

Per the Federal Facility Agreement for Iowa Army Ammunition Plant, Article X.B.1, the attached document is the final version of the submitted document.

ACTION MEMORANDUM ADDENDUM
IOWA ARMY AMMUNITION PLANT
PERMANENT POTABLE WATER SUPPLY

I. PURPOSE

The purpose of this Action Memorandum is to document approval of the proposed removal action described herein for the Iowa Army Ammunition Plant, Middletown, Iowa, to be executed by the U.S. Army. This effort is an addendum to the attached Action Memorandum of the same title approved by the Army in 1993. This action will address additional FY2001 risk reduction for southern boundary residents, using groundwater as a drinking water source.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

Iowa Army Ammunition Plant (IAAAP), located approximately 10 miles west of the city of Burlington, Iowa was constructed in 1941 to produce supplies for World War II. Production activities began in September 1941 and ended in August 1945. Production was resumed in 1949 and has continued to the present. In the 1960s and 1970s, the IAAAP produced supplies for the war in Southeast Asia. During peacetime, activities at the plant continued, at a reduced level. Also, during a period from 1946 to 1950, nitrogen fertilizer was produced at IAAAP. From 1947 through 1973, the former Atomic Energy Commission operated facilities on site, which then reverted back to the Department of Defense's control in 1973. The IAAAP is currently operating to load, assemble and pack (LAP) ammunition items, including projectiles, mortar rounds, warheads, mines, and the components of these munitions.

B. Contamination Assessment

In 1978, an Installation Assessment of the IAAAP was conducted by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) which involved personnel interviews and a review of the IAAAP record. Based on findings of the report, it was concluded that off-site migration of contamination in the surface waters was not occurring, but three areas at the IAAAP were identified as having known or possible contamination.

A more specific evaluation of groundwater contaminants in off-post areas was initiated in 1985. A resident living adjacent to IAAAP requested assistance from their Congressional Representative to determine if contaminants were leaving the IAAAP and possibly entering into their drinking water causing the family's current health problems. The Army Environmental Hygiene Agency (AEHA) in coordination with the Iowa Department of Natural Resources (IDNR) sampled 31 off-post residential water supply wells and analyzed for volatile organics and explosive compounds. Results from this investigation showed that no detectable concentrations of contaminants were found at any of the sample locations.

Circa 1991, the U.S. Army and the U.S. Environmental Protection Agency's Office of Drinking water published a health advisory that recommended the drinking water criteria for RDX for general population be established at 10 parts per billion (ppb) for investigation only and 2 ppb for multiple pathways. As part of the Remedial Investigation/ Feasibility Study(RI/FS), surface waters leaving the IAAAP were sampled in 1992 and evaluated for possible contamination. The results showed the surface waters contained explosives. To determine the impact of this contamination to residents living near the southern boundary of the IAAAP, a investigative effort separate from the RI/FS was conducted. A select number of residences were chosen and their drinking water was analyzed in 1993. Two of the six wells tested were found to contain RDX above the Lifetime Health Advisory Level of 2 ppb.

To further evaluate the possibility of residential off-post contamination, the U.S. Army Environmental Center, in coordination with the U.S. Army Corps of Engineers, conducted an extensive follow-on sampling and analysis program of residences located south of the IAAAP later in 1993. The U.S. Army agreed to sample additional off post wells implementing the 2 ppb health advisory as the decision point for alternative water. Of the 54 homes sampled, three additional wells were found to contain RDX above the Lifetime Health Advisory Level of 2 ppb. Therefore, after two sampling rounds a total of five residents were impacted. These residents were provided bottled water as an interim action and subsequently provided connection to Rathbun Regional Water in accordance with the approved 1993 Action Memorandum.

One hundred fifty-four additional residents were connected to the Rathbun Regional Water System as a cost saving measure and authorized by the 1993 Action Memorandum. Approximately 31 residents declined or did not respond to the Army's 1993 offer.

At the request of residents, the Army re-sampled the five impacted residential wells in 1998 and found that only two still had impacted wells slightly above the Health Advisory of 2ppb. Subsequent off post groundwater and surface water sampling conducted in 1999, 2000, and 2001 has revealed a groundwater plume that contains the explosive RDX above the Health Advisory Level of 2ppb. The Army plans further groundwater investigation.

The Army coordinated with the Des Moines County Health Department and the EPA in 2001 to determine if additional wells had been permitted and installed in the areas of concern to the south of the IAAAP since 1993. According to the information the Des Moines County Health Department provided, no new wells have been installed in the areas of concern. The EPA is currently conducting an investigation to more thoroughly address this issue.

In 2001, Congressional interest and public concern has surfaced and the Army has agreed to provide Rathbun water connections for the locations that declined or did not respond to the Army's 1993 offer. This is the accomplishment that this Action Memorandum addresses.

The following off-post groundwater sampling events have occurred at IAAAP since 1985.

DATE SAMPLED	WELLS SAMPLED
March - May 1985	31 off-post residential wells 10 on-post monitoring wells
November 1992	6 off-post residential wells
March 1993*	6 off-post residential wells
March - April 1993	54 off-post residential wells
May 1993*	3 off-post residential wells
August 1998	5 off-post residential wells
April 2001	6 off-post residential wells

*Note: The March 1993 and May 1993 sampling events were confirmation sampling events. These two events were performed to confirm the initial results from the first sampling events (November 1992 and March - April 1993).

C. State and Local Authorities' Roles

The Region VII Environmental Protection Agency (EPA) is a party with the U.S. Army to the Federal Facility Agreement signed in September 1990. As a party to the agreement, the EPA has responsibility for regulatory oversight and guidance of the IAAAP Installation Restoration, Program. In addition, the State of Iowa Department of Natural Resources is kept abreast of the environmental investigations at the IAAAP and are provided copies of all documents for review, and were informed of the Army's findings of off-post contamination.

III. THREAT OF PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Two residential drinking water wells were still found with levels above or at the RDX action level of 2 ppb. The Army's off post groundwater investigation has found an affected groundwater plume and the area requires further study. This action is to address additional FY2001 risk reduction for residents of the southern boundary of the IAAAP using groundwater as a drinking water source.

B. Threats to the Environment

The proposed removal action applies to the contamination of the drinking water aquifer. Presently, there are no environmental risks associated with the groundwater contamination.

IV. ENDANGERMENT DETERMINATION

Actual releases of contaminants from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial threat to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action

1. The proposed removal action addendum involves providing public water hookups or compensation for a hookup (if already completed) to residents who declined or did not respond to the Army's offer in 1993. All residents south of the IAAAP, east of the unnamed tributary of the Line 3A sewage treatment plant, and west of Spring Creek to the Skunk River were given this offer. A private water company, Rathbun Water Company, Inc., was awarded a contract to provide public water to this area and began construction on July 5, 1993. Well abandonment will not be required as part of this effort. The contract with Rathbun Water Co. Inc., does not require the residents to cap their wells, but they must ensure that the well water and public water cannot enter the same drinking water lines.

This action requires the Army to pay for public water hookups to approximately 40 additional residences. An average total cost per complete hookup per household is estimated at \$2,750.

2. Contribution to Remedial Performance

Implementation of this removal action will contribute to the efficient performance of the long-term groundwater remedial action by providing the component of the final action, which is "protective of human health".

B. Estimated Cost

The cost of providing public water to residents in this area is estimated to be \$110,000. Table I provides a detailed breakout of costs.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks to the residents through prolonged exposure to groundwater contamination. Commitments made by the Army to the public and Congress will be unfulfilled and public trust will decline dramatically.

VII. OUTSTANDING POLICY ISSUES - None. VIII. RECOMMENDATION

This Action Memorandum Addendum represents the selected FY2001 removal action for the Iowa Army Ammunition Plant in Middletown, Iowa, developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act as amended, and is consistent with the National Contingency Plan. This decision is based on the Administrative Record for the site. The total project costs are estimated at \$110,000 and is funded under the fiscal year 2001. Environmental Restoration, Army program.

TABLE I
PERMANENT POTABLE WATER SUPPLY COSTS
IOWA ARMY AMMUNITION PLANT

NUMBER OF RESIDENCES: 40
TOTAL COST: \$110,000

CONNECTION FEE
\$350.00

MEMBERSHIP FEE
\$5

CONNECTION FROM WATER MAIN TO METER PIT
\$1200

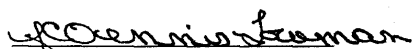
CONNECTION FROM METER PIT INTO HOME
\$730

ADMINISTRATION AND DOCUMENTATION
\$465

07/27/01

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APPROVAL:



Yolanda C. Dennis-Lowman
Lieutenant Colonel, OD
Commander, Iowa Army
Ammunition Plant