

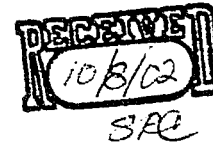


DEPARTMENT OF THE ARMY

IOWA ARMY AMMUNITION PLANT
17571 STATE HIGHWAY 79
MIDDLETOWN, IOWA 52638-5000

REPLY TO
ATTENTION OF

October 7, 2002



Installation Management Division

Mr. Scott Marquess
U. S. Environmental Protection Agency
Region VII
901 North 5th St.
Kansas City, Kansas 66101

Dear Mr. Marquess:

Reference Federal Facility Agreement (FFA) under CERCLA section 120, Administrative Docket Number: VII-F-90-0029 between the U.S. Environmental Protection Agency and the U.S. Army for Iowa Army Ammunition Plant.

Enclosed you will find one copy of the Draft Final Aerial Radiation Survey Work Plan. Mr. Brian Harcek will contact you on October 9, 2002 to set up a conference call if needed to gather final comments. The Army will provide the final Aerial Radiation Survey to the EPA on October 17, 2002. The Army intends to mobilize for this effort on October 21, 2002.

Copies of this letter have been sent to:

TechLaw Inc., Mr. Bryan Rundell, 6901 West 63RD Street, Suite 407, Overland Park, KS 66202

Deputy Assistant Secretary of the Army (ESOH), Attn: Mr. Richard Newsome/Mr. Jewel Simmons, 110 Army Pentagon, Washington DC 20310

✓ U.S. Army Corps of Engineers, CEMVS-PM, ATTN: Ms. Cotner, 8945 Latty Avenue, Berkeley, MO 63134 (4 Copies)

Iowa Department of Public Health, ATTN: Don Flater/Dan McGhee, Lucas State Office, Building, 321 East 12th Street, Des Moines, IA 50319-0075

Iowa Department of Natural Resources, ATTN: Dan Cook, Wallace State Office Building, 900 East Grand Ave., Des Moines, IA 50319

USAEC, ATTN: Mr. Derek Romitti, 5179 Hoadley Road, Aberdeen Proving Ground, MD 21010-5401

U.S. Fish and Wildlife, ATTN: Mike Coffey, 4469 48TH Avenue Court, Rock Island, IL 61201

U.S. Army Center for Health Promotion and Preventive Medicine, 5158 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5422

CF: Dell'Ono, Harcek,
Marilyn Cotner

Ms. Alison Hart, Senator Harkin's Office, 1606 Brady Street,
Suite 323, Davenport, IA 52803

American Ordnance, IAAAP, 17571 State Highway 79, Middletown, IA
52638-9701

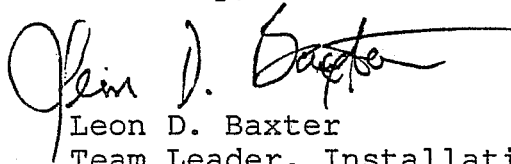
U.S. Army Operations Support Command, Mr. Jackson, 1 Rock Island
Arsenal, Rock Island, IL 61299-5500

U.S. Army Operations Support Command, SOSMA-PRG, ATTN: Mr. Toth,
1 Rock Island Arsenal, Rock Island, IL 61299-5500

U.S. Army Corps of Engineers, ATTN: K. Howe, 106 South 15th
Street, Omaha, NE 68102-4978

If you have any questions, please contact Mr. Rodger D.
Allison, rallison@americanordnance.com, Installation Management
Division, 319-753-7130.

Sincerely,

A handwritten signature in black ink, appearing to read "Leon D. Baxter", with a long horizontal flourish extending to the right.

Leon D. Baxter

Team Leader, Installation Management

Enclosure

Cotner, Sharon R MVS

From: Rodger Allison [RALLISON@americanordnance.com]
Sent: Monday, October 07, 2002 1:52 PM
To: daromitt@aec.apgea.army.mil; dan.cook@dnr.state.ia.us; Marquess.Scott@epamail.epa.gov; alison_hart@harkin.senate.gov; Don Flater; Dan McGhee; Dellorco, Lou; Cotner, Sharon R
Cc: Leon Baxter; Yolanda Dennis-Lowman; melenie.mutchler@mkmeng.com
Subject: Draft - Final Aerial Radiological Survey



Draft-Final Flyover.
WP.doc

Hello Everyone:

Attached is a copy of the cover letter you and others should received in the mail tomorrow or shortly thereafter with a copy of the subject document and response to comments of the Draft.

Rodger Allison
Restoration Program Manager
Iowa AAP
17571 Hwy 79
Middletown IA 52638-5000
319-753-7130
FAX 319-753-7601

Cotner, Sharon R MVS

From: Rodger Allison [RALLISON@americanordnance.com]
Sent: Monday, October 07, 2002 2:19 PM
To: daromitt@aec.apgea.army.mil; Randy Rohrman; Marquess.Scott@epamail.epa.gov; michael_coffey@fws.gov; Don Flater; Dan McGhee; Dellorco, Lou; Cotner, Sharon R; brundell@techlawinc.com
Cc: Leon Baxter; Yolanda Dennis-Lowman; dan.cook@dnr.state.ia.us; Jewell Simmons; melenie.mutchler@mkmeng.com; Brian Harcek; Howe, Kevin M; Onewokaec@osc.army.mil
Subject: Fwd: Draft-Final IAAAP Work Plan for IAAAP Aerial Radiological Survey



Draft-Final IAAAP
Work Plan

Hello Everyone:

Attached is the subject document and Resonse to comments of the Draft vesion in PDF Format. The cover letter was sent on a sepearte email.

Rodger Allison
Restoration Program Manager
Iowa AAP
17571 Hwy 79
Middletown IA 52638-5000
319-753-7130
FAX 319-753-7601

Cotner, Sharon R MVS

From: Williams, Gustavious P. [gpwilliams@anl.gov]
Sent: Monday, October 07, 2002 9:26 AM
To: Roger Allison (rallison@americanordnance.com)
Subject: Draft-Final IAAAP Work Plan



IAAAP_DraftFinal_WorkPlan.pdf



IAAAPCommentResponse10_04.pdf

Mr. Allison:

Attached is the Draft-Final version of the IAAAP Aerial Radiation Survey Work Plan in pdf format. Also attached is the Comment Response document for the Draft version of the work plan in pdf format.

Hard copies of these documents were sent via FedEx on Friday, October 4 and should arrive today, Monday October 7.

Please contact me if you have any questions.

Gus

Gus Williams, Ph.D. gpwilliams@anl.gov
(630) 252-4609 Argonne National Laboratory
(630) 252-3611 fax EAD-900, 9700 S Cass Ave
<http://www.ead.anl.gov> Argonne IL 60439

"A good decision is based on knowledge
and not on numbers."

Plato

Comments and Responses for the: Iowa Army Ammunition Plant (IAAAP) Aerial Radiation Survey Draft Work Plan

by
G.P. Williams
Geoscience and Information Technology Section
Environmental Assessment Division
Argonne National Laboratory,^a 9700 South Cass Avenue, Argonne, Illinois 60439

^aArgonne National Laboratory is operated by The University of Chicago under contract W-31-109-ENG-38,
for the U.S. Department of Energy.



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
1	Entire Document	ERAA should be ER,A This error occurs throughout the document.	BH	Concur. The change has been made.	GPW
2	1/abstract/1	In the first sentence, radioisotopes is spelled incorrectly	BH	Concur. The change has been made.	GPW
3	3/1.1/2	The entire plant will be surveyed. With that in mind, recommend the removal of the statement "a selected portion of".	BH	Concur. The change has been made.	GPW
4	4/1.1/1	This paragraph needs to be re-written to include Pu and Cs-137. The reference to "fission products" is fine, however, we need to specify the radioisotopes of concern. Remove the statement " The primary concern is DU."	BH/SC	Concur. The change has been made.	GPW
5	4/1.2/4 th bullet	The known sources of DU were to be placed and flown over at RSL, not the IAAAP. Please correct the location	BH	Concur. The change has been made.	GPW
6	5/1.2.2/1	The area of the IAAAP is 30 mi ² , not 38 m ² . The flight line spacing is to be 200 feet, not 100 feet. This particular error occurs elsewhere in the document. Please correct.	BH	Concur. The change has been made.	GPW
7	5/1.2.1/2	Please add Pu-239 to the list of potential contaminants.	BH	Concur. The change has been made.	GPW
8	5/1.2.1/3	Please add Pu-239 results and map to the list.	BH	Concur. The change has been made.	GPW
9	5/1.2.2/1	Please add Pu-239 to the list.	BH	Concur. The change has been made.	GPW
10	5/1.2.3/1	Please add Pu-239 to the list.	BH	Concur. The change has been made.	GPW
11	6/1.2	Section 1.2 is in the document twice	BH	Concur. The change has been made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
18	17/2.1.3/1	The concentration listed has the incorrect units. It should be microcuries per mL, not curies per mL.	BH	Non-concur. The value of 5×10^{-13} appears to be in the range of curies. This value would be considerably below the detection capability of today's equipment if it were microcuries. No change made.	GPW
19	20/2.5/1	The issue is UXO. This was a concern for the survey team from St. Louis, is this also a concern for the Aerial Survey Team seeing that they will not be doing any invasive sampling?	BH	Concur. The change has been made. The text was left, but modified because HPG shots will be taken on the ground.	GPW
20	22/3.5/1	The last sentence needs to be reworded to clarify that the current FFA the entire plant area, including the areas where the AEC operated, but not necessarily the clean-up of these areas by programs other than ER,A.	BH	Concur. The change has been made.	GPW
21	27/5.4.1/2	The spacing of the flight lines is 200 feet, not 100 feet.	BH	Concur. The change has been made.	GPW
22	27/5.4.1/3	Need to discuss how the test line location will be determined.	BH	The test line location will be chosen by the RSL mission scientist at the time of the flights. No change made.	GPW
23	28/5.4.3/1	Need to add Pu-239.	BH	Non-concur. In-situ gamma spec measurements cannot detect Pu-239.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
		regulatory review and a final work plan. Other activities included under this task include meetings and/or conference calls with the regulators and stakeholders to resolve questions on the draft plan as well as participation in coordination and planning meetings, conference calls and site visits as determined necessary by the Iowa AAP Project Manager.”			
29	39/6.1/1	In the second sentence, delete the portion of the sentence, following “...successful survey.” The new 2 nd sentence will read, “The DQO process provides a systematic approach for defining the criteria necessary for a successful survey.”	SC	Concur. The change has been made.	GPW
30	39/6.1/2	The 3 rd sentence needs to be re-written. Suggest “Because the IAAAP aerial radiological survey is being conducted in support of the early phases of site investigation, the DQOs outlined in this document focus on supporting initial site investigation decisions.”	SC	Concur. The change has been made.	GPW
31	40/6.1.2/1	2 nd sentence needs to clarify that the survey assist with ER, A delineation and show areas that are an immediate danger to human health.	SC	Concur. The change has been made.	GPW
32	41/6.1.5/2	Add a decision rule to account for the condition of no-anthropogenic gamma-emitting radionuclide found and the implications of this for immediate danger to human health or the environment.	SC	Concur. The change has been made.	



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
39	4/1.1/1	Please remove the sentence that says DU is the primary concern. Should Plutonium be listed here?	RA	Concur. The change has been made.	GPW
40	5/1.2.1/1	The first sentence should read 30 square miles. The nominal spacing between flight paths will be 200 feet.	RA	Concur. The change has been made.	GPW
41	6/1.2.4.1/1	Anticipated uses of survey results will be provided in a separate letter from FUSRAP. Remove reference to this in the sentence.	RA	Concur. The change has been made. This paragraph was changed per other comments and no longer makes reference to survey data uses.	GPW
42	6/1.2.4.3/1 and 2	Please change Army OSC PM to Iowa AAP Project Manager.	RA	Concur. The change has been made.	GPW
43	6/1.2/1	The plant is located on approximately 19,015 acres.	RA	Non-concur. No change was made.	GPW
44	7/1.3/1	The plant is located on approximately 19,015 acres. On page 3 it states 1,900 acres were used by AEC. On page 7 and 9 it states 1,630 acres of the plant were impacted by AEC. Should these numbers be the same? Which one is correct?	RA	Partially concur. 1,630 was replaced with 1,900. 19,000 was not changed to 19,015.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
51	24/5.1/2	Is there a standard height above the "condition or topography" that data will be gathered?	RA	As noted numerous places in the document, including the paragraph referred to by this comment, the survey elevation will be 100-feet above ground level. No change made.	GPW
52	24/5.1/4	Will physical samples be taken during the ground-truthing process?	RA	Gamma spectroscopy measurements will be made per section 1.2.2, but no physical samples will be taken. No change made.	GPW
53	27/5.4/2	The nominal spacing between flight paths will be 200 feet.	RA	Concur. The change has been made.	GPW
54	27/5.4/3	How will the location of the test line be determined? What are the criteria?	RA	The test line will be chosen on-site by the RSL mission scientist. No change was made.	GPW
55	28/5.4.3/1	How will the ground-truth measurement locations be selected?	RA	Locations will be selected on the basis of preliminary aerial results, terrain conditions, and ease of access. No change was made.	GPW
56	40/6.1.1/1	Please change the first problem to read: determine if anomalies associated with man-made gamma emitting radionuclides are present and may warrant further investigation.	RA	Concur. The change has been made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
				<p>The data analysis procedures presented in Section 5 describes how the data will be processed in a different manner than typical gamma walkover data. No "background" count rate will be used. Rather energy ratios, isotopic windows, and other means will be used to extract information on the presence or absence of anthropogenic isotopes. This approach accounts for the effects of minor changes in shielding, such as that from vegetation.</p> <p>This approach to data collection and analysis can identify anthropogenic anomalies in areas that have low gross (or total) count rates that would typically indicate only background contributions.</p> <p>For this project, the equipment description combined with the flight parameters are analogous to the field data collection portion of a DQO plan, while the data analysis equations that are presented are analogous to laboratory procedures presented in a typical DQO plan.</p> <p>No change made.</p>	



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
61	General	There is no discussion of weather contingencies. What are the environmental parameters the on-site project manager will evaluate to determine whether the survey will proceed? Who will make the determination that the helicopter will fly?	IDPH	Concur. A discussion has been added to Section 8.	GPW
62	General	How many consecutive, or total, "non-flight" days must pass before the decision to end the survey is made?	IDPH	Concur. The change has been made. Descriptions of the procedures and who has the authority for making this decision has been added to Section 8	GPW
63	General	If the aircraft is grounded after it has begun its day's work, how and at what point is the survey re-initiated.	IDPH	Concur. The change has been made. Descriptions of the procedures and who has the authority for making this decision has been added to Section 8	GPW
64	1/Abstract/1	The word "characterize" has specific meaning in the "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)." This survey is not a characterization in the MARSSIM sense. Therefore, since the first paragraph of this section contains two forms of this word, we recommend that "characterization" be changed to "assessment" and "characterized" to "assessed."	IDPH	Concur. The change has been made.	GPW
65	1/Abstract/2	The second paragraph indicates an altitude of 100 ft. This should be 200 ft.	IDPH	This comment has been deleted at the request of D. McGhee per phone con held 30 September 2002, 1305. Please disregard.	BH



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
72	4/1.2/2	The second paragraph of this section does not include Am-241 as an indicator of plutonium. We recommend that it be included.	IDPH	Concur. The change has been made.	GPW
73	5/1.2.4.1/1	This section refers to the "U.S. Army Operations Support Command Project Manager." It is not clear that the Restoration Project Manager at IAAAP holds this position.	IDPH	Concur. The title has been changed to IAAAP Restoration Program Manger.	GPW
74	6/1.2.4.3	The first paragraph of this section contains the word "conclusions." This may also cross those boundaries to which we alluded in a previous comment. For purposes of this survey there seem to be only two direct conclusions and one corollary conclusion; i.e., anthropogenic anomalies are present or they are not. If they are present, then do they pose an immediate danger to human health and safety? We recommend that "conclusions" be eliminated.	IDPH	Concur. The change has been made.	GPW
75	7/1.3.1/1	We recommend changing the name of this section to "State of Iowa Licenses for DU Operations."	IDPH	Concur. The change has been made.	GPW
76	7/1.3.1/1	We recommend changing the phrase "superceded by," in the second sentence, to the phrase "terminated and issued as."	IDPH	Concur. The change has been made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
79	12/2.1.1/5	The last paragraph on Page 12 contains the following sentence. "There is little chance of leakage of radioactive materials or chemicals from the physics packages." This statement is speculative and editorial. We recommend that it be removed.	IDPH	Concur. The change has been made.	GPW
80	13/2.1.1/1	The last sentence in the first paragraph on Page 13 is speculative and editorial. We recommend that it be removed.	IDPH	Concur. The change has been made.	GPW
81	13/2.1.1/4	<p>The fourth sentence in the fourth paragraph on Page 13 contains the phrase "...no real property contained residual radioactive contamination above standards." The following is a quote contained in a letter from the Plant Manager to the Contracting Officer:</p> <p><i>All buildings that were involved in the radioactive material operations have been surveyed with no detectable levels above background obtained. The only real property with contamination above background levels is the FS-12 area....</i></p> <p>We recommend that the sentence be changed to reflect the information in the letter.</p>	IDPH	Concur. The change has been made.	GPW
82	14/2.1.1.1/1	The survey discussed took place in June 2000 not November 2000.	IDPH	Concur. The change has been made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
86	17/2.1.3/1	The first paragraph on Page 17 contains a discussion of an EPA visit to IAAAP in 1977. Although the statement about "no radioactivity of concern exists" appears in the trip report, this conclusion was drawn in the absence of any record review. It also may have been true for the era, but is not today, especially in light of the next comment. We recommend that this discussion be removed.	IDPH	Non-concur. Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders. No change was made.	GPW
87	17/2.1.3/1 and 2	The remainder of the discussion in the first paragraph of Page 17 concerns DU at FS-12. The discussion implies that the soil removal in 1974 remediated the surface DU issue and draws the conclusion that DU at FS-12 today is the result of subsurface deposition working its way to the surface. A September 1974 report shows DU levels at FS-12 consistent with those determined by the 2001 walkover. We recommend that this discussion be changed to reflect the 1974 survey results.	IDPH	Non-concur. Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders. No change was made.	GPW
88	20/2.3/1	The last sentence of the last paragraph on Page 19 contains the phrase "albeit low." This is speculative and editorial and we recommend its removal. (This comment refers to the first paragraph on page 20, section 2.3 BH)	IDPH	Concur. The change has been made. Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
91	Editorial Comments	<p>Although the values are identified for change, we will list all references to a helicopter altitude of 100 ft., which should be 200 ft, and a line spacing of 100 ft, which should also be 200 ft.</p> <ol style="list-style-type: none"> 1. Page 5, first paragraph—two references 2. Page 24, second paragraph 3. Page 26, fourth paragraph 4. Page 27, first paragraph 5. Page 27, second paragraph 6. Page 42 footnote “a” to Table 6.1—two references 7. Page 45 footnote “a” in Table 6.2—this comment is not applicable if this table is for only illustrative purposes and is not specific to the current project 	IDPH	<p>This comment when in reference to the altitude has been deleted at the request of D. McGhee per phone conversation held September 30, 2002, 1305. Please disregard.</p> <p>No change was made.</p>	BH
92	1/Abstract/2	The introductory sentence of the second paragraph is redundant. We recommend deleting that sentence and changing the next one to read, “The Bell 412, twin-engine helicopter will fly...”	IDPH	Concur. The change has been made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
98	General	Since a revision to this Work Plan is anticipated, it should be entitled as a "Draft" Work Plan, with a subsequent "Draft Final" to be prepared and submitted for review.	EPA	Concur. The change has been made. The text "Draft Final" has been added to the cover page.	GPW
99	General	The Work Plan contains little detail as to how the flyover will be executed at the IAAAP. Most of the IAAAP-specific information included in the Plan is background information. Few details are provided regarding exact procedures and methods that will be employed to conduct the survey and to insure that data of known and usable quality is generated.	EPA	Non-concur. Section 5 details the field data collection procedures that will be used at IAAAP. Section 5 details the data analysis methods that will be used. Section 6 details the methods that will be used to estimate detector sensitivities. The procedures and methods for data collection and analysis are presented in detail in Section 5. The equipment that will perform the survey was also presented. See responses #58 and #59. No change was made.	GPW
100	General	Community relations efforts associated with the survey should be considered by the Army. This would include issuing a "fact sheet" and identifying specific points of contact within the Army for the public during the conduct of the survey.	EPA	Concur. Community relations efforts will be conducted by the installation PAO in accordance with the existing community relations plan. No change was made.	RA



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
104	3/1.1/1	<p>The Plan indicates that the survey objective is to identify areas that have been affected by a radiological release and to help identify areas that have not been affected by such releases. The qualitative and quantitative criteria that would be used in determining that areas have been unaffected by radiological releases should be discussed in the Plan, or in separate correspondence, as was discussed in our meeting on September 19, 2002.</p> <p>The purpose of the survey is not limited to identification of only gamma-emitting radioisotopes, but includes identification of all of the radiological contaminants of concern for the IAAAP.</p> <p>As noted in the third paragraph of this section, the Plan objectives should be clarified as being limited to identification of surface radioactivity.</p>	EPA	<p>The USACE will provide a written response to this comment as was decided at the meeting held with the stakeholders on 19 September 2002.</p> <p>The AMS used for this survey is only capable of detecting gamma emissions.</p> <p>The presence of non-gamma emitting radionuclides may be inferred by the presence of their progeny, although not directly detected. For example, Pa-234m is used for DU, and Am-241 for Pu.</p> <p>The document notes that only gamma-emissions that are not shielded from the detectors can be identified.</p> <p>No change made.</p>	BH GPW
105	3/1.1/4	The last sentence discussing FUSRAP and DERP responsibilities could be a matter of debate, does not contribute substantively to the Plan, and should be deleted.		<p>Non-concur.</p> <p>No change was made.</p>	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
110	7/1.3.1/1	Areas where licensed DU operations are occurring should be identified on a figure in anticipation of possible detections during the survey.	EPA	The entire post will be surveyed, and no areas will receive preferential treatment. In addition, evaluating the aerial data without the analyst having pre-conceived ideas of which areas might be impacted serves as a quality assurance procedure.	GPW
111	8/1.3.6/1	The Indiana Bat has been found on IAAAP property.	EPA	Concur. The change has been made.	GPW
112	11/2.1	The information included in this brief review of historic use of radiological materials at the IAAAP is helpful in understanding some aspects of the site. Please be advised, however, that EPA will expect that a much greater level of detail be provided in the Historical Site Assessment.	EPA	Partially concur. The Historical Site Assessment is not being addressed as part of the aerial radiological survey. No change made.	GPW
113	11/2.1.1/2	Please clarify whether AEC operated exclusively at Line 1 from 1947-1975. It appears that Army operations may have been conducted simultaneously. The Plan indicates that AEC surveys performed in 1975 indicated that no contamination was present at Line 1 above background levels. Since no details of the surveys are provided, and since subsequent surveys have found detectable levels of radioactive materials above background,	EPA	The US Army and AEC operated concurrently in different portions of the line. Non-concur. No change was made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
		indoor samples at Line 1 to Army or AEC operations was not specified in the DOE report. This information should be provided.			
115	14/2.1.2/2	It is our understanding that the EBP is no longer a viable treatment unit at the IAAAP.	EPA	Concur. Comment noted.	GPW
116	15/2.1.2/3	Please provide the records that clearly indicate that the Army disposed of far greater quantities of wastes at the EDA than did AEC. If this is the case, it is unclear why any further restoration efforts at the site (particularly the West Burn Pads Area) would be addressed under the FUSRAP.	EPA	Non-concur. Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders. No change was made.	GPW
117	15-18/2.1.3	The nature of "radiological materials" referenced in this section should be clarified.	EPA	Dod policy is to neither confirm nor deny the presence of nuclear weapons. No change was made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
121	19/2.2/1	The Plan says that all of the FS sites, except FS-12, have been used by the Army for similar activities as conducted by AEC. We do not believe that the Army has conducted hydroshot testing at FS-12, but FS-12 has been used by the Army for testing of non-radiological components, and the landscape at FS-12 has apparently been altered due to Army operations.	EPA	Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders. No change made.	
122	20/2.3/1	The Plan should indicate that some interviewees have raised the possibility of a "blue flash" occurring at IAAAP, and that it has been postulated that this blue flash may have been associated with a critical or sub-critical incident. We are not aware that this information obtained from interviews has been substantiated in any records reviewed. This information is important in the identification of COCs. Further, the Plan should be amended to indicate that plutonium has been reported as being managed as a waste at the IAAAP in historical records (i.e. the DOE "box of documents").	EPA	Non-concur. Please note that the sentence in question was taken from the Final FUSRAP Preliminary Assessment (December 2001), which was reviewed by site regulators and stakeholders. As noted in Section 5, the data analysis will identify any gamma emitting radioisotope detected by the system, regardless of whether it is on a COPC list. No change made.	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
126	24/5.1/3	The text indicates that measurements will be made to determine cosmic and atmospheric contributions to the radiation background. While there are instruments that will allow the determination of the contribution to radon, it is not clear what instrumentation will measure only cosmic/atmospheric radiation and can separate this radiation from radiation from the ground surface. This should be clarified.	EPA	<p>Non-concur.</p> <p>The procedures used for this measurement, an altitude spiral, are discussed in Section 5.</p> <p>The detectors are quickly shielded from terrestrial gamma emissions by the atmosphere. By using an elevation/count curve over the test line, the cosmic contribution can be determined. The energy spectrum measurements can also be used to separate out the atmospheric radon contribution from the cosmic contribution if needed.</p> <p>No change made.</p>	GPW
127	25/5.3/1	Since DU and plutonium are COCs at the IAAP and are primarily alpha emitters, the means by which the survey will detect these contaminants should be discussed.		<p>Partially concur. The discussion was modified to more clearly indicate that Am-241 and Pa-234m would be used as indicators of Pu and DU, respectively.</p> <p>As discussed in Section 5 and 6, these isotopes will be identified by their progeny.</p> <p>DU will be detected by the presence of Pa-234m, and Pu will be detected by the presence of Am-241.</p>	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
131	28/5.5/1	<p>The text indicates that several factors will result in shielding of radiation, including plowed soils and trees. The IAAAP has numerous heavily wooded areas, including the area surrounding FS-12. The trees will result in a decrease in sensitivity. How will the presence of this shielding be incorporated into the survey? In effect, in heavily wooded areas, or areas that have been disturbed, the flyover may only be useful in detecting potential COPCs if the ground radiation readings are extremely high. The flyover may not be able to detect areas that are actually elevated above acceptable levels but are being shielded due to external factors. This should be discussed. In addition, an uncertainties section should be included in the report.</p> <p>Please clarify that the sources to be used in determining the instrument sensitivities will be NIST-traceable sources.</p>	EPA	<p>Non-concur.</p> <p>As discussed in Section 5, the detection of anthropogenic radio isotopes does not depend on a "count rate above background." Instead, energy ratios for the natural spectrum gamma emission environment at IAAAP will be determined from site-specific data. Changes in these ratios will be used to identify anthropogenic anomalies.</p> <p>Using this approach, minor changes in shielding, (i.e., fall vegetation) do not significantly affect the ability of the system to identify anomalies, although these areas may be identified in the gross count rates. Extensive field surveys over the last 40+ years have demonstrated that even when gross count rates change over an area by orders of magnitude, these energy ratios remain relatively constant. This allows statistical procedures to be used to identify the areas that appear anomalous. The nature of the anomaly can be inferred from the energy spectrum data and the data reduction algorithm that was used in the analysis procedure. These procedures and equations are presented in Section 5. The final report will provide examples of the procedures</p>	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
133	Various/6.1/Various	DQOs should include quantitative statements. The Plan includes minimal quantitative statements.	EPA	<p>Non-concur.</p> <p>Section 6 contains the tables, equations, and calculations discussed during the conference call on September 9. The survey is designed to identify anomalies that might be indicative of anthropogenic releases of radioisotopes. It is in some respects a qualitative survey. Many of these issues cannot be resolved until the data are collected and analyzed.</p> <p>The EPA suggests that the DQO process can be used in preliminary investigations in a qualitative manner, as is being done here.</p> <p>The following quote is taken from <i>Data Quality Objectives Process for Hazardous Waste Site Investigations EPA QA/4-HW</i>, EPA/600/R-00/007, January 2000:</p> <p><i>“Although this guidance primarily addresses environmental data collection during intensive investigations such as RFIs and RIs, other stages of data collection operations during hazardous waste site investigations (e.g., site assessment phases, remedial operations) can find value in using this guidance. However, investigators may need to adapt the DQO Process to their specific problem. For example, during early site assessment phases, where investigators generally examine existing site information and conduct site reconnaissance, planning teams can benefit from the qualitative DQO</i></p>	GPW



Comment No.	Page/ Section/ Paragraph	Comment	Initials	Response	Initials
		utility of the data for making quantifiable statements related to determining affected and unaffected areas.		documented in Equations 10 and 11 and Table 6.2 (now Table 4).	
		The basis for the MDA levels depicted in Table 6.1 should be clarified. We had previously understood that this MDA was based on the IAAAP survey altitude of 100 feet AGL, yielding a detector "field of view" of approximately 200 feet. This field of view would translate into a "source radius" of approximately 65 meters. Table 6.2 would indicate a "correction factor" for Pa-234 of between 1.31 and 1.99 for this source radius. We are concerned that the information in Table 6.1 is not representative of the conditions planned for this survey.		Table 6.2 (now Table 4) is based on the flight parameters established for this survey.	
		Table 6.2 should be discussed further. Our understanding is, for example, that for a uniformly distributed area of DU soil contamination of a 3 meter radius, the MDA would be 9000 pCi/g (40 X 225). This MDA is outside of the risk range shown on Table 6.1.		<p>"Field of view" areas are approximate. The detectors actually see to the horizon, but the majority of the field of view is within a circle with a radius of approximately 200 feet at 100 ft AGL. This is discussed in Section 6.2.</p> <p>Table 6.2 (now Table 4) was calculated using the procedures presented in detail in the text preceding the table and the equations used to generate the table, Eqs. 10 and 11, are also presented. Parameters that reflect the site conditions and survey methods that will be used at IAAAP were used to generate the values in Table 6.2 (now Table 4).</p> <p>The risk values shown in the table are for comparison purposes only. These values have no effect on the MDA of the AMS.</p> <p>No change was made.</p>	

