DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Eaker AFB
Facility Address:	P O Box 9400, Gosnell, AR 72319-0400
Facility EPA ID #:	AR8571924473

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

X_____ If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			
Air (indoors)[2]				
Surface Soil (e.g., <2 ft)	X			
Surface Water				
Sediment				
Subsurf. Soil (e.g., >2 ft)				
Air (outdoors)				

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Please refer to attached Tables 1 & 2

TABLE 1

CHEMICALS OF POTENTIAL CONCERN

RCRA Corrective Measures Study

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,4-Trimethylbenzene
1,2-Dichloroethene
1,2-Dichloroethene (total)
1,3,5-Trimethylbenzene
2,4-D
2,4-Dimethylphenol
2-Methyl Naphthalene
4,4'-DDD
4,4'-DDE
4,4'-DDT
4-Methyl-2-pentanone
Acetone
alpha-BHC
Aluminum
Anthracene
Antimony
Arsenic
Barium
Benzene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Beryllium
beta-BHC
Bis(2-ethylhexyl)phthalate
Cadmium
Chlordane
Chlorobenzene
Chloroform
Chromium III
Molybdenum
Chromium VI
N-Nitrosodiphenylamine
Chrysene
Naphthalene
cis-1,2-Dichloroethene
Nickel
Copper
Nitrate
delta-BHC
Nitrobenzene
Di-n-octyl phthalate
o-Xylene
Dibenz(a,h)anthracene
p-Chloroaniline
Dieldrin
p-Cresol
Dimethoate
p-Dichlorobenzene
Disulfoton
PCB-1260
Endrin
Pentachlorophenol
Ethylbenzene
Phenanthrene
Fluoranthene
Phorate
Fluoride
Pyrene
gamma-BHC
Selenium
Heptachlor epoxide
Styrene
Indeno(1,2,3-cd)pyrene
Tetrachloroethene
Iron
Thallium
Lead
m-Xylene
Manganese
MCPA
MCPP
Mercury
Methyl parathion
Methylene chloride
Toluene
Trichloroethene
Vanadium
Vinyl chloride
Xylene (total)
Zinc

Please refer to the Eaker AFB Risk Assessment for cleanup levles

TABLE 2
SWMU AND AOC STATUS
CORRECTIVE MEASURES STUDY
BAKER AIR FORCE BASE

Unit Site Name Recommendation

Sites Recommended for No Further Action in the RFA

SWMU No.10 Hospital Incinerator NFA
SWMU No.11 Satellite Waste Accumulation Points NFA
SWMU No.15 Electronic Environmental Room NFA
SWMU No.16 Aerospace Ground Equipment Shop NFA

Other Sites Removed from Further Evaluation

SWMU No.7 Defense Reutilization Marketing Office Storage Facility RCRA Closure Plan Submitted and is under review by ADEQ & EPA
SWMU No.8 Explosive Ordnance Disposal Area RCRA Closure Plan Submitted and is under review by ADEQ & EPA
SWMU No.19 Silver Recovery Units Recovery Units Removed
AOC No. 6 Spill Site No. 3 Decision Document Submitted
AOC No. 8 Wastewater Treatment Plant Outfall Covered Under NPDES Permit

Sites Recommended for No Further Action in the RFI

SWMU No.12 Auto Hobby Shop NFA
SWMU No.18 Wastewater Treatment Plant NFA
AOC No. 7 Deicer Solution Impoundments NFA
AOC No. 9 Sanitary Sewer System NFA

Sites Requiring CMS Action

SWMU No. 1 Fire Protection Training Area CMS Evaluation
SWMU No. 2 Underground Waste Oil Tanks CMS Evaluation
SWMU No. 3 Landfill No. 1 CMS Evaluation
SWMU No. 4 Landfill No. 2 CMS Evaluation
SWMU No. 5 Landfill No. 3 CMS Evaluation
SWMU No. 6 Landfill No. 4 CMS Evaluation
SWMU No. 9 Bulk Fuel Storage Tank Farm CMS Evaluation
SWMU No.13 Roads and Grounds Maintenance Facility CMS Evaluation
SWMU No.14 General Vehicle Maintenance Facility CMS Evaluation
SWMU No.17 Oil/Water Separators CMS Evaluation
SWMU No.20 Corrosion Control Facility CMS Evaluation
SWMU No.21 Base Exchange Shoppette CMS Evaluation
AOC No. 1 Underground Storage Tanks CMS Evaluation
AOC No. 2 Flightline Hydrocarbon Transfer System (JP-4 Piping) CMS Evaluation
AOC No. 3 Pesticide Storage and Mixing Area CMS Evaluation
AOC No. 4 Spill Site No. 1 CMS Evaluation
AOC No. 5 Spill Site No. 2 CMS Evaluation

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. **Are there complete pathways between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?**

Summary Exposure Pathway Evaluation Table

Potential Human Receptors (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	___	___	___	___			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)				___			___
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

YE_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways). **Administrative Controls and Monitoring**

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1)

greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing <u>and</u> referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__YE_ - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the ___Eaker AFB_____ _____facility, EPA ID # _AR8571924473_____, located at _Blytheville, AR_____ under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

_____ IN - More information is needed to make a determination.

Completed by (signature) Ali Dorobati Date 9/6/01
(print) Ali Dorobati
(title) Engineer

Supervisor (signature) Daniel J. Clanton Date 9/6/01
(print) Daniel J. CLANTON
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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.