comment: In the last sentence change "Alternative 142S-2" to "Alternative S-2".

Response: Agree. The text has been revised as requested.

Comment 82. Summary of the Preferred Alternatives for PICA-111 Sites, Site 144, page 40 –

Comment: Revise the last sentence as follows: "Based on these exceedances, Alternative S-2, LUCs and Maintenance of Existing ECs is the preferred alternative for Site 144."

Response: Agree. The text has been revised as requested.

Comment 83. Summary of the Preferred Alternatives for PICA-111 Sites, Site 146, page 40 –

Comment: Revise the last sentence as follows: "Based on these exceedances, Alternative S-2, LUCs and Maintenance of Existing ECs is the preferred alternative for Site 146."

Response: Agree. The text has been revised as requested.

Comment 84. Summary of the Preferred Alternatives for PICA-111 Sites, Site 109/PICA-203 Groundwater Area of Attainment, first paragraph, page 40 –

Comment: Revise the third sentence to state: “LTM/LUCs is expected to meet the threshold criteria through LUCs.”

Response: Agree. The text has been revised as requested.

Comment 85. Summary of the Preferred Alternatives for PICA-111 Sites, Site 109/PICA-203 Groundwater Area of Attainment, second paragraph, page 40 –

Comment: The acceptance or approval of the Feasibility Study for the PICA-111 Sites does not mean that EPA or NJDEP approves the Army’s preferred alternatives for the PICA-111 Sites. Approval of the FS more accurately denotes that a sufficient array of alternatives to address contamination at the site(s) was adequately considered. Therefore, it is requested that the last sentence of this paragraph be deleted.

Response: The text has been revised to read that “Both the USEPA and NJDEP have approved the *PICA-111 Sites Final Feasibility Study –Picatinny Arsenal, New Jersey (Shaw, 2010)* signifying that a sufficient array of alternatives to address contamination at the sites was adequately considered.

Comment 86. Summary of the Preferred Alternatives for PICA-111 Sites, Site 109/PICA-203 Groundwater Area of Attainment, third paragraph, page 40 –

Comment: a. In the second sentence replace “CERCLA 121(b)” with “NCP Section 300.430(e)(9)(iii)”.

Response: Agree. The text has been revised as requested.

Comment: b. Revise number 2 of the second sentence as follows: “Is expected to comply with ARARs;”

Response: Agree. The text has been revised as requested.

Comment: c. Delete number 5 of the second sentence as the preferred remedy does not meet the requirement of treatment as a principal element.

Response: Agree. The text has been revised as requested.

Comment 87. Community Participation, second paragraph, page 41 –

Comment: In the second sentence replace “a chance” with “an opportunity”.

Response: Agree. The text has been revised as requested.

Comment 88. Community Participation, Public Comment Period, page 41 –

Comment: Update the telephone number for Gregory Zalaskus to (609) 984-2065.

Response: Agree. The telephone number has been updated as requested.

Comment 89. Acronyms and Abbreviations, page 42 –

- Comment:**
- a. Add the following abbreviations or acronyms:
 - 2,4-DNT
 - 4,4-DDT
 - RL
 - b. Add (EPA) after Industrial Regional Screening Level
 - c. Add (NJDEP) after Industrial Soil Remediation Standards

Response: Agree. The text has been revised as requested except for 2,4-DNT because the first mention of the root word dinitrotoluene was on page 4 of the report.