



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

MEMORANDUM

SUBJECT: Fourth Five-Year Review Cornhusker Army Ammunition Plant Site
Grand Island, Nebraska, NE2213820234

FROM: Bill Gresham, Remedial Project Manager
Federal Facilities and Post Construction Section

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Gresham, Bill
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THRU: Cody McLarty, Acting Chief
Federal Facilities and Post Construction Section

Lynn M. Juett, Chief
Site Remediation Branch

TO: Mary P. Peterson, Director
Superfund and Emergency Management Division

Attached is the Draft Final Fourth Five-Year Review (FYR) Report, dated May 20, 2020, submitted by the U.S. Army Corps of Engineers (USACE) for the Cornhusker Army Ammunition Plant (NE2213820234). This site is comprised of five Operable Units (OUs): OU 1 consists of the on-site and off-site explosives contaminated groundwater plumes; OU 2 consists of the Administrative and Base Housing Areas, Abandoned Burning Area, drainage ditches, Magazine Areas, Miscellaneous Storage Areas, and Sewage Treatment Plants; OU 3 consists of the Pistol Range, Nitrate Area, Shop Area, and Sanitary Landfill; and OU 4 consists of the unsaturated soil zone of Load Lines 1 through 5 and the Gravel and Clay Pit Area. OU 5, which consists of the Pistol Range Area Sites (Firing Range and Static Ejection Test Site), the Burning Grounds, and the Fuze Destruction Areas on Tracts 19B and 20B, does not yet have a remedy and is thus not covered by this FYR.

The USACE provides the following protectiveness statements in the Draft Final Fourth FYR Report:

OU 1

The remedy at OU 1 is protective of human health and the environment.

Operation of the Groundwater Treatment Facility has been effective at reducing groundwater contaminants on site. Operation of the groundwater extraction well EW-7 has been effective in preventing migration of explosives in groundwater off site. Groundwater analytical results from the on-site monitoring wells show decreasing trends, and groundwater analytical results observed in all off-site monitoring wells are below corresponding remedial goals. On-site institutional controls, including deed



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restrictions, prohibiting water supply well drilling in the impacted area, and enforcing the Hall County Reuse Plan, have been enforced since the Third Five-Year Review. No new domestic or irrigation wells were installed within the OU 1 plume boundaries. Off-site institutional controls, including providing municipal water supply to all impacted residents, informing the public through Public Meetings, and establishing a City “Overlay Zone” Ordinance prohibiting drinking water supply well drilling in the impacted areas, are all ongoing.

OU 2

The remedy at OU 2 is protective of human health and the environment.

There have been no changes in site conditions or assumptions that went into selecting no further action at OU 2.

OU 3

The remedy at OU 3 is protective of human health and the environment.

Excavation and off-site disposal of contaminated soil has been achieved, and continued LTM indicates VOCs show a decreasing trend at the Shop Area AOC. Deed restrictions prevent residential use and are documented in real estate transactions. The remedial goals specified in the ROD continue to be within the acceptable Cancer Risk range of 10⁻⁶ to 10⁻⁴. There has been no change to the standardized risk assessment methodology that could affect the protectiveness of the remedy.

OU 4

The remedy at OU 4 is protective of human health and the environment.

Deeds for the OU 4 properties restrict land use to commercial, industrial, and agricultural and do not permit residential use of the land, and visual observation of the property during the site inspection confirmed no private residences, and the land is currently being used for agricultural or industrial purposes.

The EPA provided several significant comments to the draft final FYR report (see attached July 16, 2020 EPA Comment Letter) that relate to the protectiveness of the OU 1, 2, 3 and 4 remedies. Because some of the review comments relating to OU 1, 2, 3 and 4 have not been resolved, it is necessary for the EPA to provide an independent assessment of the protectiveness of the remedy for each of the OUs outlined in the draft final FYR for the Cornhusker Army Ammunition Plant site.

Construction is not complete at this site, so a sitewide protectiveness determination is not required. The EPA provides the following independent protectiveness statements:

OU 1

The EPA is making an independent assessment of the protectiveness of “deferred protectiveness.”

A protectiveness determination of the OU 1 remedy at the Cornhusker Army Ammunition Plant site cannot be made until further information is obtained. Further information is

necessary to evaluate whether detections of perchlorate in the groundwater represent the presence of an additional contaminant of concern (COC).

OU 2

The EPA is making an independent assessment of the protectiveness of “deferred protectiveness.”

A protectiveness determination of the OU 2 remedy at the Cornhusker Army Ammunition Plant site cannot be made until further information is obtained. The 1996 Ecological Risk Assessment (ERA) was conducted prior to the development of the Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments – Interim Final (EPA, 1997), and although significant ecological risk was found, ecological action levels for the site were never developed. Although habitat quality may be sufficiently degraded in some areas such that the exposure assumptions used in this evaluation are warranted, there is substantial uncertainty regarding potential ecological risk at this site.

OU 3

The EPA is making an independent assessment of the protectiveness of “deferred protectiveness.”

A protectiveness determination of the OU 3 remedy at the Cornhusker Army Ammunition Plant site cannot be made until further information is obtained. The 1996 ERA was conducted prior to the development of the Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments – Interim Final (EPA, 1997), and although significant ecological risk was found, ecological action levels for the site were never developed. Although habitat quality may be sufficiently degraded in some areas such that the exposure assumptions used in this evaluation are warranted, there is substantial uncertainty regarding potential ecological risk at this site.

OU 4

The EPA is making an independent assessment of the protectiveness of “deferred protectiveness.”

A protectiveness determination of the OU 4 remedy at the Cornhusker Army Ammunition Plant site cannot be made until further information is obtained. The 1996 ERA was conducted prior to the development of the Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments – Interim Final (EPA, 1997), and although significant ecological risk was found, ecological action levels for the site were never developed. Although habitat quality may be sufficiently degraded in some areas such that the exposure assumptions used in this evaluation are warranted, there is substantial uncertainty regarding potential ecological risk at this site.

The EPA made the above protectiveness determination after considering issues identified during the review of the Draft Final Fourth FYR Report. Specifically, some of the identified issues related to the absence of information needed for the EPA to be able to fully determine whether the OU 1, 2, 3 and 4 remedies are protective.

Also related to OU 1, institutional controls are in place to provide protection from potential exposure to contaminated groundwater. However, those institutional controls have not completely prevented irrigation wells from being installed in the affected areas. At this point, this does not adversely affect the protectiveness status of OU 1 but can be categorized as an “other finding.”

The EPA provides the following independent issues and recommendations:

OU 1

OU(s): 01	Issue Category: Monitoring			
	Issue: Perchlorate was detected in 2016 at two wells. One well, G0103, had a detection of 44.9 µg/L, which exceeded both the EPA perchlorate Maximum Contaminant Level Goal (MCLG) and the Nebraska Voluntary Cleanup Program Remedial Goal of 15 µg/L. It is unclear whether perchlorate contamination is still present at similar, lesser or greater concentrations.			
	Recommendation: Follow-up sampling and evaluation should be conducted to determine whether perchlorate contamination in groundwater represents a persistent threat.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	USACE	EPA	9/14/2022

OU 2

OU(s): 02	Issue Category: Remedy Performance			
	Issue: The FYR relies upon information from a 1996 ecological risk assessment. Subsequent guidance for conducting ecological risk assessments has been issued.			
	Recommendation: An updated ecological risk assessment should be performed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	USACE	EPA	9/14/2022

OU 3

OU(s): 03	Issue Category: Remedy Performance			
	Issue: The FYR relies upon information from a 1996 ecological risk assessment. Subsequent guidance for conducting ecological risk assessments has been issued.			
	Recommendation: An updated ecological risk assessment should be performed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	USACE	EPA	9/14/2022

OU 4

OU(s): 04	Issue Category: Remedy Performance			
	Issue: The FYR relies upon information from a 1996 ecological risk assessment. Subsequent guidance for conducting ecological risk assessments has been issued.			
	Recommendation: An updated ecological risk assessment should be performed.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	USACE	EPA	9/14/2022

Deferring a protectiveness determination necessitates that the FYR report is addended once sufficient information has been obtained to make that determination. A FYR addendum may be completed by September 14, 2022.

The environmental indicators currently listed for the Cornhusker Army Ammunition Plant site are as follows:

Human exposure under control and groundwater migration under control.

Based on the finding during this FYR period, it is recommended that the groundwater environmental indicator be changed to “Insufficient data.”

The next FYR is due on September 14, 2025.

APPROVAL

**MARY
PETERSON**

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Mary P. Peterson, Director
Superfund and Emergency Management Division

Date

Attachments