Appendix B
Responsiveness Summary and Response to Regulatory Comments

RESPONSE TO REVIEW COMMENTS

Final (for signatures) Record of Decision for Sites 3, and 21
Andersen Air Force Base, Guam
February 2011
Review Comments Received March 2010 from U.S. EPA
Reviewer: Lewis C. Maldonado

ITEM	PAGE	SECTION	COMMENT
1.	1-3	Section 1.5	A paragraph should be added addressing the fact that a 5 year review will be required for Site 3. This could be inserted right before the fourth paragraph, which discusses why a 5 year review will not be required for Site 21. Here is some proposed language: "Because the selected remedy for Site 3 will result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted for Site 3 within five years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment."
Response: We concur. The proposed language has been added as suggested.			
2.	2-20	Section 2.2.4	I don't really understand why the second paragraph, which is a discussion of "the LUC action plan or memorandum of understanding," is included here. It's dropped in without any context since LUCs are not really discussed until later in the document with reference to the remedy for Site 3. The LUCs that are selected for Site 3 are part of the ROD and will be enforceable as a provision of the ROD, which is an enforceable primary document under the FFA. I think this paragraph is confusing and should be deleted.
Response: We concur. The subject paragraph has been deleted.			
3.	2-56	Section 2.7.2.3.2	There is some text missing from the sentence that begins "Therefore, chromium is removed as a..." Is it "COC" that needs to be inserted?
Response: This was a typographical error. COC was the missing word and has been inserted at the end of the sentence.			
4.	2-68	Section 2.9.1.1	The word "would" should replace "will" in the following sentences: "The no action alternative assumes that site conditions ~~will~~ would be left..."; "For this response alternative, the remaining contaminated soil and debris fill ~~will~~ would be left..." "No additional actions, such as LUCs...~~will~~ would be implemented at the site."
Response: Agreed. The changes have been made as suggested.			

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5.	2-68	Section 2.9.1.3	The word "might" "would", and "could" should replace "may", "will", and "can" in the following sentences: "As oils contamination is widespread and heterogeneously disseminated…the total volume of media to be removed ~~may~~ might increase…" "Excavated contaminated media (solid waste debris and contaminated soil) ~~will~~ would be disposed…" "This alternative ~~can~~ could be easily implemented…"
Response: Agreed. The suggested changes have been made to the paragraph.			
6.	2-72	Section 2.9.4.1	The words "would" should replace "will" in the following sentences: "The no action alternative assumes that site conditions ~~will~~ would remain in their current state. For this response alternative, existing contaminated soil ~~will~~ would be left in place…No additional actions…~~will~~ would be implemented at the site."
Response: Agreed. The changes have been made as suggested.			
7.	2-72	Section 2.9.4.2	In the second paragraph of the section, the word "would" should replace "will" in the following sentences: "Excavated contaminated media (contaminated soil) ~~will~~ would be disposed of…" "LUCs, long-term monitoring, and compliance reporting ~~will~~ would not be required."
Response: Agreed. The changes have been made as suggested.			
8.	2-78	Section 2.10.2	Section 2.10.2 Territorial Agency Acceptance, should be numbered "2.10.1.8". This paragraph also needs to be rewritten because it is written in the language of the proposed plan before we knew what GEPA would say about the preferred alternative. Since we are now at the ROD stage, this section should say what GEPA's position actually is, not what is "expected".
Response: Concur. The section has been correctly renumbered as 2.10.1.8. The paragraph now reads: "*GEPA would not accept the no action alternative (Alternative 1) because it does not mitigate potential risks from impacted soil. Although the remaining alternatives do not involve destruction or reduction in toxicity, of contaminants, they do eliminate potential human health risks at the site. GEPA supported the use of any of the three remaining alternatives.*"			

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9.	2-78	Section 2.10.3 and 2.10.4	Section 2.10.3 and Section 2.10.4 appear together through a typographical error. Section 2.10.3 actually should be "2.10.1.9 is Community Acceptance. It appears from the text that no written comments were received from the public. Did any members of the public appear at the public meeting and make comments? Something needs to be said about what, if anything, happened at the public meeting. If there were no comments and no appearances, I don't think the ROD should say "The PP ... was accepted by the public." It would be better to say something like "No objections to the preferred alternative for Site 3 were received from the public."
Response: Concur. The sections have been renumbered and separated and the new section 2.10.1.9 (old section 2.10.3) has been rewritten as follows: *"At the time of the public review period, the Navy had selected Alternative 2: LUCs as the preferred alternative for Site 3. No written comments were received on the PP and no members of the public attended the public meeting. No objections to the preferred alternative for Site 3 were received from the public."*			
10.	2-78	Section 2.10.4	The words "Section 2.10.4" should be changed to "Section 2.10.2" and need to be moved down a few lines so that they are above the words "This section summarizes how well each alternative satisfies each evaluation criterion...for Site 21." In addition, Section 2.10.2 needs to have a heading, which I believe would be "Comparative Analysis of Alternatives, Site 21", which would be consistent with the wording of Section 2.10.1 regarding Site 3.
Response: The section headings have been corrected and placed in the correct location.			
11.	2-78, 2-79, and 2-80	2.10.4.1 and 2.10.4.2	I believe the numbering should all be 2.10.2.1, 2.10.2.2, etc., not 2.10.4.1, 2.10.4.2, etc., because the discussion of comparison of alternatives for Site 21 should all be subsections of Section 2.10.2, not subsections of 2.10.4.
Response: The relevant sections have been renumbered starting with 2.10.2.1, which mirrors the headings for Site 3.			
12.	2-80	Section 2.10.5	"Section 2.10.5 Territorial Agency Acceptance" should be renumbered "2.10.2.8". With respect to the substance of the text under this subsection, see my comment #8 above about rewording the Territorial Agency acceptance language.

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Response: Concur. This section has been renumbered as 2.10.2.8 and the section now reads: *"GEPA would not accept the no action alternative (Alternative 1) because it does not mitigate potential risks from impacted soil. Although the remaining alternatives do not involve contaminant destruction or reduction in toxicity of contaminants, they do eliminate potential human health risks at the site. GEPA supported the use of any of the remaining alternatives."*			
13.	2-80	Section 2.10.6	"Section 2.10.6 Community Acceptance" should be renumbered "2.10.2.9". With respect to the substance of the text under this subsection, see my comment #9 above about rewording the community acceptance language.
Response: Agreed. The section has been renumbered and the text now reads: *"At the time of the public review period, the Navy had selected Alternative 2: Soil removal and offsite disposal as the preferred alternative for Site 21. No written comments were received on the PP and no members of the public attended the public meeting. No objections to the preferred alternative for Site 3 were received from the public."*			
14.	2-82	Section 2.12.1.1	At the end of Section 2.12.1.1, the last sentence of the paragraph should be reworded as follows: "Therefore, ~~LUCs~~ Alternative 2 (LUCs) has been selected as the ~~recommended remedial alternative~~ remedy for Site 3.
Response: Concur. The changes have been made as suggested.			
15.	2-82	Section 2.12.1.2	The second sentence of Section 2.12.1.2 Description of the selected remedy should be reworded as follows: "The LUCs ~~are recommended~~ have been selected to protect occupational workers and possible future residents…"
Response: Agreed. The suggested changes have been made to this section.			
16.	2-82	Section 2.12.1.2	The last sentence of the second paragraph of Section 2.12.1.2 should be reworded as follows: "Institutional (legal) controls and engineered controls at Site 3 ~~would~~ will adequately protect human and ecologically receptors…"
Response: Concur. The word "would" was replaced with "will" as suggested.			

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17.	2-82	Section 2.12.1.2	The last paragraph on the page should be reworked. A portion of the language in this paragraph implies that the land is being transferred to private hands, which is not the case. This should be a discussion of ICs for an open base. In the first sentence "LUC" should be "LUCs". The paragraph can continue unchanged through the sentence that reads "LUCs will include institutional (legal) controls and engineering controls, such as fencing with a locked gate and signage." All of the text after that sentence in this paragraph should be stricken, i.e., the text that begins "LUCs placed in Navy land use registries may include Land Use Covenants..."
Response: Concur. The "s" was added to LUC and the text revised as suggested.			
18.	2-85	Section 2.12.1.2	At the top of the page, there is underline and strikeout that should be removed in the list of specific objectives for LUCS at Site 3. The stricken language should simply be deleted for the final version of the ROD.
Response: Concur. This was the result of a comment from the EPA RPM and was intended to show that comment. The changes have been accepted such that the underline and strikeout are no longer present.			
19.	2-85	Section 2.12.1.2	The first sentence of the second paragraph should be reworded as follows: "LUCs required for this site ~~would~~ will include notice of the contamination in the Navy record systems and the Base General Plan and restrictions on land use to accomplish the above list of specific objectives, including ~~notice of~~ a requirement for prior written approval of all future construction or demolition activities within the area(s) of remaining contamination."
Response: Agreed. The sentence has been reworded as suggested.			
20.	2-86	Section 2.12.1.2	In the middle of the page, the second to last sentence of the paragraph should be modified as follows: "Under the ~~recommended alternative~~ the selected remedy, COCs may remain in place at such concentrations at Site 3, and CERCLA 5-year reviews will be required as part of the ~~recommended alternative~~ selected remedy.
Response: Agreed. The sentence has been reworded as suggested.			

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21.	2-86 and 2-87	Section 2.12.1.2	I have the following comments and requested revisions to the list of specific LUC requirements for Site 3: • "Land use (i.e., current and forseeable) is zoned for industrial purposes within the landfill complex." Is this a reference to Guam local zoning requirements and do they apply to the military base or does the term "landfill complex" include more than just the base. If the latter, I guess the language about zoning laws would apply. • "LUCs will include notice of contamination in the Real Property records system and the Base General Plan, ~~deed-restrictions for~~ restrictions on residential development. ~~including engineering controls for construction activities within the area(s) of remaining contamination.~~" I struck the last clause because I think this point is covered more thoroughly later in the list (dig and construction permits) • "~~Deed restrictions for~~ Restrictions on land use will be noted at the Real Property office, incorporated in the Base General Plan, and entered…"
Response: Concur. The first bullet now reads, *"Land use (i.e., current and foreseeable) is used for industrial purposes within the area of the landfill."* The second bullet now reads, *"LUCs will include a notice of contamination in the Real Property records system and the Base General Plan and a restriction on residential development."* The third bullet was revised as suggested.			
22.	2-87	Section 2.12.1.3	In the first sentence of Section 2.12.1.3, the word "in" should be inserted before the words "Table 2-20".
Response: Agreed. The change has been made as suggested.			
23.	2-88	Section 2.12.2	In the second sentence of Section 2.12.2, the word "involved" should be changed to "involves".
Response: Agreed. The typographical error has been fixed as suggested.			
24.	2-89	Section 2.12.2.1	At the bottom of the page, the following sentence should be rewritten: "Additionally, it is likely that Alternative 2 would be preferred by both Territorial government and the public." That sounds like Proposed Plan language. Since the ROD is now being finalized, we should state whether the territorial Government do support Alternative 2, not whether it is "likely" that they will.

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Response: Concur. The sentence has been rewritten as follows: *"Additionally, Alternative 2 is preferred by both the Territorial government and the public."*			
25.	2-89	Section 2.12.2.2	In the first sentence of Section 2.12.2.2, the words "preferred remedy" should be changed to "selected remedy".
Response: Agreed. The change has been made as requested.			
26.	2-93	Section 2.13.1.1	I believe the following sentence should be rewritten as follows: "LUCs would include notice of the contamination in the Navy record systems and restrictions on land use, including ~~notice of~~ prior written approval for all future construction or demolition activities with the area(s) of remaining contamination."
Response: Agreed. The change has been made as suggested.			
27.	2-93	Section 2.13.1.2	A sentence should be added to the end of the second paragraph of Section 2.13.1.2 Compliance with ARARs, as follows: "If a TBC is actually selected in the ROD, it must be complied with."
Response: Concur. The sentence has been added as suggested.			
28.	2-95	Table 2-22	I was somewhat confused by the "Action to be Taken to Attain Requirement" language for the first TBC (EPA Residential RSLs). The language currently reads: "EPA residential cancer and non-cancer RSLs will be used to screen treatment and disposal alternatives and to help select cleanup goals for COCs present in soil." This sounds like ARARs language from the Feasibility Study stage. The remedy is now being selected and there should be a more affirmative statement about the role of RSLs. For Site 3, it could be something like: "The selected remedy will comply with this requirement through LUCs that will prevent use of the Site for residential purposes."
Response: Agreed. The proposed language has been added to provide a more affirmative statement.			
29.	2-95	Table 2-22	In the second TBC entry, the Action to be Taken to Attain Requirement should be reworded. Again, it seems to be written as if the document were at the FS stage. A better wording would: "~~Remedial alternatives that include a LUC component~~ The selected remedy for Site 3, providing for LUCs, should be designed and documented in accordance with the policy and guidance."

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Response: Concur. The proposed changes were incorporated into the Table.			
30.	2-95	Table 2-22	I would delete the last item on that page of the Table since the conclusion is that the National Historic Preservation Act is not ARAR.
Response: Agreed. The row for the National Historic Preservation Act has been deleted as requested.			
31.	2-97	Table 2-22	In the Action to Taken to Attain Requirement section regarding the Guam Historic Preservation regulations, the text should be reworded as follows: "The State Historic Preservation Officer is responsible for managing significant national and State historic and archaeological resources within the territory of Guam. ~~and will be managed as discussed above (16 U.S.C. 470).~~ In the event that significant historic and archaeological resources within the meaning of these regulations are uncovered during remedial activities, mitigation measures to protect the area would be required, as discussed above with respect to 16 U.S.C. 470.
Response: Agreed. The text has been modified as suggested.			
32.	2-97	Table 2-22	In the Action to Taken to Attain Requirement section regarding the Endangered Species Act, the text is written as if there are still different cleanup alternatives being evaluated ("All ex situ cleanup alternatives should be reviewed…") I would rewrite this text to say something like: "The selected remedy will comply with this requirement by ensuring that no adverse impact to any endangered species or its habitat occurs." If we don't believe there are any endangered species or habitat present at Site 3, that should be stated, but I don't know whether that is the case.
Response: Concur. The text has been modified with the proposed language.			
33.	2-102	Section 2.14	The second sentence of the paragraph should be modified to read: "No substantial changes have occurred in site conditions, land use, or regulations pertaining to remediation of these sites since the issuance of the PP."
Response: Agreed. The proposed text was added to the end of the second sentence.			

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34.	2-106	Table 2-24	The "Action to be Taken to Attain Requirement" language for the first TBC (EPA Residential RSLs) should be reworded. The language currently reads: "EPA residential cancer and non-cancer RSLs will be used to screen treatment and disposal alternatives and to help select cleanup goals for COCs present in soil." This sounds like ARARs language from the Feasibility Study stage. The remedy is now being selected and there should be a more affirmative statement about the role of RSLs. For Site 21, it could be something like: "The selected remedy will comply with this requirement by removing and properly disposing of soils with contaminant concentrations above RSLs." (For example, see the language in the TBC section of Table 2-21 of the Final ROD for Sites 63, 64, and 67, Site Wide Operable Unit.)
Response: Concur. The text has been modified as suggested.			
35.	2-103	Table 2-24	I believe the TBC entry regarding DOD and Air Force guidance regarding LUCs should be deleted since LUCs are not a component of the remedy for Site 21, which is being cleaned up to unrestricted use.
Response: Agreed. The LUCs row of the table has been deleted.			
36.	2-105	Table 2-24	In the Action to Taken to Attain Requirement section regarding the Guam Historic Preservation regulations, the text should be reworded as follows: "The State Historic Preservation Officer is responsible for managing significant national and State historic and archaeological resources within the territory of Guam. ~~and will be managed as discussed above (16 U.S.C. 470).~~ In the event that significant historic and archaeological resources within the meaning of these regulations are uncovered during remedial activities, mitigation measures to protect the area would be required, as discussed above with respect to 16 U.S.C. 470.
Response: Concur. The text has been modified as suggested.			

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37.	2-105	Table 2-24	In the Action to Taken to Attain Requirement section regarding the Endangered Species Act, the text is written as if there are still different cleanup alternatives being evaluated ("All ex situ cleanup alternatives should be reviewed…") I would rewrite this text to say something like: "The selected remedy will comply with this requirement by ensuring that no adverse impact to any endangered species or its habitat occurs." If we don't believe there are any endangered species or habitat present at Site 3, that should be stated, but I don't know whether that is the case.
Response: Agreed. The text has been reworded as suggested.			
38.	3-1	Section 3.0	I would recommend deleting the last sentence, which reads: "The PP selected by the Navy was accepted by the public." I think the Responsiveness summary should generally just summarize the comments received and the responses provided without stating that the proposed plan was accepted by the public.
Response: Agreed. The last sentence was deleted as suggested.			

Appendix C
Cost Estimates

Appendix C.1
Site 3 Alternative Cost Estimates

Table C.1-1: Alternative 1 (No Action)

Component Description	Site 03			
	QTY	Unit	Unit Price	Component Cost
Capital Costs				
1. SVE System Removal				
Remove system and above-ground components	*None Exist On-site*			$0
Miscellaneous Allowance				$0
Subtotal				*$0*
Contingency				$0
Subtotal				*$0*
Project Managemet & Administrative Costs				$0
Subtotal				*$0*
Subtotal (including 4.00% Guam GET)				*$0*
Capital Costs of System Removal				**$0**
2. Well Abandonment				
Abandon Existing Wells	*None Exist On-site*			$0
Miscellaneous Allowance				$0
Subtotal				*$0*
Contingency				$0
Subtotal				*$0*
Project Managemet & Administrative Costs				$0
Subtotal				*$0*
Subtotal (including 4.00% Guam GET)				*$0*
Capital Costs of Well Abandonment				**$0**
TOTAL CAPITAL COSTS				**$0**
O&M Costs				$0
Periodic Costs				$0
Total Present Worth Project Costs				**$0**

Notes:

EA = each
GET = general excise tax
O&M = operation and maintenance
LS = lump sum
LUC = land use control
QTY = quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars

Table C.1-2: Alternative 2 (LUCs)

	Site 03			
Component Description	**QTY**	**Unit**	**Unit Price**	**Component Cost**
Capital Costs				
1. Well Abandonment (from Alternative 1)				**$0**
2. LUCs				
Incorporate Restrictions into General Plan	1	LS	$10,000	$10,000
Delineate Area onto Master Planning Maps	1	LS	$10,000	$10,000
Update GIS Database with LUCs	1	LS	$10,000	$10,000
Communicate LUCs	1	LS	$10,000	$10,000
Subtotal				*$40,000*
Contingincy and Project Managemet & Administrative Costs	30%			$12,000
Subtotal				*$52,000*
Subtotal (including 4.00% Guam GET)				*$54,080*
Capital Costs of LUCs				**$54,080**
TOTAL CAPITAL COSTS				**$54,080**
O&M Costs				
1. LUC Annual Training and Inspections (year 1 through year 30)				
Annual Training	8	HR	$100	$800
Annual Inspection and Reporting	1	LS	$14,000	$14,000
Subtotal				*$14,800*
Contingincy and Project Managemet & Administrative Costs	30%			$4,440
Subtotal				*$19,240*
Subtotal (including 4.00% Guam GET)			*Annual Total*	*$20,010*
	Program total (with 3% Discount)			**$582,279**
LUC O&M Program Costs (30 years)				**$582,279**
Periodic Costs				
1. Five-Year Reviews				
Five-Year Reviews (years 5, 10, 15, 20, 25, 30)	1	LS	$20,000	$20,000
Subtotal				*$20,000*
Contingincy and Project Managemet & Administrative Costs	30%			$6,000
Subtotal				*$26,000*
Subtotal (including 4.00% Guam GET)			*Event Total*	*$27,040*
	Program total (with 3% Discount)			**$157,373**
PERIODIC PROGRAM COSTS				**$157,373**
Total Present Worth Project Costs				**$793,732**

Notes:

GET = general excise tax
HR = hour
LS = lump sum
LUC = land use control
O&M = operation and maintenance
QTY = quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars
2) Duration is 30 years

Table C.1-3: Alternative 3 (Soil Removal)

	Site 03			
Component Description	**QTY**	**Unit**	**Unit Price**	**Component Cost**
Capital Costs				
1. Well Abandonment (from Alternative 1)				**$0**
2. Source Removal - Excavate and Remove				
Mobilize and Site Preparation	1	LS	$13,832	$13,832
Clear & Grub	1	LS	$9,498	$9,498
MEC Oversight	0	LS	$0	$0
Excavate & Backfill	13,376	CY	$96	$1,289,553
Confirmation/Verification Sampling & Analysis	1	LS	$186,706	$186,706
Miscellaneous Allowance	10%			$149,959
Subtotal				*$1,649,548*
Contingency	10%			$164,955
Subtotal				*$1,814,503*
Project Managemet & Administrative Costs	10%			$181,450
Subtotal				*$1,995,953*
Subtotal (including 4.00% Guam GET)				*$2,075,791*
Capital Costs of Source Removal				**$2,075,791**
TOTAL CAPITAL COSTS				**$2,075,791**
O&M Costs				**$0**
Periodic Costs				**$0**
Total Present Worth Project Costs				**$2,075,791**

Notes:

CY = cubic yard
EA = each
GET = general excise tax
O&M = operation and maintenance
LS = lump sum
LUC = land use control
QTY = quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars
2) There would be no disposal cost or waste acceptance fee since wastes would be disposed of at an on-site consolidation unit

Site-Specific Assumptions

1) Costs include shoring to one area with excavation to 15 feet bgs

Table C.1-4: Alternative 4 (Physical Barriers/Soil Cap)

Component Description	Site 03 QTY	Unit	Unit Price	Component Cost
Capital Costs				
1. Well Abandonment (from Alternative 1)				**$0**
2. Cap/Containment - Capping				
Mobilize and Site Preparation	1	LS	$13,832	$13,832
Clear & Grub	1	LS	$126,591	$126,591
Capping	25,168	CY	$76	$1,909,132
Miscellaneous Allowance	10%			$204,956
Subtotal				*$2,254,511*
Contingency	10%			$204,956
Subtotal				*$2,459,466*
Project Management & Administrative Costs	10%			$204,956
Subtotal				*$2,664,422*
Capital Costs of Capping				**$2,664,422**
3. LUCS (from Alternative 2)				**$54,080**
TOTAL CAPITAL COSTS				**$2,718,502**
Total Capital Cost (includes 4.0% Guam GET)				*$2,827,242*
O&M Costs				
1. Soil Cap O&M				
Annual Maintenance & Upkeep	1	LS	$59,361	$59,361
Subtotal				*$59,361*
Contingency and Project Management & Administrative Costs	30%			$17,808
Subtotal				*$77,169*
Subtotal (including 4.00% Guam GET)			*Annual Total*	*$80,256*
	Program total (with 3% Discount)			**$2,335,436**
2. LUC O&M Program Costs (from Alternative 2)				**$582,279**
TOTAL O&M COSTS				**$2,917,715**
Periodic Costs (from Alternative 2)				**$157,373**
Total Present Worth Project Costs				**$5,793,590**

Notes:

CY	=	cubic yard
EA	=	each
GET	=	general excise tax
O&M	=	operation and maintenance
LS	=	lump sum
LUC	=	land use control
QTY	=	quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars

2) Cap consists of a single layer soil cap and O&M includes 1% and 10% replacement of topsoil and vegetative cover, respectively

Site-Specific Assumptions

1) Costs include clear & grub for a continuous cap around contamination, as opposed to isolated pockets to cover "hot-spots" only

Appendix C.2
Site 21 Alternative Cost Estimates

Table C.2-1: Alternative 1 (No Action)

Component Description	Site 21			
	QTY	Unit	Unit Price	Component Cost
Capital Costs				
1. SVE System Removal				
Remove system and above-ground components	*None Exist On-site*			$0
Miscellaneous Allowance				$0
Subtotal				*$0*
Contingency				$0
Subtotal				*$0*
Project Managemet & Administrative Costs				$0
Subtotal				*$0*
Subtotal (including 4.00% Guam GET)				*$0*
Capital Costs of System Removal				**$0**
2. Well Abandonment				
Abandon Existing Wells	*Well IRP-21 exists on-site*			$0
Miscellaneous Allowance	*but will not be abandoned*			$0
Subtotal				*$0*
Contingency				$0
Subtotal				*$0*
Project Managemet & Administrative Costs				$0
Subtotal				*$0*
Subtotal (including 4.00% Guam GET)				*$0*
Capital Costs of Well Abandonment				**$0**
TOTAL CAPITAL COSTS				**$0**
O&M Costs				$0
Periodic Costs				$0
Total Present Worth Project Costs				**$0**
TOTAL PRESENT WORTH PROJECT COSTS				**$0**

Notes:

EA = each
GET = general excise tax
O&M = operation and maintenance
LS = lump sum
LUC = land use control
QTY = quantity

Table C.2-2: Alternative 2 (Soil Removal)

	Site 21			
Component Description	**QTY**	**Unit**	**Unit Price**	**Component Cost**
Capital Costs				
1. Well Abandonment (from Alternative 1)				**$0**
2. Source Removal - Excavate and Remove				
Mobilize and Site Preparation	1	LS	$10,946	$10,946
Clear & Grub	1	LS	$8,954	$8,954
MEC Oversight	1	LS	$187,091	$187,091
Excavate & Backfill	3,700	CY	$19	$70,300
Confirmation/Verification Sampling & Analysis	1	LS	$69,160	$69,160
Miscellaneous Allowance	10%			$34,645
Subtotal				*$381,096*
Contingency	10%			$34,645
Subtotal				*$415,741*
Project Managemet & Administrative Costs	10%			$34,645
Subtotal				*$450,387*
Subtotal (including 4.00% Guam GET)				*$468,402*
Capital Costs of Source Removal				**$468,402**
TOTAL CAPITOL COSTS				**$468,402**
O&M Costs				**$0**
Periodic Costs				**$0**
Total Present Worth Project Costs (per site)				**$468,402**

Notes:

CY = cubic yard
EA = each
GET = general excise tax
O&M = operation and maintenance
LS = lump sum
LUC = land use control
QTY = quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars
2) There would be no disposal cost or waste acceptance fee since wastes would be disposed of at an on-site consolidation unit

Site-Specific Assumptions

1) Costs include MEC oversight and removal during field activities
2) A hydraulic backhoe will be used for excavation

Table C.2-3: Alternative 3 (Physical Barriers/Soil Cap)

	Site 21			
Component Description	QTY	Unit	Unit Price	Component Cost
Capital Costs				
1. Well Abandonment (from Alternative 1)				**$0**
2. Cap/Containment - Capping				
Mobilize and Site Preparation	1	LS	$10,946	$10,946
Clear & Grub	1	LS	$8,954	$8,954
MEC Oversight	1	LS	$187,091	$187,091
Capping	1,544	CY	$88	$135,439
Miscellaneous Allowance	10%			$34,243
Subtotal				*$376,673*
Contingency	10%			$34,243
Subtotal				*$410,916*
Project Management & Administrative Costs	10%			$34,243
Subtotal				*$445,159*
Subtotal (including 4.00% Guam GET)				*$462,965*
Capital Costs of Capping				**$462,965**
3. LUCs				
Incorporate Restrictions into General Plan	1	LS	$10,000	$10,000
Delineate Area onto Master Planning Maps	1	LS	$10,000	$10,000
Update GIS Database with LUCs	1	LS	$10,000	$10,000
Communicate LUCs	1	LS	$10,000	$10,000
Subtotal				*$40,000*
Contingincy and Project Managemet & Administrative Costs	30%			$12,000
Subtotal				*$52,000*
Subtotal (including 4.00% Guam GET)				*$54,080*
Capital Costs of LUCs				**$54,080**
TOTAL CAPITOL COSTS				**$517,045**
O&M Costs				
1. Soil Cap O&M				
Annual Maintenance & Upkeep	1	LS	$3,732	$3,732
Subtotal				*$3,732*
Contingency and Project Management & Administrative Costs	30%			$1,120
Subtotal				*$4,852*
Subtotal (including 4.00% Guam GET)			*Annual Total*	*$5,046*
	Program total (with 3% Discount)			**$146,844**
2. LUC O&M Program Costs				
LUC Annual Training and Inspections (year 1 through year 30)				
Annual Training	8	HR	$100	$800
Annual Inspection and Reporting	1	LS	$14,000	$14,000
Subtotal				*$14,800*
Contingincy and Project Managemet & Administrative Costs	30%			$4,440
Subtotal				*$19,240*
Subtotal (including 4.00% Guam GET)			*Annual Total*	*$20,010*
	Program total (with 3% Discount)			**$582,279**
LUC O&M Program Costs (30 years)				**$729,123**

Component Description	Site 21			
	QTY	Unit	Unit Price	Component Cost
Periodic Costs				
1. Five-Year Reviews				
Five-Year Reviews (years 5, 10, 15, 20, 25, 30)	1	LS	$20,000	$20,000
Subtotal				*$20,000*
Contingincy and Project Managemet & Administrative Costs	30%			$6,000
Subtotal				*$26,000*
Subtotal (including 4.00% Guam GET)			*Evgent Total*	*$27,040*
	Program total (with 3% Discount)			**$157,373**
PERIODIC PROGRAM COSTS				**$157,373**
Total Present Worth Project Costs				**$1,403,541**

Notes:

CY	=	cubic yard
EA	=	each
GET	=	general excise tax
O&M	=	operation and maintenance
LS	=	lump sum
LUC	=	land use control
QTY	=	quantity

Primary Assumptions:

1) Costs are in 2009 U.S. dollars

2) Cap consists of a single layer soil cap and O&M includes 1% and 10% replacement of topsoil and vegetative cover, respectively

Site-Specific Assumptions

Site 03 1) Costs include clear & grub for a continuous cap around contamination, as opposed to isolated pockets to cover "hot-

Site 21 1) Costs include MEC oversight and removal during field activities