STATEMENT OF BASIS  
March 10, 2022

Former Sunflower Army Ammunition Plant  
KDHE Project Code #: C4-046-71059  
EPA ID # KS3213820878  
Solid Waste Management Unit 56 – Monitoring Well South of Facility 211,  
DeSoto, Johnson County Kansas

Facility/Unit Type: Monitoring wells installed for investigation around buildings 210 & 211  
Contaminants: None  
Affected Media: None  
Proposed Remedy: NFA for surface and subsurface soils and all other media

INTRODUCTION

This Statement of Basis (SB) describes the proposed corrective measures (remedy) for Solid Waste Management Unit, SWMU 56 Monitoring Well South of Facility 211, at the Former Sunflower Army Ammunition Plant (SFAAP) in DeSoto, Kansas. The Kansas Department of Health and Environment’s (KDHE) authority for requiring corrective action at SFAAP is based upon the KDHE Bureau of Remediation (BER) SFAAP Consent Order No. 05-E-0111 and Kansas Hazardous Waste Statutes: K.S.A. 65-3430 et seq., K.S.A. 65-3452a et seq., and K.A.R. 28-31-4 et seq. Environmental response actions at SFAAP comply with the Defense Environmental Restoration Program (10 U.S.C. §2701). The SFAAP is not on the National Priorities List.

The KDHE is issuing this Statement of Basis as part of its public participation responsibilities under the Resource Conservation Resource Act (RCRA). This document highlights the information that is presented in more detail in the facility Administrative Record (AR). The public is encouraged to review these documents for a more complete understanding of the environmental issues at SWMU 56 and the corrective actions that are planned. The AR locations are noted at the end of this document.
PROPOSED REMEDY

The proposed remedy for SWMU 56 is No Further Action (NFA). Long term monitoring (LTM) of groundwater concluded that groundwater at SWMU 56 is no longer impacted above acceptable standards, and that soil and groundwater data demonstrate that there is no current or future potential risk from soil or groundwater at SWMU 56. No excavation or remedial measures were taken.

FACILITY BACKGROUND

The former SFAAP is located near DeSoto, Kansas, in the northwest corner of Johnson County. It is approximately 30 miles southwest of Kansas City, Kansas, and 16 miles east of Lawrence, Kansas. SFAAP includes approximately 9,065 acres and is surrounded primarily by agricultural land. It is bounded on the east by Spoon and Kill Creeks and on the west by Captain Creek (Figure 1). The plant consisted of production facilities, administrative and storage facilities, powerhouses, landfills, lagoons, ditches, burning grounds, sumps, projectile ranges, and waste treatment facilities. Most of the assets of the plant are no longer in active use. The Site produced nitrocellulose, nitroglycerin, and a variety of propellants from 1942-1971, acids, and nitroguanidine from 1971-1992. The plant was declared excess in 1998 by the Army and sold to Sunflower Redevelopment LLC in 2005. The site is composed of 70 Solid Waste Management Units (SWMUs) where a release of hazardous waste was identified and 27 Areas of Concern (AOCs) where hazardous waste or constituents have been identified but are not linked to a specific solid waste management practice.

SUMMARY OF SWMU 56

SWMU 56, Monitoring Well South of Facility 211, is in the northeast portion of the SFAAP and encompasses approximately 1.6 acres (Figure 2). Facility 211 itself is not located within the SWMU 56 boundaries, but adjacent to the SWMU. SWMU 56 is defined by an area where land application of treated wastewater from the nitroguanidine (NQ) process area was known to be conducted and installation and sampling of monitor wells in 1996 found high concentrations of nitrate (Tetra Tech 2007). Facility 211 was used as a Backup Generator building. Buildings 210 and 211 are of concrete block construction with no exterior asbestos containing materials (ACM) or lead-based paint present. A potential for ACM floor tile exists inside the building and will be addressed when the building is removed or renovated.

SUMMARY OF FACILITY RISKS

Groundwater samples collected from Monitoring Well 003MW003 in September 1996 showed concentrations of nitrate/nitrite at 99,200 microgram per liter (μg/L), above the current USEPA Maximum Contaminant Level (MCL) of 10,000 μg/L and below the Consent Order’s performance standard of 250,000 μg/L. While the source of the nitrates is uncertain, land application of treated wastewater from the nitroguanidine (NQ) process area was known to be conducted near SWMU 56 for several years. In addition, the area has been used for livestock grazing and non-point source impacts are a possibility (Tetra Tech 2008). In 1996 lead was detected in groundwater collected from Monitoring Well 003MW003 at a concentration of 15.5 μg/L. This result slightly exceeds
the Risk Based Standards for Kansas (RSK) value of 15.0 μg/L (KDHE, 2021). There is no known source of lead in the vicinity of SWMU 56.

Monitoring Well 003MW003 was subsequently sampled as part of the Relative Risk Site Evaluation (RRSE) conducted by Battelle in 2003. Nitrate/nitrite was not detected in groundwater samples collected from Monitoring Well 003MW003. Soil samples collected at SWMU 56 during the RRSE showed a maximum concentration of nitrate at 6.18 milligram per kilogram (mg/kg). While the maximum soil concentration was slightly higher than background conditions calculated for SFAAP, it was below the TMCL presented in the 2003 RRSE of 1,000 mg/kg (TMCL Source = 2000 USEPA preliminary remediation goals [PRGs]), and updated TMCL of 200 mg/kg (TMCL Source: (KDHE 2021) Residential RSK value) as presented in a March 22, 2011 request for no further action prepared by Tetra Tech. A map showing the historical sample locations and aerial photography is found in Attachment 2 of the 2003 RRSE Report.

In response to KDHE’s comments on the 2003 RRSE Report, long term monitoring (LTM) of groundwater was performed at SWMU 56 to evaluate trends for nitrogen in groundwater and determine the need for additional actions at SWMU 56. Groundwater samples were collected from Monitoring Well 003MW003 in November of 2007, May and November of 2008, and in July and December of 2009 as part of the LTM activities. While the sampling list varied over the course of LTM, analyses were performed for nitrogen (total organic), ammonia (as N), nitrate, nitrate/nitrite, nitrite, and nitrogen (TKN). All nitrate, nitrate/nitrite, and nitrite sample results were below their respective TMCLs referenced above. LTM sampling results were summarized in the Long Term Monitoring Report (May 2008) and the Long Term Monitoring Report for 2008 and 2009, Solid Waste Management Unit 56, Former Sunflower Army Ammunition Plant, Desoto, Kansas (LTM Report) which was prepared by Tetra Tech (2010). The LTM report concluded that groundwater at SWMU 56 is not impacted, and that laboratory data demonstrate there is no current or future potential risk from soil or groundwater at SWMU 56.

Buildings 210 and 211 are not located within the SMWU 56 boundaries but are adjacent to the SWMU (Figure 2). These building were observed to have no exterior environmental risks. They are built of concrete and were not painted so there is no risk of LBP, pesticides, or lead. Inside the building suspected ACM floor tiles and possibly some pipe wrap may be present, but soil testing revealed no asbestos contamination. No work is necessary until demolition or remodeling.

**RISK ASSESSMENT**

The Army conducted a streamlined health risk evaluation by comparing RFI data to the approved TMCLs for the site. KDHE believes that proper employment of the KDHE RSK Manual values result in risk-based remediation that is consistent with federally promulgated standards, including the Safe Drinking Water Act, 42 U.S.C. §300f – 300j-26, and is protective of human health as required by Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., including the Hazardous and Solid Waste Amendments (HSWA) and 40 CFR Part 264.101. KDHE Tier 2 risk-based cleanup goals represent concentrations at which the contaminants pose an acceptable human health risk to receptors, including sensitive groups (e.g., children or the elderly), over a lifetime.
Cleanup goals were developed for two general categories of receptors: residents and non-residents, and considered appropriate land-use designation, exposure frequency, and exposure duration. According to the Johnson County Rural Comprehensive Plan Resolution No. 079-98, Conceptual Land Use Plan, Sunflower Army Ammunition Plant, July 23, 1998, the area encompassing SWMU 56 is proposed to be a Business Center. Based on this land-use, the potential current and future receptors include:

- Current: Construction workers
- Future: Construction workers, facility employees and visitors.

The LTM plan identified nitrates as COCs at SWMU-56 below TMCLs, but above the EPA MCL, therefore, the exposure pathway for soil was considered during the assessment. Soil: Evaluated exposure pathways include incidental ingestion, inhalation of airborne particulates (dusts), and dermal contact (organic compounds only). Groundwater for potable use is restricted at this property. Based on comparison of the LTM results to TMCLs, there is no future potential risk from soil and groundwater at SWMU-56. Potential sitewide groundwater contaminants in the northeast area of the SFAAP site will be evaluated during the US Army’s assessment of Groundwater Operable Unit #2 (GWOU #2).

KDHE determined in 2013 that lead concentrations identified in the groundwater were of minimal risk and no source of lead was identified. No additional lead sampling is required due to the intended use of the property.

**SUMMARY OF ALTERNATIVES**

Following completion of the site sampling, site-specific groundwater at the site showed COCs below the site-specific TMCLs. Resulting long term groundwater monitoring from 2007 to 2009 indicated groundwater is not impacted above TMCLs. Because the monitoring results found no remaining COCs and the site has no current facility risks, remedial action is not warranted to protect human health and the environment at the site.

**EVALUATION OF THE PROPOSED REMEDY AND ALTERNATIVES**

The KDHE has determined that NFA for soil and groundwater is the appropriate remedy for SWMU 56. KDHE concurs with the results from monitoring well sampling and agrees there is no facility risk. This proposal is based upon KDHE’s review of all available historical documentation regarding the Site.

**PUBLIC PARTICIPATION**

KDHE solicits input from the community during the RCRA decision-making process to ensure that the community concerns are considered in approving the recommended remedial alternative for SWMU 56. The public is also invited to provide comments on remedial alternatives not addressed in investigation reports. KDHE has set a public comment period from March 11 through April 11, 2022 to encourage public participation in the remedy selection process. A public meeting...
is not scheduled at this time. If a public meeting is requested in writing with a statement of issues to be raised, the KDHE may conduct a public meeting virtually to receive both oral and written comments.

After review of any public comments related to the Statement of Basis, KDHE will determine if additional remedy or investigation is necessary. Final determination for completion of the remedy will be documented in an Agency Decision Document and/or No Further Corrective Action Planned Determination letter. Upon final agency approval for closure, KDHE will issue the No Further Action Planned Determination, and the RCRA Permit applicants will request, and KDHE will approve, exclusion of the parcels in SWMU 56 referenced herein from a KDHE Draft RCRA Permit, if not already excluded in EPA permit modifications.

**ADMINISTRATIVE RECORD**

The administrative record (AR) is available at the following locations:

<table>
<thead>
<tr>
<th>Name/Address</th>
<th>Contact Information</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>KDHE</td>
<td>Phone: (785) 296-1673 (main line) or 785-296-9901 (Margaret Townsend, Unit Chief Federal Facilities)</td>
<td>Monday - Friday: 8 a.m. - 12 p.m. and 1 p.m. - 4 p.m.</td>
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In addition, KDHE has established a webpage dedicated to the Site, which is available online during the comment period at: [https://www.kdhe.ks.gov/716/Sunflower-Army-Ammunition-Plant](https://www.kdhe.ks.gov/716/Sunflower-Army-Ammunition-Plant).

After the public comment period, KDHE will summarize and respond to all comments received in the Final Agency Decision document. The Final Agency Decision document will be incorporated into the AR and a copy will be sent to individuals who provided comments during the public comment period. To send written comments, request a public meeting, or obtain further information, please contact Margaret Townsend, Unit Chief Federal Facilities, at Margaret.Townsend@ks.gov or by phone at 785-296-8801.

**REFERENCES**


FIGURES

Figure 1: SFAAP Facility Map
Figure 2: SWMU 56 Site Location at SFAAP
Figure 1. SFAAP Facility Map
Figure 2. SWMU 56 Site Location Map